Perspectives and Theories of Social Innovation for Ageing Population

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PERSPECTIVES AND THEORIES OF SOCIAL INNOVATION FOR AGEING POPULATION

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EDITORIAL
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Editorial: Perspectives and Theories of Social Innovation for Ageing Population

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Editorial on the Research Topic

Perspectives and Theories of Social Innovation for Ageing Population

OVERVIEW

Gerontology together with its subfields, such as social gerontology (sociology of ageing), geragogy, educational gerontology, political gerontology, environmental gerontology, and financial gerontology, is still a relatively new academic discipline that is currently intensively developing, expanding research fields and combining various theoretical and practical perspectives. The interdisciplinarity, transdisciplinarity, and multidisciplinarity of research on ageing and old age, despite its vast thematic, methodological and theoretical diversity, have a common denominator, which is the focus of research work on improving the quality of life of older people (see Fabiś et al., 2015). It is the concern for the components of quality of life such as welfare and well-being as well as focus on learning about phenomena conditioning successful ageing that has become motivators and premises hidden or visible in many texts included in the Research Topic "Perspectives and Theories of Social Innovation for Ageing Population."

The Research Topic that we are presenting to our readers is unique not only because of its size but above all because of its novelty and social involvement, visible in the content of individual chapters. The presented collection includes 17 articles prepared in total by 76 authors from the following countries: China, Finland, Germany, Ghana, Hungary, Ireland, Israel, Italy, Japan, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, the United Kingdom, and the United States. Two journals were combined with this Research Topic: "Frontiers in Public Health" and "Frontiers in Sociology." The presented Research Topic contains seven types of articles covering: two community case studies (Brown et al.; Pinzón-Pulido et al.), eight original research articles (Berde; Bjursell; Dovie; Senior; Spinelli et al.; Stypińska et al.; Wanka; Zhang and Yang), two perspective articles (Aoo et al.; Piel and Robra), one hypothesis and theory paper (Toczyski et al.), one policy and practice review (Tziraki-Segal et al.), one methods article (Ramovš et al.), and two book reviews (Cieśla; Leszko).

The rationale to start work on this set of texts was the desire to continue and deepen the research analyses of the editors of this set, which concern the development of social innovations for the ageing population as well as changes of public policy on ageing (the ageing policy) (see Klimczuk, 2015, 2017; Tomczyk and Klimczuk, 2015). This Research Topic deals with topics covering issues such as social learning, intergenerational transmission, senior entrepreneurship, creative content creation by older adults, care services, raising the independence of older people in their living environments, dementia challenges, the image of the older generation in local social policies, new trends in qualitative research on old age, strategies for dealing with chronic diseases, the use of digital tools in health education, the silver economy/longevity economy, age-friendly environments, the

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diversity of structures and social services, preparation for old age, and food safety. The wide variety of submitted texts shows several selected and, according to the authors, current challenges that contemporary seniors have to face. The articles comprising this Research Topic are organized according to five themes.

THEME I: CRITICAL EVALUATION OF THE SOCIAL IMAGE OF OLDER PEOPLE

Aoo et al. balance in their study between the historical perception of older people in authority status and the current perception of many seniors as beneficiaries of effective social policies. Japanese researchers are engaged in a fair discussion that shows an attempt to create a balance between modern seniors' support systems and the historical role of a sage or mentor. A further study by Wankaine addresses the universal issue for all people who are leaving their work and retiring. A researcher from Germany showed various connotations regarding the retirement period and related consequences in the individual dimension. This article is part of a broad discussion on the changes that occur under the influence of cessation of professional activity. This is also one of the priority research areas for the economies of rapidly ageing countries. In the next chapter Piel and Robra, using the achievements of critical gerontology (see Estes and Phillipson, 2007; Moody and Sasser, 2018) ask about the type and functioning of people in late adulthood in the area of dominant models of intercourse with each other. Researchers question the common images of heterosexual couples and refer in their analyses to the deconstruction of the current model of close interpersonal relationships in old age. The presented studies may also be used to eliminate negative stereotypes regarding old age.

THEME II: INNOVATION AND QUALITY OF LIFE IN AGEING SOCIETIES

The team of Spinelli et al. presents a multitude of threads regarding individual and broader conditions to improve the quality of life. The narrative by British scholars shows new ways of conducting action research through living labs that serve for testing innovative social tools and public services. According to the authors of this chapter, innovation is not only to be an exemplification of social policies focused on the well-being of the individual but also to strengthen the broadly understood economy. The article by Senior is not only related to an earlier study by further focusing on examples from the United Kingdom, but also by highlighting the importance of following non-standard paths in the search for alternatives, new methods, and cross-sectoral cooperation in solving health problems of older people. The study by Bjursell is focused on the area of new methods for discovering limiting and stimulating factors. The Swedish scholar refers here to the popular and well-known concept of the social research methodology, which is based on biographical techniques (cf. Fabiś et al., 2017). Berde, representing Hungarian research institutions, contributes to the discussion on the topic of age discrimination and ageism as well as shows critical and constructive examples of such issue which are taking into account the realities of the Central and Eastern Europe. The text focuses on one of the many predictors of age discrimination and links to the opposite axis of the issue, which is the removal of marginalizing factors in both the workplace and leisure activities (see Veteška, 2016). This multithreaded and multifaceted view on issues of innovation and quality of life ends with two reviews of publications on contemporary trends related to the population ageing. Cieśla the topic of age-friendly cities and communities. While Leszko at the descriptions of the concept of the silver economy/longevity economy. Both scholars discuss the advantages and disadvantages of policy ideas that are gradually emerging around the world in various forms, along with seeking positive responses to the challenges of the ageing population.

THEME III: INNOVATION IN THE CONTEXT OF SUPPORTING ACTIVE AGEING AND HEALTHY AGEING

The next text in this Research Topic for the first insight stands out due to the synergy of cooperation between thirty authors from eight countries who have developed a common position on the issue of health promotion by fostering the development of a culture of pro-health behavior. Tziraki-Segal et al. correctly note that health is a salutogenic and direct element of lifelong education as well as is closely linked to politics, business, and research. In the next article, scholars representing four different research centers (Pinzón-Pulido et al.) refer directly to the previous text regarding issues related to the promotion of healthy lifestyles and co-designing of public health solutions. In their study, Spanish scholars clearly argue the need to strengthen both active ageing and healthy ageing in line with the standards developed by the World Health Organization (WHO) and to improve the exchange and use of best practices. This study is in line with the triangulation of medical outlook with lifelong education that serves and promotes successful ageing as well as healthy ageing (see Mackowicz and Wnek-Gozdek, 2018). Another article written by seven researchers from the United States (Brown et al.) focuses on a very narrow medical area which is support for people with cystic fibrosis in the field of nutritional safety.

THEME IV: TRANSFORMATION AND MODERNIZATION OF CARE SERVICES

Ramovš et al. present an exemplification of social learning in the perspective of exchange of experience and preparation of staff providing care services addressed to older people. The text brings a new look at the learning process using the accumulated experience of seniors as well as popular gerontological theories which are known for decades. Meanwhile, the next text by Dovie introduces readers to the topic of social policy mechanisms in the field of care services and the health sector. The systemic and individual perspectives on the challenges typical for the Ghanaian society are a pretext to undertake a broader and global debate on the issue of health inequalities and well-being

in old age. Despite the seemingly local overtones of Dovie's study, it can also be seen as an example of discussions taking place in many countries struggling with the consequences of an ageing population in the aspect of insufficient efficiency of the healthcare system. Moreover, Zhang and Yang in their chapter, attempted to build a typology of care services practices in China. This is an article familiarizing readers with models of local solutions in the care for older people. The study also stimulates further discussion on the factors of efficient and culturally compatible people-centered care systems in individual societies.

THEME V: DEVELOPMENT OF KEY COMPETENCIES AND CREATIVITY OF OLDER PEOPLE

Stypińska et al. presented a practical discussion on one of the key competences, promoted and defined by the institutions of the European Union. According to German scholars, the senior entrepreneurship could be one of the answers to the shortage of employees and the other consequences of demographic changes for labor markets. The study also shows how important it is to relate the typology of key competencies to opportunities and challenges as well as the accumulated resources of older people. The last chapter of the Research Topic focuses on the example of creative ways to strengthen digital skills (which are also one of the key competencies) among older people. Given the global data on the digital divide (see Tomczyk et al., 2019), this phenomenon requires continuous action to ensure effective digital inclusion. One such example can be seen in an article whose authors (Toczyski et al.) combine crystallized knowledge of older people with issues related to minimizing digital exclusion.

CONCLUSION

The research results presented in the articles of this Research Topic allow formulating several hypotheses. Firstly, gerontology is an interdisciplinary field with a high level of innovation potential (Szarota, 2004). Secondly, both new research areas and innovative, practical solutions are determined by the culturally diverse perception of old age and various public interventions in individual countries undergoing the ageing of the population. Thirdly, the measure of social solidarity and maturity is the search for solutions that are characterized by a high level of innovation and pragmatism, aimed not only at children and young people but also at people in late adulthood (see Tomczyk, 2015).

The authors, intentionally selecting the topics presented above, also show the directions in which gerontology could develop. These are both new perspectives in the "soft" areas, e.g., educational, interpersonal relationships, self-improvement, and strengthening of activity, as well as in the "hard" areas when it comes to information and communications technologies (ICTs) and medical, economic, or biological issues. The authors are aware that due to demographic changes and redefinition of views, according to the current of critical gerontology (Formosa, 2005; Mackowicz and Wnek-Gozdek, 2016), new challenges will emerge not only for the individual responsible for their preparation for old age but also before societies of solidarity and innovation. One can risk saying that for the authors of the chapters contained in "Perspectives and Theories of Social Innovation for Ageing Population," old age appears as a period of life including challenges resulting from deficits and characteristics specific to this development period. At the same time, despite the awareness of the negative consequences associated with the ageing process, the authors constructively express the possibilities inherent in late adulthood, both in individual and collective dimensions. Selected texts can also be read at the level of meta-theoretical assumptions, in which old age appears to be a favorable stage of life in the macro-social perspective, because it contributes to the development of innovation, and thus also to the improvement of the quality of life of all ageing people. Also, a deep reflection on late adulthood strengthens and further develop social theories of ageing including, among others, sociology, economics, public policy, management and organization, social work, and pedagogy.

We present to our readers a Research Topic characterized by a deep and multi-directional discourse on the ageing process and the phenomenon of old age. The study also has universal elements in a global perspective. The challenges and opportunities presented by the authors in a sense create a new quality also in the perspective of the functioning of "global seniors" who, similarly to representatives of other age categories (e.g., global teenagers), despite cultural, geographical, and economic differences face similar biopsychosocial challenges.

AUTHOR CONTRIBUTIONS

The lead author of this editorial is ŁT. AK outlined, drafted the editorial, contributed by reviewing and revising the manuscript of editorial and leading editorial work on all manuscripts included in this Research Topic. All authors of papers listed have made a substantial, direct and intellectual contribution to the work, as well as approved their papers for publication.

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REFERENCES

Estes, C. L., and Phillipson, C. (2007). "Critical gerontology," in *Encyclopedia of Gerontology*, ed J. E. Birren (Oxford: Academic Press), 330–336. doi: 10.1016/B0-12-370870-2/00043-3

Fabiś, A., Wąsiński, A., and Tomczyk, Ł. (2017). Existential perspective of biography-related reflection in the intergenerational narrative messages. *J. Family History* 42, 326–340. doi: 10.1177/0363199017711213

Fabiś, A., Wawrzyniak, J., and Chabior, A. (2015). *Ludzka Starość. Wybrane Zagadnienia Gerontologii Społecznej (Human Old*

Age: Selected Issues of Social Gerontology). Kraków: Oficyna Wydawnicza Impuls.

Formosa, M. (2005). Feminism and critical educational gerontology: an agenda for good practice. *Ageing Int.* 30, 396–411. doi: 10.1007/s12126-005-1023-x

Klimczuk, A. (2015). *Economic Foundations for Creative Ageing Policy, Vol. I: Context and Considerations.* New York, NY; Basingstoke: Palgrave Macmillan. doi: 10.1057/9781137465337

Klimczuk, A. (2017). *Economic Foundations for Creative Ageing Policy, Vol. II: Putting Theory into Practice.* New York, NY; Basingstoke: Palgrave Macmillan. doi: 10.1057/978-1-137-53523-8

Mackowicz, J., and Wnek-Gozdek, J. (2016). It's never too late to learn–how does the polish U3A change the quality of life for seniors? *Educ. Gerontol.* 42, 186–197. doi: 10.1080/03601277.2015.1085789

Mackowicz, J., and Wnek-Gozdek, J. (2018). Educational activity of seniors and their quality of life. *Int. J. Mental Health Psychiatry* 4:43. doi: 10.4172/2471-4372-C1-008

Moody, H. R., and Sasser, J. R. (2018). "Critical questions for critical gerontology (and critical gerontologists)," in *Critical Gerontology Comes of Age: Advances in Research and Theory for a New Century*, ed C. Wellin (New York, NY: Routledge), 35–45.

Szarota, Z. (2004). *Gerontologia Społeczna i Oświatowa. Zarys Problematyki (Social and Educational Gerontology: Outline of Issues)*. Kraków: Wydawnictwo Naukowe Akademii Pedagogicznej.

Tomczyk, Ł. (2015). *Edukacja osób Starszych. Seniorzy w Przestrzeni Nowych Mediów (Education of Older People: Seniors in the Space of New Media)*. Warszawa: Difin.

Tomczyk, Ł., Eliseo, M. A., Costas, V., Sánchez, G., Silveira, I. F., Barros, M.-J., et al. (2019). "Digital divide in latin america and europe: main characteristics in selected countries," in *2019 14th Iberian Conference on Information Systems and Technologies (CISTI)* (Coimbra), 1–6. doi: 10.23919/CISTI.2019.8760821

Tomczyk, Ł., and Klimczuk, A. (2015). *Aging in the Social Space*. Kraków-Białystok: Stowarzyszenie Gerontologów Społecznych.

Veteška, J. (2016). *Gerontagogika: Psychologicko-Andragogická Specifika Edukace a Aktivizace Senioru (Gerontagogy: Psychological-Andragogical Specifics of Education and Activation of Seniors)*. Prague: Ceská Andragogická Společnost.

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PERSPECTIVE
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To Be Supported, or Not to Be: Images of Older People in Policy and the Reality in Local Communities in Japan

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Social innovation is not only about tangible new products, services, policies, and laws, but also about changes in societal perceptions, values, and norms. In Japan, current policies for older people, including Long-Term Care Insurance, tend to focus on medical and long-term care and other forms of "support" for older adults such as a pension. Naturally, these policies depict older adults as the "beneficiaries," or the ones in need of support. However, when we look back at pre-modern Japan, it was not always like that. Although older adults did depend on support from family and community members, they also played an active role as a laborer and caretaker as well as providing useful knowledge for their family and community. Moreover, currently, in different areas suffering from a sharp decline in population, such as Okayama prefecture in western Japan, older people are actually playing the role of the supporter for groups of people who are in need, not only the aged population but also other demographics including young children and parents. Based on this historic "tradition" and the present reality, this paper argues that we need to reestablish the image of (at least some) older people as capable of taking a more active and responsible role in society, and position them as such in the new "welfare society" systems in order to replace the conventional "welfare state" model.

Keywords: social innovation, local community, older people, welfare society, social service

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BACKGROUND: SOCIAL INNOVATION AND AGING

Since the 1990s, social innovation (hereafter "SI") has attracted the attention of both policy-makers and academics in different regions, including Europe, North America, and Asia (Aoo, 2018). This paper defines SI, in line with the recent literature mainly developed in the United Kingdom and Europe, as:

i. A new product, service, or initiative that can solve a social issue and/or create social value in a better way than existing methods, and;
ii. A process that leads to a change in current perspectives, values, norms, attitudes, relationships, and systems, and finally to the systemic change of the society (Murray et al., 2010; Nicholls et al., 2015).

Although this aspect is often overlooked, SI does not only refer to tangible devices and services, or the enacting of new laws and regulations. Another aspect of SI is serving as a catalyst for changes in the cultural-cognitive perspectives and social norms that are framed by the cultural structure of the society (Bourdieu, 1990; Heiskala, 2007; Klimczuk, 2015).

Aging is both a major social issue that needs to be solved by SI, and a structural change that calls for SI in each society. Especially in the developed world, the classic "welfare state" model (Esping-Andersen, 1990) is no longer sustainable due to slowing economic growth and an aging society, and SI is expected to provide the inclusive framework of a "welfare society" to replace it (Mulgan, 2012).

Still, older people are mostly treated in SI literature as the "beneficiary" or the "target" of social and medical care (Heinze and Naegele, 2012; Heals and Green, 2016). There is no question about the significance of establishing effective measures and support mechanisms for older adults. Nonetheless, this paper argues that (some) older people should be re-recognized as a "supporter" of aging societies, replacing the conventional view that older adults are only a target for support, by using Japan as an example. The argument is based on findings from historical studies that demonstrate that the one-sided view of seeing older people solely as "beneficiaries" is quite a recent phenomenon and not a persistent tradition. This study was carried out by the recommendations of the Okayama University Research Ethics Guidelines, and according to the current Guidelines and national regulations, do not require approval from an Ethics Committee. The study has obtained written informed consent from all participants.

This article takes the following structure. Following the introduction, section The Historical Image of Older People in Pre-Modern Japan introduces a few examples of images of older people in pre-modern Japan which shows them not only as recipients of support. Next, in section "Beneficiarization": The Shift in the Image of Older People in the Modern Era, it presents how older adults were re-defined in the discourse of modern Japanese society, especially in relation to the establishment of the Long-Term Care Insurance System in 2000. Section (Re-)Changing Reality in Local Communities describes how, mainly based on the example of Okayama prefecture, older people are shouldering the responsibility of supporting others within the community Finally, section Conclusion claims in conclusion that it is not unreasonable to ask for the contribution of older people who are both capable and willing, and is in fact a "re-invention" of a longstanding tradition that will also create a positive economic impact on society.

THE HISTORICAL IMAGE OF OLDER PEOPLE IN PRE-MODERN JAPAN

According to the recent findings of historical studies and literature on historical sociology, some form of charitable support for older people has existed in Japanese society since ancient times, based on Confucian values (Ikeda, 1986)[1]. In the Chinese-influenced legal codes of the eighth century, people over 60 years old were entitled to a decrease in taxes and other obligations. Older adults without a spouse were also entitled to receive some support (Shinmura, 1991). Meanwhile, in the medieval and early modern age under *Samurai* (warrior class) rule, it was a common norm in society that the rulers were responsible for helping people in need, including older people without living family members (Ikeda, 1986).

Of course, it is not realistic to believe that such support was continuously provided, and usually, the lords and administrators held children, extended family members, or the neighboring community responsible for supporting older adults, based on filial piety (Takagi, 2006)[2]. Therefore, the family was the primary source of support for older people[3]. On the other hand, older people also supported their families in various ways, from assisting with agricultural, and domestic work to taking care of and educating children and the sick. They were respected in the local community for their knowledge and contributions to familial or community functions and ceremonies and given a higher rank in public meetings (Shinmura, 1991). There is a famous folktale called "*Ubasute* (abandoning old women)" about an old woman who was kept hidden by her son while the ruler told his subjects to abandon "unproductive" old people. The advice she gave her son in response to the lord's impossible demands (e.g., to make a rope out of ashes) finally convinced the ruler of the usefulness of the wisdom of older adults (Kawai, 2017).

"BENEFICIARIZATION": THE SHIFT IN THE IMAGE OF OLDER PEOPLE IN THE MODERN ERA

After the late nineteenth century, as the population began moving to big cities from their hometowns and the structure of industry changed, older people lost the roles they held in traditional communities. The modern Japanese government also held children responsible for the support of older adults in the Civil Code (Shinmura, 1991), apart from philanthropic support provided through foundations with royal patronage (Yamaoka, 1993).

After defeat in WWII, the so-called "Japanese-Style Welfare Society" took form, consisting of weak public support[4], welfare and benefits provided by employers, and gender-based division of labor (positioning women as the caretakers in the family). This system persisted until the 1980s (Ueno, 2011; Aoo, 2017).

Since the 1970s, the issues of bedridden older adults and so-called "social hospitalization," which kept the elderly in hospitals that functioned as practical nursing homes, started to be recognized as a major problem in Japanese society (Aoo, 2017). At the same time, the "Japanese-Style Welfare Society" began to

[1] Values and the practice of filial piety, which is based on the Confucian literature of China, were widely accepted in East and Southeast Asian societies including China, the Korean peninsula, Vietnam, and Japan, and still remain a major factor in determining the behavior of children toward their parents (Chow, 2004).

[2] Mutual support systems in pre-modern Japan called *Ko* or *Yui* were major safety nets for ordinary people, but it was not easy for older adults without a regular cash income to pay premiums for the systems (Najita, 2009). Older people without family sometimes had to be hired by a wealthier family or live a vagrant life (Takagi, 2006).

[3] Still, family support was not unconditional and was often subject to negotiation (Takagi, 2006).

[4] Old people's homes run by the government only accepted poor older adults without living family members, and it also created a stigma of receiving public welfare services (Ueno, 2011).

dissolve after the 1990s due to slowing economic growth and changing employment and familial systems, such as the increase in temporary and part-time employment, and a reduction of the benefits provided by corporations (Tanaka, 2017).

The Long-Term Care Insurance System (LTCI) was launched in 2000 to respond to a rapidly aging society. The LTCI system itself was a landmark example of social innovation which created a new care services industry for older adults and achieved (at least partly) the goal of "socializing" the caretaking of older adults, that is, of society shouldering the burden together with family members[5]. On the other hand, LTCI defined older people as "recipients" of care services, and it created a major change in people's mindsets in a fairly short period, as the norm shifted from family-based care to services-based care[6]. Authors such as Miyamoto (2014) have emphasized the importance of empowering older people, utilizing their capabilities, and creating spaces for them to contribute to society. But in the policy arena, even with a major effort by the government to introduce communal and volunteer services under the banner of "Community-Based Integrated Care," these concepts remained marginal (Aoo, 2017). Tsutomu Hotta of Sawayaka Fukushi Foundation, who was involved in older adults care policies, recalls two of Japan's failures as (i) excluding older adults from the job market uniformly by their age; and (ii) not being able to provide enough non-profit organizations to invite older people to participate in activities to support their communities (Hotta, 2008).

(RE-)CHANGING REALITY IN LOCAL COMMUNITIES

However, the reality in local communities, especially in rural areas where populations are shrinking and local governments are being stretched thin by public sector reforms and merging municipalities, is necessitating older people to take on a new role. The northern area of Okayama prefecture in western Japan, where the authors reside, suffers from an aging population and depopulation. In Tsuyama, a town in the area, older people (above 60) are visiting other older adults and assisting with housework for a small fee, utilizing neighborhood association networks. They also provide support to young parents and have become organizers of community events. Ueyama, another mountainous area in northern Okayama, relies on mutual support networks of older people to provide welfare and social services[7].

Similar mutual support networks in the area are now being developed, based on neighborhood associations or school districts, including in the towns of Misaki, Kume-Nan, and Kagamino and Maniwa. There are active inter-area visiting and mutual learning among communities of older people. When the authors interviewed local supporters in Kume-nan town who run communal spaces and provide assistance for the livelihoods of others, some of them say "I did not have many ties with my local community when I was young because of my work, but now that I've retired, I want to help the community" or "We need to create an environment to help each other before we become the ones who need others' help." Requests and inquiries from local leaders such as the heads of neighborhood associations wishing to learn about such mutual support mechanisms are growing day by day. In the interviews, Mr. Kokumai of Smile Chiwa, a non-profit in Tsuyama city, also called for the participation of community members by saying "There are many people living alone without family, so if we consider them to be like a member of our own family, then we should do what we can." These initiatives and networks are starting to spread in urban areas as well, not only in isolated rural areas where the aging of the local population has become a fact.

From these changes, we can see older people defining new roles for themselves in aging communities and finding their *raison d'être* there. This is not only happening in Okayama, and according to Yomiuri Shimbun, a major national newspaper, many areas are having difficulty finding welfare commissioners to monitor people in need in local communities, and around 20% of municipalities have to raise (or abolish) their age limit for commissioners, which used to be under 75 years old[8].

CONCLUSION

This article has presented the changing image of older people over history and showed how older adults are coming back again as supporters of local communities.

One thing which should be made clear is that this paper is not describing this situation to absolve governments of their responsibilities by (over-)stressing the roles of family and community members, as some types of discourse on the "re-invention of tradition" tend to do. Contrarily, what we see as a major change/SI needed in Japanese society is

TABLE 1 | Model of changing workforce systems.

Post-WWII Model	Post-Industrial Model
- The dichotomy of paid full-time workers and unemployed	- More diversified employment types and payments
- Domestic caretakers and local volunteers were unpaid, often divided by gender roles	- Caretakers are rewarded according to their contributions

[5]Please see (Aoo, 2017) for the details of the LTCI system and its issues, including the sustainability of financial and human resources.

[6] According to research conducted by the Ministry of Health, Labor and Welfare in 2016 (page 24, Figure 2-2-27), only 18.6 percent of respondents say that they want to "stay home, taken care of mainly by family members" when they become frail, and others showed their preference to not depend on care by family members, including "stay at home without depending on family (37.4 percent)," "stay at home with both family care and external care services (17.5 percent)," "live in care facilities or medical institutions (total 25 percent)." The MoHLW website: *https://www.mhlw.go.jp/file/04-Houdouhappyou-12601000-Seisakutoukatsukan-Sanjikanshitsu_Shakaihoshoutantou/001_2.pdf* (Accessed 30th Dec, 2018, in Japanese)

[7]Research Institute for Local Community website: *http://www.npominken.ip/minmobi/* (Accessed 12th Oct, 2018, in Japanese)

[8]Yomiuri Shimbun 8th July 2018 "The Aging of Welfare Commissioners Getting Serious: Many forced to relax the age limit of under seventy-five." According to the article, the average age of welfare commissioners is 66 years old.

a shift away from the dichotomy of full-time workers and the unemployed to a more diverse model of employment status (see **Table 1**). Especially after WWII, the mainstream model in place in modern Japanese society was either being employed full-time (often for life, until retirement age) or not being employed at all (including homemakers)[9]. Perhaps such a homogeneous workforce was useful in the era of industrial development with the accompanying large population of young people. However, in the age of an aging and shrinking population and a post-industrial society, we propose that these active older people, among other informal supporters, be given suitable value and rewards within the regimes of social welfare and services, including connections with others, recognition, and financial remuneration even for their part-time contributions. Such an approach should not only help to encourage more people to participate in mutual support activities and to increase the well-being of the community, but also to create more economic and social values as a part of the "solution economy" or "care economy," or more service-oriented economies (Heinze and Naegele, 2012; Sgaragli and Giacomo Brodolini Foundation, 2014).

Perhaps it is useful to be aware of possible "negative" side effects, including the presence of older generations staying "active" potentially keeping the younger generations locked into a subordinate position in societies and cultures whose concept of authority is based on a seniority system. There is a need to formulate more flexible working patterns for older people. Still, it seems that there is a lot we can learn from our own premodern history that will help us develop possible new "welfare society" concepts that include active roles for older adults, such as the word "*Inkyo Shigoto,*" which means "a job after retirement" (Ogasawara, 2012).

Changing the image of older people from a mere "beneficiary" of social services to a more active and influential party can lead to changing societal values and norms and can be the basis of developing new SI initiatives and systems. Starting from the argument presented by this brief paper, both academics and practitioners should work together to gather more evidence and knowledge from the society, and to propose new policy systems. Then each society may need to consider what the most appropriate image and perception of older people (together with other groups) would best fit the future social innovation needed.

[9]Of course, there was a large number of self-employed businesses and farmers during this time.

AUTHOR CONTRIBUTIONS

KA conducted a research on social innovation theories and concepts, historical analysis, and a part of present day situation in local communities. NA added details and observations from the local communities. MK supervised the conceptual framework and added descriptions to clarify the framework.

REFERENCES

Aoo, K. (2017). Aging society in Japan: a process of social innovation and the roles of civil society. *Korean NPO Rev.* 16, 67–85.

Aoo, K. (2018). Development and challenges of social innovation theories: a comparative analysis of Japan, Europe, and North America. *J. Int. Adv. Japanese Stud.* 10, 103–119. doi: 10.15068/00151654

Bourdieu, P. (1990). *The Logic of Practice.* Cambridge: Polity.

Chow, N. (2004). Asian value and aged care. *Geriatr. Gerontol. Int.* 4, 21–25. doi: 10.1111/j.1447-0594.2004.00139.x

Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.

Heals, C., and Green, H. (2016). *Social Innovation in Health and Social Care: Case Study Results.* A deliverable of the project: Social innovation: Driving force of social change (SI-DRIVE).

Heinze, R. G., and Naegele, G. (2012). "Social innovations in ageing societies," in *Challenge Social Innovation: Potentials for Business, Social Entrepreneurship, Welfare and Civil Society,* eds H.-W. Franz, J. Hochgerner, and J. Howaldt (London: Springer), 153–167. doi: 10.1007/978-3-642-32879-4_10

Heiskala, R. (2007). "Social innovations: structural and power perspectives," *Social Innovations, Institutional Change and Economic Performance: Making Sense of Structural Adjustment Processes in Industrial Sectors, Regions, and Societies,* eds T. J. Hamalainen and R. Heiskala (Cheltenham: Edward Elgar), 52–79. doi: 10.4337/9781847206992.00009

Hotta, T. (2008). *Challenge! Pursuing the "Asunaro" Dream and Opening Up the Volunteer World.* Tokyo: Tokyo Shinbun Shuppan Kyoku.

Ikeda, Y. (1986). *The History of Social Welfare in Japan.* Tokyo: Houritsu Bunka Sha.

Kawai, H. (2017). *Where Our Mind and Story Goes.* Tokyo: Kawade Shobo Shinsha.

Klimczuk, A. (2015). *Economic Foundations for Creative Ageing Policy: Volume I Context and Consideration.* New York, NY: Palgrave Macmillan. doi: 10.1057/9781137465337

Miyamoto, T. (2014). "How to Support local community: the restructuring of livelihood security and integrated community-based care," *Integrated Community-Based Care and the Restructuring of Livelihood Security: Creating A New "Mutual support" System,* ed T. Miyamoto (Tokyo: Akashi Shoten), 15–44.

Mulgan, G. (2012). "The theoretical foundations of social innovation," *Social Innovation: Blurring Boundaries to Reconfigure Markets*, eds A. Nicholls and A. Murdock (Basingstoke: Palgrave Macmillan), 33–65.

Murray, R., Caulier-Grice, J., and Mulgan, G. (2010). *The Open Book of Social Wnovition.* Social Innovator Series, London: The Young Foundation and NESTA.

Najita, T. (2009). *Ordinary Economies in Japan: A Historical Perspective, 1750–1950.* Oakland: University of California Press.

Nicholls, A., Simon, J., and Gabriel, M. (2015). "Introduction: dimensions of social innovation," *New Frontiers in Social Innovation Research*, eds A. Nicholls, J. Simon and M. Gabriel (Basingstoke: Palgrave Macmillan), 1–26. doi: 10.1057/9781137506801_1

Ogasawara, Y. (2012). *Capitals Built by Emperor Shomu.* Tokyo: Yoshikawa Kobunkan.

Sgaragli, F., and Giacomo Brodolini Foundation (2014). "Preface - Change through social innovation ecosystems," *Enabling Social Innovation Ecosystems for Community-Led Territorial Development,* ed F. Sgaragli (Rome: Fondazione Giacomo Brodolini), 7–11.

Shinmura, T. (1991). *Social History of Aging and Caregiving.* Tokyo: Hosei University Publishing.

Takagi, T. (2006). "Self-help of retiree: from filioparental agreement," *Life Course in Tokugawa Japan: A Discussion With Historical Sociology*, ed E. Ochiai (Kyoto: Minerva Shobo), 231–251.

Tanaka, T. (2017). *History of Welfare Politics: Democracy Against Inequality*. Tokyo: Keiso Shobo.

Ueno, C. (2011). *Sociology of Care: Toward Welfare Society With Sovereignty of Concerned Party*. Tokyo: Ota Shupan.

Yamaoka, Y. (1993). "Development of Royal-Gifted Philanthropy," *Philanthropy and Society: Japanese Challenges*, eds Y. Hayashi and Y. Yamaoka (Tokyo: Diamond Publishing), 153–177.

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Change Ahead—Emerging Life-Course Transitions as Practical Accomplishments of Growing Old(er)

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With the aging of the "Baby Boomer" cohort, more and more adults are transiting from work into retirement. In public discourse, this development is framed as one of the major challenges of today's welfare societies. To develop social innovations that consider the everyday lives of older people requires a deeper theoretical understanding of the retiring process. In age studies, retiring has been approached from various theoretical perspectives, most prominently disengagement perspectives (retirement as the withdrawal from social roles and responsibilities) and rational choice perspectives (retiring as a rational decision based on incentives and penalties). Whereas, the former have been accused of promoting a deficient image of aging, the latter are criticized for concealing the socially stratified constraints older people experience. This paper proposes a practice-theoretical perspective on retiring, understanding it as a processual, practical accomplishment that involves various social practices, sites, and human, as well as non-human, actors. To exemplify this approach, I draw upon data from the project "Doing Retiring" that follows 30 older adults in Germany from 1 year before to 3 years after retirement. Results depict retiring as a complex process of change, assembled by social practices that are scattered across time, space, and carriers. Practice sequences and constellations differ significantly between older adults who retire expectedly and unexpectedly, for example through sudden job loss or illness. However, even among those who envisaged retiring "on their own terms," the agency to retire was distributed across the network of employers, retirement schemes, colleagues, laws, families, workplaces, bodies and health, and the future retiree themselves. Results identified a distinct set of sequentially organized practices that were temporally and spatially configured. Many study participants expressed an idea about a "right time to retire" embedded in the imagination of a chrononormative life-course, and they often experienced spatio-temporal withdrawal from the workplace (e.g., reduction of working hours) which entailed affective disengagement from work as well. In conclusion, a practice-theoretical perspective supports social innovations that target more than just the retiring individual.

Keywords: retirement, transition, practice theories, critical gerontology, chrononormativity

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INTRODUCTION

With the aging of the "Baby Boomer" cohort, more and more adults are—and will, in the next decade, be—transiting into retirement. In public discourse, this development is framed as one of the major challenges of today's welfare societies that call for social innovations. To develop innovations that not only address the economic and political level but also take into consideration the everyday lives of older people themselves, I argue, requires a deeper theoretical understanding of the retiring process than currently exists in retirement research.

As one of the major transitions in the institutionalized life-course (Kohli, 1985, 2007), the transition from work to retirement marks the beginning of the stage of later life. As such, it can be framed as a *rite de passage* (van Gennep, 1960) that can be divided into three broad phases: separation, liminality, and incorporation. In the first phase, people disengage from their current status and prepare for the upcoming separation. In regard to retirement, the separation phase encompasses the period in which older persons are not yet formally retired; hence, they are often still working and, when they retire on their own terms, preparing to leave their workplaces[1]. The subsequent liminal phase is a stage between statuses, i.e., between working and being retired. The incorporation stage, finally, completes the transition, providing a person with new roles, practices, and a new identity as a retiree. Applying this, admittedly rough, framework for analytic purposes, this paper focuses on the separation stage, namely the stage in which retirement preparations are taking place up to the time when people claim and receive their pension benefits[2].

In age studies, retiring has been approached from various theoretical perspectives, most prominently disengagement perspectives (retirement as the withdrawal from social roles and responsibilities; cf. Crawford, 1971) and rational choice perspectives (retiring as a rational decision based on incentives and penalties, cf. Wang and Shultz, 2010). Whereas, the former have been accused of promoting a deficient image of aging, the latter are criticized for concealing the socially stratified constraints in the contexts within which people are embedded. This paper proposes a practice-theoretical perspective on retiring, understanding it as a processual, practical accomplishment that involves various social practices, sites, and human, as well as non-human, actors (cf. Schatzki, 2002; Shove et al., 2012). It focuses on the separation stage (cf. van Gennep, 1960) of the transition, studying what happens between working and not working anymore. To exemplify this approach, I draw upon data from the project "Doing Retiring—The Social Practices of Transiting into Retirement and the Distribution of Transitional Risks" (2017–2021). Methodologically, the project follows 30 older adults in Germany from 1 year before to 3 years after retirement, combining episodic interviews, activity and photo diaries, and participant observations.

[1]There are not few exceptions to this depiction, which I will go into more detail in the course of this paper.

[2]See more on the retirement definition used in this paper and its problems in section Discussion.

The paper is structured into four parts: the first part portrays two major theoretical perspectives deployed in retirement research and introduces practice theories as an innovative perspective that can prove fruitful for retirement research. The second part introduces the German "Doing Retiring" project and the data analyzed in this paper. In the third part, results are presented, which are then discussed in the fourth part. Finally, the paper concludes with practical implications that can be drawn from a practice-theoretical analysis of the retiring process.

THEORETICAL PERSPECTIVES IN RETIREMENT RESEARCH

The field of retirement studies can be divided into those studies that address retirement as the dependent variable and those that address it as the independent variable for various outcomes like life satisfaction, health, or mortality. Studies of the former type dominate the field of research and will also be in the focus of this paper (Ekerdt, 2010). Reviewing retirement research published since 1986, Wang and Shultz (2010) identify four theoretical perspectives in the field: (1) retirement as a form of decision-making, (2) retirement as an adjustment process, (3) retirement as a career development stage, and (4) retirement as a part of human resource management (p. 175). Whereas, the latter two are more prominent in management studies, gerontology has traditionally been concerned with the former. Understanding retirement as a form of decision-making focuses research on the rationality of the retirement decision and its circumstances, whereas understanding retirement as an adjustment process calls for investigating its functional and longitudinal mechanisms. While the former approaches emphasize the beginning of the retirement process, marked by the decision to retire, the latter are more often deployed to explain how people adjust to changes that have already happened. Disengagement theories, as one specific form of adjustment theories, however, focus on the separation process in particular.

Disengagement Perspectives on Retiring

"Retirement scholarship addresses, directly or indirectly, withdrawal from work in later life on the part of individuals, groups, or populations" (Ekerdt, 2010, p. 70). Since the 1960s and 1970s, disengagement theories have been heavily influential in researching retirement processes. First formulated by Elaine Cumming and colleagues in the early 1960s (Cumming et al., 1960), theories within the disengagement paradigm (cf. Cumming, 1964; Henry, 1964; Crawford, 1971; Hochschild, 1975) assume that later life is characterized by an overall disengagement from all (or, in later revisions, some) social spheres. Society is gradually releasing a person from their social roles, and the individuals themselves give up these roles—they are disengaging from work when they (have to) retire, from their parenting role when their children move out, from sexuality and social networks and from the public sphere. Disengagement theories, thus, frame later life as a stage of transition from being a functional and productive member of a society to being societally dispensable. Disengagement is functional as it facilitates the

"retirement" of a person from society without leaving too much of a gap for either (Powell, 2001). These perspectives thus presume a double-sided withdrawal—the individual withdraws "voluntarily" from social roles, and society offers individuals the "permission" to withdraw (Hochschild, 1975). It has been used for studying retirement as one of the major realms from which older people are institutionally guided to withdraw.

> *"[…] withdrawal may be accompanied from the outset by an increased preoccupation with himself: certain institutions may make it easy for him."* (Cumming and Henry, 1979, p. 14)

It is not precarious to suggest that disengagement theories relied on and reinforced deficient images of aging, which also provoked criticism. One is that disengagement was originally framed as universal, inevitable, and irreversible. Looking at retirement, all of those assumptions may be questioned today. First, not everyone retires. There are—still predominantly women—who are not eligible for pension benefits, or whose pensions would be too small to afford to retire. On the other side of the social stratum, certain professionals (like artists, priests, or professors) do not retire because they deliberately seem to choose not to. Second, the emergence of various post-retirement transitions, including bridge employment and second/third careers, question whether re-entering the workforce is impossible (cf. Henkens et al., 2017).

In her 1971 study "Retirement and disengagement," Marion Crawford found that disengagement and retirement do not necessarily go hand in hand for all social groups. In her sample, one group equated retirement with loss of meaningful life space, however involuntarily and not double-sided. Other groups also viewed retirement as disengagement, but only from the working sphere, thus offering opportunities to re-engage or re-align in other spheres of life. However, her research focused on perceptions, and not practices, of retiring. Arlie Russell Hochschild (1975) later reformulated disengagement as a process that varies by (1) kind of disengagement (social or normative), (2) macro-societal factors (e.g., in pre or post-industrial societies), and (3) social position of the retiring individual (e.g., between men and women).

According to Crawford (1971), disengagement from work is viewed in a positive light when the decision is framed as voluntary and in a negative light when individuals feel forced into leaving work. To perceive retiring as involuntary is more likely to occur when people's retirement age deviates strongly from an age viewed as "normal" retirement age (van Solinge and Henkens, 2007). In a study on mainly working-class men, Goodwin and O'Connor found that "indeed the central tenet of disengagement theory, that disengagement from the labor market is a voluntary decision, had little currency amongst this group" (Goodwin and O'Connor, 2014, p. 584).

In the decades following the 1980s, disengagement theories became less and less widespread in retirement research and were increasingly replaced with theories that focused on exactly the choice and voluntariness aspect discussed above: rational choice theories.

Rational Choice Perspectives on Retiring

When conceptualizing retiring as an outcome of informed decision-making, researchers often resort to rational choice theories[3]. Rational choice perspectives on retirement have been taken on by psychologists (cf. Wang, 2013), economists (cf. Hatcher, 2003; Adams and Rau, 2011) and gerontologists (cf. Ekerdt et al., 2001). They assume that individuals have sufficient information regarding their situation, their work environment and the predictions they can make for future consequences; that they weigh these factors; and that they evaluate the overall utility of retirement before they decide whether to retire or not (Wang and Shultz, 2010).

From a rational choice perspective, decisions of any kind are composed of three parts: first, there is more than one possible alternative; second, the decision maker can form expectations concerning future outcomes of these decisions; and third, they can assess the consequences associated with the possible outcomes, and link them to their personal goals and values (Hastie and Dawes, 2010). Hence, decisions presume a (1) intentional, rational and relatively self-determined individual in (2) relatively unconstrained situations that offer at least two alternatives to choose from, and (3) life-worlds in which futures are stable and certain enough to be predicted—all of which is not necessarily the case (cf. Moffatt and Heaven, 2017).

From a purely economic rational choice perspective, working individuals will retire only when they feel that their financial resources and future economic forecast allow them to support their consumption needs in retirement (Hatcher, 2003). This rather simplistic perspective has been elaborated in retirement research, developing more processual than eventful perspectives and acknowledging the constraints people face in decision-making. Feldman and Beehr (2011), for example, model retirement decision-making as a psychological process that consists of several sequential and discrete decision-making stages. This process may start with informal planning and lead to more formal planning (Wang and Shultz, 2010). Wang and Shultz, however, acknowledge that "retirement decisions are often made in the face of incomplete and imperfect information, which renders a sense of uncertainty in the decision-making process" (p. 1986), which has not yet been integrated into rational choice frameworks on retiring.

However, the choices available to future retirees are always framed within different discourses and structures. Studies have elaborated, first, on the role of public policy and institutional arrangements in structuring possible retirement alternatives (cf. Fasang, 2010) and shaping norms for a "right" retirement age (cf. Jansen, 2018); second, on the role of organizational contexts (Phillipson et al., 2018); and third, on social inequalities. Inequalities have been widely observed in regard to gendered retirement transitions (cf. Moen et al., 2001) and social class (cf. Phillipson, 2004). Inequalities have grown more severe with the closure of many early retirement pathways in Germany, which have been an important exit route for lower-skilled workers who

[3]Other decision-based theories, like the theory of planned behavior (cf. Ajzen, 1991), will, for reasons of simplification, be subsumed under the rational choice paradigm here.

are now forced to work longer due to financial need (Hofäcker and Naumann, 2015).

Both continuing to work and transiting into retirement are often not perceived as voluntary. Based on European Social Survey (ESS) data, Steiber and Kohli (2017) found that, in the majority of the European countries they analyzed, 30 per cent and more of retirees retired involuntarily, meaning that they would have preferred to continue working but had to retire due to legal, employer-based or health reasons. Older adults who had precarious careers across their life-courses or experienced job losses and phases of unemployment were more likely to retire involuntarily, as well as women who worked in higher-status occupations and those who worked part-time.

However, beyond putting limits to the assumptions of rational choice perspective, some studies have found that many older workers do not engage in retirement planning and conscious decision-making at all (Ekerdt et al., 2001; Adams and Rau, 2011). With the recent and future changes in the work-retirement landscape, the explanatory power of rational choice approaches might diminish even further, as individuals may experience a loss in the agency on retiring. Vickerstaff and Cox, (2005, p. 92) call this development "individualization of retirement," resulting in an increased range of risks instead of increased retirement transition alternatives. Hence, researchers have called for a shift in attention to actual experiences of retirement transitions and planning and called for qualitative studies (Jex and Grosch, 2013). As Moffatt and Heaven (2017) argue, age studies can gain a much more realistic understanding of retirement planning through focusing on retiring practices which can be understood "no longer [as] discrete events but are diverse, disrupted and socially structured" (p. 894).

Practice-Theoretical Perspectives on Retiring

With increasing changes in the work-retirement landscape, research is confronted with the need for, and opportunity to, re-think theories on the transition from work to retirement (Phillipson, 2018). Departing from the criticism of functionalist disengagement theories and individualist rational choice theories, this paper proposes a critical practice-theoretical perspective on the retirement process. From such a perspective, retiring can be framed as a process that is assembled by social practices which unfold scattered across time, space, and carriers. This perspective contradicts both the notion that retiring is a universal process of disengagement and the notion that retiring is the outcome of individual, rational decision-making. Instead, it opens the researchers' perspective to see the multiple human and non-human actors that are part of the retirement process, how retiring is a practical accomplishment and the decision to retire is a situated practice within this process

Social practices can be described as "temporally and spatially dispersed nexus[es] of doings and sayings" (Schatzki, 1996, p. 89) "which consist of several elements interconnected to one other" (Reckwitz, 2002, p. 249), including bodily and mental activities, artifacts and things, knowledge, attitudes, and emotions (cf. Reckwitz, 2002; Shove et al., 2012, p. 289) defines social practices as (i) bundles of doings and sayings that are (ii) bound by a kind of practical know-how incorporated in human bodies and artifacts and (iii) intelligible and typologized. Whereas, the term "action" is strongly linked to an actor, practices highlight the embedded, decentralized qualities of doings. Social practices are thus doings without clearly demarcated actors—they are collective practices instead of individual practices (Shove et al., 2012). From a critical practice-theoretical perspective, consequently, everything that the social sciences might treat as an attribute of a person becomes a practical accomplishment—not something people are, but something they do (cf. "doing gender": West and Zimmerman, 1987; Butler, 2004; "doing age": Laz, 1998; Schröter, 2012).

As social practices stretch in time and space, they form bundles, complexes, and constellations. They are always woven into a nexus of other practices—the life-course, for example, can hence be viewed as one gigantic constellation of social practices, and life-course transitions as a temporally smaller segment within this constellation. Social phenomena, consequently, are slices or features of practice-arrangement nexuses (Schatzki, 2010, p. 139). This nexus of practices, as well as slices of it, are organized by practical knowledge, norms and teleoaffective structures, temporally unfolding and spatially dispersed (Schatzki, 1996, p. 89). One such organizational principle that is of particular importance for life-course transitions is chrononormativity. Chrononormativity refers to the "interlocking temporal schemes necessary for genealogies of descent and for the mundane workings of everyday life" (Freeman, 2010, p. xxii) that "may include (but are not exclusive to) ideas about the "right" time for particular life stages" (Riach et al., 2014, p. 1678), like retiring. Krekula et al. (2017) translate this life-course concept into an everyday life level, emphasizing the interconnections between temporality and normality that are being practiced though subtle everyday practices. In contrast to chrononormativity, they call this everyday making of temporal normality norma-/temporality.

A critical practice-theoretical perspective on life-course transitions consequently leads us to ask the following questions:

(i) How are transitions being done? What social practices do they involve?
(ii) How are these practices scattered across time, space, and carriers?
(iii) What are the underlying structures that organize the transition process?

Concluding, the critical potential of practice theories lies not only in its shift in focus (to social practices), but in its challenging of positivist, functionalist, and rational choice approaches. A practice-theoretical approach toward studying retirement understands retiring as a multi-agential process of social practices that is neither universal nor inevitable, neither intentional nor rational. From this perspective, there is neither a societal function of disengagement nor a rational, individual decision to retire that initiates this process. Instead, the flow of social practices that may—but not necessarily does—lead to retiring is variable and contingent; it is prone to change; and the decision to retire is just one out of many situated practices. **Table 1** summarizes the main differences

TABLE 1 | Comparison of disengagement theories, rational choice theories, and practice theories in regard to retiring.

	Disengagement theories	Rational choice theories	Practice theories
Definition of the phenomenon	Retirement as part of the double-sided withdrawal process of disengagement in later life	Retirement as the result of an individual, rational and intentional decision to retire	Retirement as the result of a multi-agential process of social practices
Research questions	When and how do older adults disengage from work and social roles?	Why do older adults choose to retire (early, late, not at all, etc.)?	How is retiring being done?
Research aim	Explain collective processes of social withdrawal in later life	Explain individual decisions and trajectories	Describe practical processes of change

between disengagement, rational choice, and practice-theoretical approaches.

THE "DOING RETIRING" PROJECT

Data analyzed in this paper stems from the project "Doing Retiring—The Social Practices of Transiting into Retirement and the Distribution of Transitional Risks" (2017–2021) in which the author is involved. The project is part of the DFG-funded (*Deutsche Forschungsgemeinschaft*) interdisciplinary research training group "Doing Transitions—The Formation of Transitions over the Life Course," located at Goethe University Frankfurt am Main and Eberhard Karls University Tübingen, Germany. It seeks to complement transition research by analyzing how transitions emerge, focusing on the interrelation between discourses on transitions, institutional regulation and pedagogical action, as well as individual processes of learning, education and coping[4].

Data and Methods

Methodologically, the project "Doing Retiring" deploys a mixed-methods research design, combining both qualitative and quantitative methods. It follows 30 older adults in a qualitative longitudinal study from before retiring to 3 years after that. In the course of this period, yearly episodic interviews are conducted and participants are asked to keep an activity and photo diary for 7 days per data collection wave (resp. per year). Qualitative data is complemented with secondary analysis from two quantitative datasets: the German Transitions and Old Age Potential (TOP) dataset and German Time Use Survey (GTUS) data. This paper will focus on results from the first wave of data collection of the qualitative panel study, hence focusing on the "separation stage" or period within the retiring process before persons receive old age pension benefits and are thus formally retired.

Sampling

The first wave of data collection took place from September 2017 to April 2018. Participants were recruited through an information brochure with the header "Are you retiring?" Selection criteria stated in the brochure comprised age—starting at age 55[5] without an upper age limit—and the precondition of planning to stop working within the upcoming 12 months or claiming old age pension benefits within the upcoming 12 months[6].

"Retiring" is, however, not quite easy to define, as there are multiple, potentially overlapping criteria that define the retirement status: cessation of work, reduced work effort, receipt of pension benefits, or self-definition (Szinovacz and DeViney, 1999). For the sampling of this study, retiring was defined as either the moment in time when people planned to stop working and not continue anymore, regardless of whether they were eligible for pension benefits yet, or the moment in time when people planned to receive their old-age pension benefits, regardless of whether they would continue to work (in marginal, part-time or full-time employment). The brochure also stated clearly that persons who are retiring out of non-employment, i.e., from unemployment or domestic work, were being sought. All participants would receive an incentive of € 50 for each wave of completing an interview and 7 days of activity and photo diaries.

The brochure was distributed across different channels, ranging from Goethe University (to recruit retiring professors) to different professional associations, including the association of waste collectors and the association of craftsmen in Hessen, the University of the Third Age in Frankfurt am Main, job agencies targeting older persons, NGOs supporting low-income persons, and among personal contacts.

Beyond the formal selection criteria, an equal gender balance, as well as heterogeneity in regard to marital status and childlessness, educational attainment, former occupations, and pathways to retirement (e.g., from unemployment, partial retirement) were considered. As this paper focuses on the first wave of data collection that took place before respondents were formally retired the interviewed persons did not yet receive an old age pension. However, more than one third of them were not working anymore due to becoming unexpectedly unemployed, being offered a "golden handshake" or being

[4]http://www.doingtransitions.org

[5]In the end, one person aged 53 years was also included in the study due to the specificities of his retiring process.

[6]This criterion was actually hard to meet, as it turned out that the point of time at which people felt they retired did not always match with the formal definition, and constellations between working and receiving pension benefits were quite diverse (see Results section below).

TABLE 2 | Sample description by socio-demographic variables.

Socio-demographic variables	Number of study participants
All	29
Years of birth	1948–1965
Gender	
Male	13
Female	16
Family background	
No partner	8
No children	9
Residential area	
<5,000 inhabitants	3
5,000–100,000 inhabitants	16
>100,000 inhabitants	13
Former occupation	Researchers, teachers, head of development, bank clerks, IT personnel, self-employed, administrative, social workers, shift foremen, mechanical engineers, journalists
Pathway to retirement	Partial retirement (7) Early retirement (5) Disability pension (4) From unemployment (4) From fulltime to retirement (2) Worked past retirement age (2)
Occupational status	Working fulltime (12) Working part-time/marginal employment (4) Passive stage of partial retirement (2) Not working, not yet retired (11)

on the pathway of partial retirement (see below). **Table 2** portrays the characteristics of the final sample of 29 useable interviews.

Pathways to Retirement in the German Pension System at a Glance

To understand the different pathways to retirement found among the sample, I will provide a brief overview about the German pension system and its legal retirement routes.

German retirement legislation has undergone partly paradoxical developments. In Germany, the public pension system covers the vast majority of the labor force, as enrollment is mandatory for private-sector employees. Most self-employed and civil servants are exempt. Benefits are defined according to a point system based on lifetime contributions. The major and long pension reform process that started in 1992 has radically changed the provisioning of public pensions, moving from a defined benefit scheme to a defined contribution scheme (Bonin, 2009). One of the final vital components of this process was the lifting of the statutory retirement age to 67 years until 2029, which, together with the closures of many early exit options, has increased involuntarily extended working lives (cf. Hofäcker and Naumann, 2015).

Different pathways to the public pension system exist, as portrayed in **Table 3** in the appendix (source: Seibold, 2017, p. 53). The earliest possible age to receive retirement benefits is 63. Whereas, some routes to retirement have been closed, others are being opened: On the one hand, the closure of early exit options comprises, for example, also partial retirement, which ran out in 2009; however, companies may still offer this option to their employees. In Germany, two kinds of partial retirement pathways existed—one in which persons would gradually decrease their working hours over the period of 6 years, and one in which persons would continue to work fulltime for 3 years and not work at all but receive 80% of their former income for the subsequent 3 years. On the other hand, the recently introduced "*Flexirentengesetz*" (flexible retirement law) has broadened the range of retirement options before and after statutory retirement age, again with the aim to create individualized retiring transitions (OECD, 2017b). This is predicted to increase pension inequality in the future (OECD, 2017a) as in Germany, no basic or minimum pensions exist. The pension gap between men and women (46%) is largest in Germany from all OECD countries and the poverty rate among 65+ year old women 11.5% compared to 6.8% among men.

Data Collection and Analysis

The first wave of data collection comprised a face-to-face interview and 7 days of activity and photo diaries that the participants kept after the interview and sent back by mail or e-mail. The face-to-face interviews were mostly narrative but based upon a guideline that provided rough orientation questions. The interviews would begin with an open narrative-biographical invitation to elaborate on their occupational histories, starting—as work trajectories were the focus of the interview—with their education (however, many people did refer to their childhood and parents, as well as to their private lives in the course of the interviews). After this narrative period, which would last for ∼45 min, participants were asked more specifically about retiring—including questions on how and when they first thought about retiring, what they think will change when they retire, what they plan to do in their retirement, which retiring processes they observe among their peers and what they would advise others who think about retiring to do and consider, as well as what a typical week in their lives looked like.

Interviews lasted between 60 and 180 min, with 90 min being the average duration. Participants would choose the interview location, resulting in altogether 20 interviews that were conducted at the university, 6 at the participants' homes and 2 that were conducted at the participants' workplaces.

This paper draws on the fully coded interview material of the first data collection wave, hence comprising persons in their pre-retirement stage. Data were coded using data analysis software MAXQDA 12. Data analysis was conducted based upon the documentary method for one-on-one interviews (Nohl, 2017) that was developed to interpret interviews on a practice-theoretical foundation, reflecting routine, and implicit knowledge involved in everyday practices (Bohnsack, 2014). The method involves two steps of data interpretation: first, the formulating interpretation aims at establishing what the

TABLE 3 | Pathways to Retirement in Germany.

Pathway	Required contributions	Other requirements	NRA	ERA
			After 1990s reforms	
Regular	5 years	-	65	65
Long-term insured	35 years	-	65	63
Women	15 years 10 years full	Female	65	60
Unemployed/part-time	15 years 8 years full	Unemployed or in old-age part-time work before retirement	65	60
Disabled	35 years	Disability	63	60
Low earnings potential	5 years 3 years full	Stricter disability	-	-

Source: Seibold, 2017: 53. Normal Retirement Age (NRA) and Early Retirement Age (ERA).

interview text is about; second, the reflecting interpretation is concerned with how something is developed and presented (*modus operandi*). The analyses presented in this paper are mainly based upon the first step of data interpretation.

RESULTS

The results portrayed in the following are divided into two sections according to the above-listed questions that a practice-theoretical perspective guides us to ask. They address the question of how retiring is being done and which social practices it involves for which groups of persons. The results section will address the questions

(i) How is retiring being done? What social practices does it involve?
(ii) How are these practices scattered across time, space, and carriers?
(iii) What are the underlying structures that organize the retirement transition process?

Targeting the first of these questions, my interview partners experienced a distinct set of sequentially organized practices that marked the beginning of their retiring process: taking stock, finding a successor, cleaning out their workplaces, organizing farewell celebrations and planning for retirement (**Figure 1**).

These practices and their spread across time, space, and carriers shall be discussed in detail in the following sections.

Re-mapping Everyday Lives: Changing Time-Spaces in the Retirement Process

Retiring is a transition that implies changes in the temporal and spatial structuration of everyday lives, away from workplaces and working hours. Despite retiring via different pathways, many participants stated to have reduced working hours before retiring. This reduction took place for different reasons both on the side of the employer and the employee, ranging from care-dependent relatives to illnesses and rehabilitation, to forms of partial retirement pathways in which a continuous reduction of working time was part of the regulation. Marie-Kristine, a social education worker, took 1 day a week off when her youngest son went through a difficult time in adolescence. She said that reducing her working hours by just 1 day "made a huge difference. I developed a more distanced perspective on work." Monica, a legal expert, was diagnosed with cancer and had to stop working while she was doing chemotherapy. She told how she returned to work after rehabilitation, saying "But by that time I had taken a step back from work, realizing that leisure is, of course, an important asset" (Monica, *1959).

Besides reducing working hours, some participants reduced the time they would be physically present at their firms by working increasingly from their homes, which lead to a certain affective disengagement from work as well. Some participants who went on partial retirement described working "on call" from their homes. Petra, an accounting clerk in her active period of partial retirement, said: "I had talked to the director, he said, I said, 'how many people have you called at in the past?'; he said, 'Not a single one (laughs)" (Petra, *1955).

On the contrary, participants talked about former colleagues who would show up at the workplace all too often after they had been retired, who would still use the canteen or hang around the company building. This was often frowned upon and labeled as "not healthy." Hence, the retiring sequence also implied a clear spatial sequencing: one could legitimately be less present at the workplace *before* retiring, but one would definitely have to stop being present at the workplace *after* retiring, implying a normative temporal-spatial structure of retiring practices.

Reducing working hours or doing home office would often lead to affective disengagement from work without participants having anticipated this effect. Other practices, however, were deliberately planned to mark the disengagement from work and the boundary between work and retirement. Those practices would often also imply a change in space: Many participants would materially mark the end of working life by planning to refurbish their homes or even move. Others planned to go on a longer vacation right after they would retire, often leading them to far-away places like Australia or New Zealand, if they could

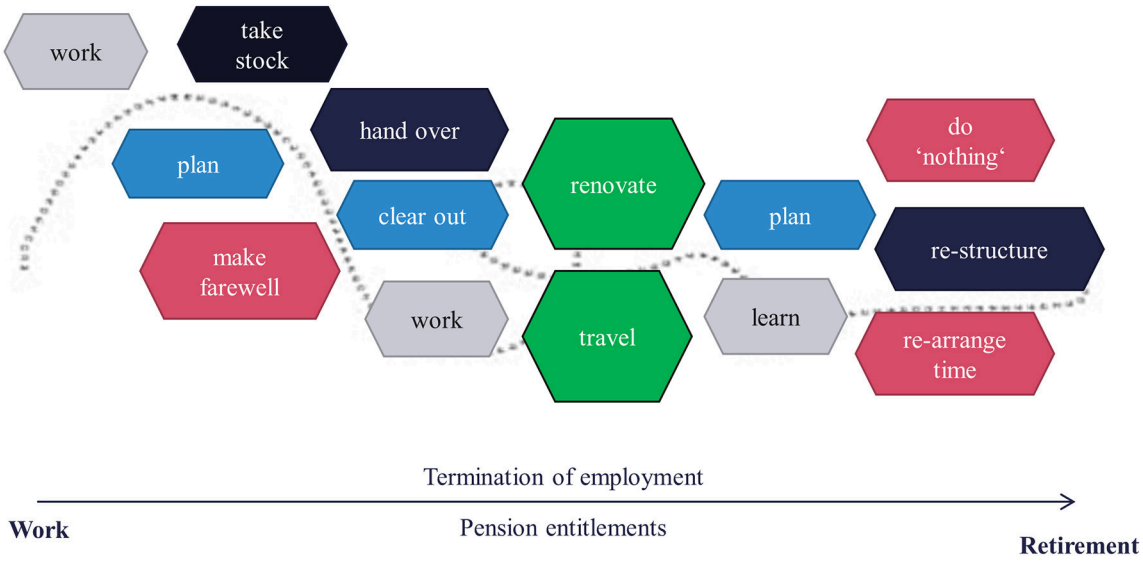

FIGURE 1 | Social practices of retiring; typical sequences for older adults retiring expectedly.

afford to go. Tess, working in a tourism agency, told me about her retirement journey plans:

> *"When I will have stopped working, 8th of December will be my last day of work (.), and on the 16th of December I will fly to Lanzarote and be there for 7 ½ weeks (laughs) [. . .] to a small finca in a nature reserve [. . .] I will completely seclude myself!"* (Tess, *1956)

Those traveling plans were framed as celebrations of future retirement and are thus transformative practices. They would often be observed with one's partner, children, or friends, so that we can understand retiring practices as not only temporally and spatially dispersed, but also involve more than the retiring individual.

Retiring as Collective Accomplishment

Many of those practices suggest that retiring is not only a practical accomplishment, but a collective practical accomplishment that involved a variety of persons—from family members to colleagues, friends and successors. Tom, a design engineer, describes the thoughts that went through his head when he started thinking about retiring as follows:

> *"When are the children moving out, when can you do what you want to do, how old is your wife, what's next, what do you want to do with your life? Do you want to start new things at some point? And if you can afford to quit working, I mean, that was the easiest of all, to calculate that."* (Tom, *1958)

Among the study participants, it was particularly the men who expressed worries about how their wives would react when they retired, often packing those thoughts into jokes—like Harald (*1955), who talked about his wife retiring prior to him: "(laughs) She said (.): You keep working, I want a rest from you!" Others were talking more seriously about it, as Jessica, a bank clerk, asked herself: "What does it mean when both (.) who have been working the whole day and then suddenly one gets an offer to stop working early, what does it do to the other person?" Herbert, however, told how his wife pressured him to finally retire, and argued with him based on others in his circle of acquaintances, saying: "Well, my wife kept arguing: HE is already at home, HE only had to work until 4 p.m. each day anyway, YOU always work until 7 [. . .] Why don't you finally retire, too?" (Herbert, *1954).

Whereas, partners were more often framed as factors involved in retiring earlier, children were usually referred to as a reason to continue working—often because they had not finished school yet, were studying and needed financial support. Others also mentioned that they would not want their children to worry about them, once they would not "do anything anymore." Anna, a school teacher working past statutory retirement age, had lost her husband to cancer and explained:

> *"For a long time I was still thinking, I wanted to prove to my children, now that my husband isn't there anymore, that I could continue to work. That life consists (laughs) of work and not of lingering around. That was important to me. [. . .] that they saw, our mother, she still has a purpose. She's still going to school."* (Anna, *1949)

Beyond family, the companies—supervisors and colleagues—played central roles in the practices of retiring. When he signed up for a partial retirement scheme, Tom was invited to a retirement counseling seminar organized by his company. In this seminar, 20 people from all across different departments that planned to retire came together to discuss their situations, plans, and fears.

> *"It makes you see, I am not alone in this situation, which I knew I wasn't, but it gets a different meaning when you experience it live. Well, they are all from the same company, but from completely*

different corners of course, right? You see, the people are completely different but we all share the same situation. We're going toward a transition to a different, new stage of life, yes…" (Tom, *1958)

Another core practice that constituted the retiring process was finding and establishing a successor. This was a task many persons described as a year-long process that had started long before other retiring practices. Sometimes, successors were found and built up, and then left the company again before the study participant was retired, starting the successorship process all over again. Sometimes participants chose and tried to establish a successor, but failed, because a new supervisor would establish a different person, or the study participants would learn that their position would not be filled after their retirement. This was a painful experience for those who went through it. If establishing a preferred successorship worked out, however, it turned out to be a huge motivational factor for employees at the end of their working lives. Roland, born 1953 and owning a small sales shop, had already "emotionally retired," he said, when his son suddenly decided to take over the family business.

"Well, as I was 56, 57 (.) before my son entered the business […] I was thinking, well, you can get the next couple of years over with somehow. (.) Well, a little demotivated I would say […] And when he [note: his son] entered and, say, seriously wanted to take over the business, that breathed new life into me and motivated me a little more, to, um, actively go about certain things." (Roland, *1953)

Farewell practices were another set of important collective practices in the retiring process. Dana, a middle school teacher, was currently planning her farewell party together with several colleagues who would retire the same year when I interviewed her. She referred to it as "Kick-Off" and said: "Yes, sure, we'll celebrate. We'll have a well-planned finish" (Dana, *1954). For others, if they worked in bigger enterprises, the firm would organize a relatively standardized farewell, often including a wine reception at an event room in the company building. Ulrich, who works at a big software firm, referred to it as "the usual" (Ulrich, *1955). Tina, who works at a marketing firm, described her farewell in a similar way that many others at bigger companies did:

"I didn't want one [a farewell celebration], not at all. But I have a supervisor, (.) yes (.), who is significantly younger than me. She wanted it by all means. She says, no, we have to do that. And then (.) they arrange a, such a reception, at noon, at twelve (.), they serve snacks and there are speeches and no alcohol, that's not allowed […] and the managers come and hand you cards and flowers. The colleagues collect money for a present (laughs). […] I have been through this when others retired, that's how I know, yes. I did bid farewell to colleagues and I held farewell speeches, yes." (Tina, *1955)

However, not all participants were able to process through those stages. Particularly those who were dismissed at short notice or who suddenly stopped working for other reasons did not engage in the above-mentioned practices. They often suffered from not being given the chance to have a farewell ritual with their colleagues or prepare for the end of their working lives in other ways. This implies that there is a chrononormative sequencing of retiring practices that makes retiring "normally" a highly exclusive accomplishment.

The "Right Time to Retire" in the Chronormative Life Course

How do practice sequences "hang together" in the retiring process? Parts of the links and underlying structurations of retiring can be revealed by reconstructing practices and events that felt significant to future retirees in the separation stage. When asked about how and when they first started thinking about retiring, participants answered by reference to (a) chronological age, (b) life-course time or (b) lifetime left until death. Some participants could tell an exact chronological age by which they wanted to retire, or a number of years they would still have to work to afford retirement—even though those plans did not always work out. Harald, working in data processing, described how he had made a plan with his wife for when both of them would retire:

[…] our, my goal had always been to retire with 55, then she'd be (.) just over 60, so she's five (.) six years older (deep breath). That has always been my goal. Well, she finally did it with 62 (deep breath), and I was still working at 55." (Harald, *1955)

Others claimed they had been thinking about retiring for all their working lives. Ulrich, a software engineer, said:

"I have been thinking about it [retiring] all my life (laughs). I used to have such, such, such a joke […] I told my colleagues: I will work ten, fifteen more years, and then I'll stop. (.) Well, that turned out to be illusionary, but […] in so far it didn't happen overnight…" (Ulrich, *1955)

Instead of referring to chronologically timed and expected "events" like reaching a certain age, some study participants linked their retiring thoughts to specific practices, events and situations that they framed as "happening" to them. Even though not all of these events were related to time, a surprisingly common story among the participants went like this: originally, they had not considered retiring (early), but then a person in their circle of friends and acquaintances died at a rather young age, and thus did not have time to realize all the plans they had had for retirement. This, then, got the participants thinking about how much time they had left in their lives, and if they wanted to spend that time working or self-determined. Dana talked about deaths and illnesses she had observed among her social contacts like this:

"[…] I've had diverse (.) experiences in my social environment. An (…) acquaintance, she's not a friend, but a good acquaintance, (..) that also went until the end [note: until statutory retirement age]. And she was retired for three months, (.) and developed (.) cancer. (.) And half a year later, in March, (.) we (.) buried her. Yes, this does something inside you, to get you thinking: Gosh, who can ensure me that I will live to be 90 years old, like my mother? It can happen to me as well; an extremely healthy woman, organic lifestyle, everything, yes. (.) And, um (.), yes, there is (.) another

colleague, a similar thing happened to him. He was retired for two, three years and developed a chronic illness. (.) A year later (.) he was gone. (.) And that got me thinking: okay, you can feel well now at work, (.) but (..) what happens when an illness takes you by surprise and then you cannot enjoy your retirement the way I envision it?" (Dana, *1954)

Life-course time, time left, and chronological age, hence, were referred to in the retiring process, constructing chrononormativity through a "right time to retire." This "rightness" was defined by chronologically locating oneself in an imagined linear life-course, hence assessing the time "behind' and "in front of" this location. However, some participants deviated from this chrononormativity of the life course and could, consequently, not participate in the chrononormative sequential structuration of retiring.

Deviating From Chrononormativity—A Closer Look

Many of the study participants could not plan for the end of their working lives, as they were dismissed at short notice or were suddenly diagnosed with a severe illness.

For example, Robert, born in 1953, was a former shift foreman who lost his job in his 50s because he had been attacked by a drunken colleague and complained to his supervisor about it, who, in turn, dismissed him. At first, Robert was confident he would find another job because he had managed with different petty employment positions throughout his entire life. He said he tried hard and would have taken any job he could get, but finally, he went on welfare and received *Hartz IV*[7]. In 2007, he started to take psychotherapy to cope with feeling "dehumanized and degraded." At one point, he says, he could not stand it any longer and "faked" a burn-out to become eligible for disability pension.

"[. . .] and at this time I just simply got this (.) so-called burn-out (.), more or less willingly or also partly, uhm (.) constructed (. . .). This was accompanied by an external examination that was commissioned by the unemployment agency at that time (.) meaning that I was (.) examined (.) even though today I wouldn't be able to remember his name (.) of the man who did that (.) but to whom I played convincingly that he was positive that I am not able (.) to work more than three hours a day (. . .) and that was the trigger that made the unemployment agency say you have two possibilities: either you apply for a disability pension or we do it for you [. . .]" (Robert, *1953)

Hence, Robert was caught in a status in-between not working anymore and not yet being retired. This "liminal phase" felt unbearable to him and had him initiate an event that would transit him into retirement and out of liminality. In "faking" a burn-out to claim disability pension benefits, he tinkered with chrononormativity and "fast-forwarded" to his retirement.

[7]Hartz IV is the common term for a form of unemployment benefit in Germany paid after the first 12–18 months of unemployment, which has been heavily criticized for providing only for the lowest level of living conditions.

Whereas, the stage of being "in-between" felt unbearably long for Robert, it was surprisingly short for others, often in more privileged positions than Robert. Many of them were aghast when they received a letter or phone call offering them an early retirement scheme. Herbert, born in 1954 and CEO of a big company, was offered a "golden handshake" by his company when he turned 60, and felt this offer was not to be declined.

"And, ugh, so, well, ugh, when I turned 60, there was a restructuring at [company name] (.) where the put the next generation, in their forties, in power. (.) And, uhm, in this context they offered the possibility, uhm, of accepting, uhm, early exit arrangements. . . " (Herbert, *1954)

Jessica, the bank clerk, describes how her company was going through a restructuring process, pushing digitalization, and decreasing personal customer contact. In this process, all birth cohorts between 1956 and 1958 were offered partial retirement. They had received a letter from human resources, inviting them to an information evening for which the company invited counselors from the German pension insurance and prepared the partial retirement contracts that employees should sign right away. Even though this process seemed rather forced than voluntary, Jessica explained that she had had thoughts about retiring before, and that these thoughts were being "stimulated" by invitation. Others who had made similar experiences would do the same, framing the offer as a "trigger" or "eye opener" to embrace the option of early retirement.

But deviating from chrononormativity did not necessarily cause surprise or suffering among the study participants. Charlotte, born in 1957, was a trained biochemist who monitored clinical trials for pharmaceuticals as a freelancer. She grew increasingly frustrated with her work, and, with different legislative reforms, it got harder and harder for her to receive direct assignments as a freelancer, as many companies turned to temporary employment agencies instead. Asked about when and how it came that she retired, Charlotte replied:

"Um, I mean, I hadn't thought about it really. I would just have continued working. My plan was to definitely continue until I reached my 60s. (.)And, um, I simply didn't receive any direct assignments anymore and then I, I don't know, I started beekeeping (laughs) (..) And, um, that felt so good, because I was somehow totally relaxed and, um, became a completely different person, well (. . .)And (. . .) yes, I did continue to search for work in the beginning. [. . .] And then I counted the dough and realized it's enough. And I thought, so, you take this as a present for yourself now." (Charlotte, *1957)

Just like Robert, Charlotte became unemployed without realizing this might mark the beginning of her retirement. In the stage in-between working and being retired, she started other activities that made her feel better than her work did. At some point in this process it became apparent to her that she would not continue to work anymore. When the interview was conducted, she did not yet receive pension benefits, but she had subjectively come to terms with the status of being retired, and experienced this subjective change of status as a gift.

So even though there might be a shared notion of a "right time to retire" in the chronormative life course, deviations from this chronormativity were rather widespread. How these perceptions were assessed and expressed, however, and how the liminal stage of being between working and retired was experienced, differed greatly. Often it was even hard to tell when the separation phase of retiring had actually started, making retiring a process with blurring boundaries.

DISCUSSION AND PRACTICAL IMPLICATIONS

With increasing changes in the work-retirement landscape, research is confronted with the need for, and opportunity to, re-think theories on the transition from work to retirement (Phillipson, 2018). This paper does so by proposing a practice-theoretical perspective on the retiring process. Such a perspective, I argued, critically challenges core assumptions of both disengagement and rational choice theories. It understands disengagement from work as a practical accomplishment and choice as a situated practice in that process. Approaching the retirement transition from a practice-theoretical perspective implies (a) viewing it as a process of change that is (b) assembled by social practices that are (c) scattered across time, space, and carriers. Results from the "Doing Retiring" project exemplify these practices and their temporal, spatial and social distribution.

This paper has focused on the beginning resp. separation stage of the retiring process (cf. van Gennep, 1960), asking which social practices constitute the retiring process, how they are scattered across time, space, and carriers, and how they are organized. Now what does a practice-theoretical approach toward this topic makes us see that other approaches, like disengagement and rational choice perspectives, don't? At this moment, results can only provide a basis to formulate sensitizing concepts that suggest directions along which to look, and which may further be tested, improved, and refined (cf. Blumer, 1954). First, practice theories sensitize us for the fact that retiring is a process that is much more complex than is often depicted in existing theories. It involves a whole re-structuration of everyday lives.

Second and accordingly, the beginning of retiring can be traced to practices of temporal and spatial withdrawal, like reducing working hours or working in home office. Such practices that involve temporal and spatial changes are often transformative. This means that they contribute to a shift in personal identification from being part of the workforce to being a retiree. They may do so through affective disengagement or marking a boundary between working and retiring, as is the case with traveling and refurbishing. A transformative practice within a transitional sequence of practices, hence, is a practice with a specific "teleoaffective structure" (Schatzki, 1996). According to Schatzki, such teleoaffective structures comprise the aims (*telos*) a practice unfolds toward and the affects it activates to reach this aim. This is not to be confused with intentionality of a person, but is inherent part of a social practice. The teleoaffective structure of transformative practices in transition processes consequently aims to transfer its participants from the separation stage to the liminal stage and, finally, the incorporation stage of a transition. In the case of the retirement transition, reduction in working hours can have this transformative function when it leads to affective disengagement and subjective estrangement from work, and so can a longer vacation, which might itself mark the beginning of liminality.

Third, retiring is a collective accomplishment, involving many more actors than the retiring individual. Retiring as a collective practical process engages family members and employers, colleagues and friends, and collective practices like farewell celebrations or finding and establishing a successor. Retiring can, hence, be understood as a multi-agential, practical process, and the agency to retire is always distributed across this network (Latour, 2005) that makes up retiring: workplaces, companies, colleagues, partners, children, finances, homes, hobbies, friends and acquaintances, imaginaries and discourses on retiring, health and illness, pension insurances, employment agencies, etc. Once initiated, the practical process of retiring unfolds among this network.

Fourth, retiring practices are molded by a specific spatio-temporal ordering—they are situated in time and space and signify "normality" and deviance through their right or wrong placing and sequencing. Just as there are normalized and legitimized retiring ages, there are normalized and legitimized spaces in which working and retired persons are allowed to dwell (e.g., the workplace being a space exclusive to the present workforce). As Riach et al. (2014) suggest, it is, however, particularly fruitful for research to focus on those who "violate" chrononormative life course expectations, like Charlotte and Robert. Their stories reveal ways in which chrononormativity might be "undone," offering the potential for resistance. However, they also clearly depict how being denied a farewell from working life that was perceived and framed to be double-sided and "normally" located in time and space can lead to the "undoing" of participants' identities themselves, by being marginalized, excluded and rejected (cf. Butler, 2004).

Exploring deviations from chronormativity from a practice-theoretical perspective can also help to re-conceptualize voluntariness and choice in the retiring process. It involves, I argue, several shifts in perspective: First, retiring is neither a binary variable of "voluntary" nor of "involuntary," as it is often treated in quantitative research (cf. Dorn and Sousa-Poza, 2010), but in/voluntariness represents a continuum. This continuum becomes visible when we compare transition processes of different individuals, like that of Robert and Charlotte, who were not able to find work anymore despite wanting to, with that of Jessica, who was offered early retirement by her company, or that of Anna, who continued working to be a good role model for her two children. However, we can also find aspects of in/voluntariness in the transition process of one individual person. Jessica, for example, framed the (involuntary) offer of an early retirement scheme by her company as a trigger that initiated her wish to retire in the first place. Consequently, what is being described in retrospect as "voluntary" or "involuntary" is labeled as such in the narrative practices of—in this case—an interview. These narrative practices, in turn, construct

life-courses in retrospect and older-age identities for the future retirement stage. Herbert, whose wife wanted him to retire, poses another example for the mixture of in/voluntary practices within one and the same retirement experience. Understanding retiring as a collective accomplishment, the decision to retire must consequently be seen as shared among various actors.

From this follow clear, practical implications that aim to prevent retirement (identity) scarring (Hetschko et al., 2014) of older workers. These implications target both employers and non-profit organizations and call for a process-oriented transition management that starts at the separation stage. Such a kind of transition management may include the following aspects: First, possibilities for fading out of work (e.g., reducing hours, working from home) should be diversified and made more easily accessible to a wider range of employees, as these seem to smooth over the transition process. Second, successorship processes should be facilitated by supervisors and working teams; and the retiring person should be actively involved in these processes. Third, understanding retirement as multi-agential calls for the establishment of communities of practice through, for example, retirement counseling groups across one or more companies (cf. Lave and Wenger, 1991). Finally, farewell celebrations should be supported as transitional rituals (cf. Prescher and Walther, 2018).

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of name of guidelines, name of committee with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Ethics Committee of the University of Frankfurt, Department for Educational Sciences.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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REFERENCES

Adams, G. A., and Rau, B. L. (2011). Putting off tomorrow to do what you want today: planning for retirement. *Am. Psychol.* 66, 180–192. doi: 10.1037/a0022131

Ajzen, I. (1991). The theory of planned behavior. *Organ. Behav. Hum. Decision Proc.* 50, 179–211. doi: 10.1016/0749-5978(91)90020-T

Blumer, H. (1954). What is wrong with social theory? *Am. Soc. Rev.* 18, 3–10. doi: 10.2307/2088165

Bohnsack, R. (2014). "Documentary method and group discussions," in *Qualitative Analysis and Documentary Method in International Educational Research*, eds R. Bohnsack, N. Pfaff, and W. Weller (Opladen: Budrich), 99–124.

Bonin, H. (2009). *15 Years of Pension Reform in Germany: Old Successes and New Threats. IZA Policy Papers 11, Institute for the Study of Labor (IZA)*. Available online at: http://ftp.iza.org/pp11.pdf (Accessed August 08, 2018).

Butler, J. (2004). *Undoing Gender*. New York, NY; London: Routledge.

Crawford, M. P. (1971). Retirement and disengagement. *Hum. Relat.* 24, 255–278. doi: 10.1177/001872677102400305

Cumming, E., Dean, L. R., Newell, D. S., and McCaffrey, I. (1960). Disengagement-A tentative theory of aging. *Sociometry* 23, 23–35. doi: 10.2307/2786135

Cumming, E., and Henry, W. E. (1979). *Growing Old. Aging and Old Age*. New York, NY: Arno Press.

Cumming, M. E. (1964). "New thoughts on the theory of disengagement," in *New Thoughts on Old Age*, ed R. Kastenbaum (Heidelberg: Springer), 3–18. doi: 10.1007/978-3-662-38534-0_1

Dorn, D., and Sousa-Poza, A. (2010). "Voluntary" and "involuntary" early retirement: an international analysis. *Appl. Econ.* 42, 427–438. doi: 10.1080/00036840701663277

Ekerdt, D. J. (2010). Frontiers of research on work and retirement. *J. Gerontol. Series B* 65B, 69–80. doi: 10.1093/geronb/gbp109

Ekerdt, D. J., Hackney, J., Kosloski, K., and DeViney, S. (2001). Eddies in the Stream. *J. Gerontol. Ser B* 56, S162–S170. doi: 10.1093/geronb/56.3.S162

Fasang, A. E. (2010). Retirement: institutional pathways and individual trajectories in Britain and Germany. *Soc. Res. Online* 15, 1–16. doi: 10.5153/sro.2110

Feldman, D. C., and Beehr, T. A. (2011). A three-phase model of retirement decision making. *Am. Psychol.* 66, 193–203. doi: 10.1037/a0022153

Freeman, E. (2010). *Time Binds: Queer Temporalities, Queer Histories*. Perverse Modernities. Durham, NC: Duke University Press. doi: 10.1215/9780822393184

Goodwin, J., and O'Connor, H. (2014). Notions of fantasy and reality in the adjustment to retirement. *Ageing Soc.* 34, 569–589. doi: 10.1017/S0144686X12001122

Hastie, R., and Dawes, R. M. (2010). *Rational Choice in an Uncertain World: The Psychology of Judgment and Decision Making, 2nd Edn*. Los Angeles, CA: SAGE.

Hatcher, C. B. (2003). "The economics of the retirement decision," in *Retirement: Reasons, Processes, and Results,* eds G. A. Adams and T. A. Beehr (New York, NY: Springer), 136–158.

Henkens, K., van Dalen, H. P., Ekerdt, D. J., Hershey, D. A., Hyde, M., Radl, J., et al. (2017). What we need to know about retirement: pressing issues for the coming decade. *Gerontologist* 58, 805–812. doi: 10.1093/geront/gnx095

Henry, W. E. (1964). "The theory of intrinsic disengagement," in *Age with a Future*, ed P. F. Hansen (Philadelphia, PA: Davis), 415–418.

Hetschko, C., Knabe, A., and Schöb, R. (2014). Changing identity: retiring from unemployment. *Econ. J.* 124, 149–166. doi: 10.1111/ecoj.12046

Hochschild, A. R. (1975). Disengagement theory: a critique and proposal. *Am. Soc. Rev.* 40, 553–569. doi: 10.2307/2094195

Hofäcker, D., and Naumann, E. (2015). The emerging trend of work beyond retirement age in germany: increasing social inequality? *Z. Gerontol. Geriatr.* 48, 473–479. doi: 10.1007/s00391-014-0669-y

Jansen, A. (2018). Work-retirement cultures: a further piece of the puzzle to explain differences in the labour market participation of older people in Europe? *Ageing Soc.* 38, 1527–1555. doi: 10.1017/S0144686X17000125

Jex, S. M., and Grosch, J. (2013). "Retirement decision making," in *The Oxford Handbook of Retirement*, ed M. Wang (Oxford: Oxford University Press), 267–279

Kohli, M. (1985). Die Institutionalisierung des Lebenslaufs. Historische Befunde und theoretische Argumente. *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 37, 1–29.

Kohli, M. (2007). The institutionalization of the life course: looking back to look ahead. *Res. Hum. Dev.* 4, 253–271. doi: 10.1080/15427600701663122

Krekula, C., Arvidson, M., Heikkinen, S., Henriksson, A., and Olsson, E. (2017). On gray dancing: constructions of age-normality through choreography and temporal codes. *J. Aging Stud.* 42, 38–45. doi: 10.1016/j.jaging.2017.07.001

Latour, B. (2005). *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Lave, J., and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511815355

Laz, C. (1998). Act your age. *Soc. Forum* 13, 85–113. doi: 10.1023/A:1022160015408

Moen, P., Kim, J. E., and Hofmeister, H. (2001). Couples' work/retirement transitions, gender, and marital quality. *Soc. Psychol. Q.* 64, 55–71. doi: 10.2307/3090150

Moffatt, S., and Heaven, B. (2017). "Planning for uncertainty": narratives on retirement transition experiences. *Ageing Soc.* 37, 879–898. doi: 10.1017/S0144686X15001476

Nohl, A. (2017). *Interview und Dokumentarische Methode. Anleitungen für die Forschungspraxis.* Wiesbaden: Springer VS. doi: 10.1007/978-3-658-16080-7

OECD (2017a). *Preventing Ageing Unequally*. OECD Publishing. Available online at: http://www.oecd-ilibrary.org/employment/preventing-ageing-unequally_9789264279087-en

OECD (2017b). *Pensions at a Glance 2017: OECD and G20 Indicators. OECD Pensions at a Glance*. OECD. Available online at: https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017_pension_glance-2017-en

Phillipson, C. (2004). Work and retirement transitions: changing sociological and social policy contexts. *Soc. Policy Soc.* 3, 155–162. doi: 10.1017/S1474746403001611

Phillipson, C. (2018). "Fuller" or "extended" working lives? critical perspectives on changing transitions from work to retirement. *Ageing Soc.* 1–22. doi: 10.1017/S0144686X18000016

Phillipson, C., Shepherd, S., Robinson, M., and Vickerstaff, S. (2018). Uncertain futures: organisational influences on the transition from work to retirement. *Soc. Policy Soc.* 1–16. doi: 10.1017/S1474746418000180

Powell, J. (2001). Theorising social gerontology: the case of social philosophies of age. *Internet J. Inter Med.* 2, 1–10.

Prescher, J., and Walther, A. (2018). Jugendweihefeiem im Peerkontext. Ethnografische Erkundungen zur Gestaltung eines Übergangsrituals am Beispiel des Rundgangs am Jugendabend. *Diskurs Kindheits- und Jugendforschung* 3, 307–320. doi: 10.3224/diskurs.v13i3.04

Reckwitz, A. (2002). Toward a theory of social practices: a development in culturalist theorizing. *Eur. J. Soc. Theor.* 5, 243–263. doi: 10.1177/13684310222225432

Riach, K., Rumens, N., and Tyler, M. (2014). Un/doing chrononormativity: negotiating ageing, gender and sexuality in organizational life. *Organ. Stud.* 35, 1677–1698. doi: 10.1177/0170840614550731

Schatzki, T. (1996). *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. New York, NY: Cambridge University Press. doi: 10.1017/CBO9780511527470

Schatzki, T. (2002). *The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change*. University Park, PA: Pennsylvania State Univ. Press.

Schatzki, T. (2010). Materiality and social life. *Nat. Cult.* 5, 123–149. doi: 10.3167/nc.2010.050202

Schröter, K. R. (2012). "Altersbilder als Körperbilder: doing age by bodyfication," in *Individuelle und Kulturelle Altersbilder: Expertisen zum Sechsten Altenbericht der Bundesregierung,* eds F. Berner, J. Rossow, and K.-P. Schwitzer (Wiesbaden: VS Verlag für Sozialwissenschaften), 153–229.

Seibold, A. (2017). *Statutory Ages as Reference Points for Retirement: Evidence from Germany*. London School of Economics. Available online at: http://www.iipf.org/papers/Seibold-Statutory_Ages_as_Reference_Points_for_Retirement-440.pdf (Accessed August 08, 2018).

Shove, E., Pantzar, M., and Watson, M. (2012). *The Dynamics of Social Practice: Everyday Life and Ho' It Changes*. Los Angeles, CA: SAGE Publications. doi: 10.4135/9781446250655.n1

Steiber, N., and Kohli, M. (2017). You can't always get what you want: actual and preferred ages of retirement in Europe. *Ageing Soc.* 37, 352–385. doi: 10.1017/S0144686X15001130

Szinovacz, M. E., and DeViney, S. (1999). The retiree identity: gender and race differences. *J. Gerontol. Ser B* 54B, S207–S218.

van Gennep, A. (1960). *The Rites of Passage (1909)*. Chicago, IL: University of Chicago Press.

van Solinge, H., and Henkens, K. (2007). Involuntary retirement: the role of restrictive circumstances, timing, and social embeddedness. *J. Gerontol. Ser. B* 62, 295–303. doi: 10.1093/geronb/62.5.S295

Vickerstaff, S., and Cox, J. (2005). Retirement and risk: the individualisation of retirement experiences? *Soc. Rev.* 53, 77–95. doi: 10.1111/j.1467-954X.2005.00504.x

Wang, M., and Shultz, K. S. (2010). Employee retirement: a review and recommendations for future investigation. *J. Manag.* 36, 172–206. doi: 10.1177/0149206309347957

Wang, M. (ed.). (2013). *The Oxford Handbook of Retirement. Oxford Library of Psychology*. Oxford; New York, NY: Oxford University Press.

West, C., and Zimmerman, D. H. (1987). Doing gender. Gender Soc. 1, 125–151. doi: 10.1177/089124328700100200 2,S

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Reconstructing Research About Close Relationships in Old Age: A Contribution From Critical Gerontology

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Social studies on close relationship (CR) in old age of Western societies present the heterosexual couple as the dominant model of the late CR. Researchers focus mainly on couples in long-term relationships living in a common household. But in Germany, for example, only about half of all men and women between the ages of 65 and 75 live in a marital heterosexual relationship (Statistisches Bundesamt, 2016). In addition to the increasing change in the bonding behavior of older people, a differentiated picture of CR is already emerging. Accordingly, there are a large number of people for whom other forms of living together in old age are important. In population statistics (multiple) re-married, same-gender or non-marital relationship models in old age are underrepresented although they are particularly relevant in modern societies, for example in East Germany and for younger generations. This article is a critical reflection on the heteronormative view of late-life CR in the current gerontological research that leads to marginalization of older people whose CR does not correspond to this ideal. Heteronormativity refers to the "assumption of two clearly distinguishable, mutually exclusive sexes" according to which heterosexual desire is regarded as natural and normal (Hartmann and Klesse, 2007, p. 7). With a de-constructionist approach the heteronormative foundation of scientific categories can be demonstrated using the example of two gerontological studies. A normativity-critical research practice (Katz, 1996; Estes, 2011, p. 314) can help to make the diversity of late CR visible and support realistic empirical findings in gerontology.

Keywords: aging, older couples, sociology of aging, aging in close relationship, critical gerontology

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INTRODUCTION: RESEARCH ON CLOSE RELATIONSHIPS (CR) IN OLD AGE

In Western gerontology, close relationships (CR) are regarded as contributing to individual well-being and health in old age (Franke and Kulu, 2018, p. 841). The intimate bonding between (two) individuals appears as a source of social recognition, commitment and support (Walker and Luszcz, 2009). CR in later life is recognized as an institution that creates sense for its participants (Calasanti and Kiecolt, 2007; Métrailler, 2018). Sociologists characterize CR as a maximum form of personal relationship (Hirschauer, 2013, p. 40) through the (at least assumed) temporally and personally consistent and exclusive commitment between (often two) individuals. Its emotional

impact sets it apart from other social relationships (Hirschauer, 2013). There is no common definition of CR in science. De Vries and Blando describe: "[A] wide array of definitions has been offered, leading authors to call for self-definitions of couplehood. That is, just because two people live together does not mean that they are a "couple"; similarly, just because a person lives alone does not mean that he or she is 'single'." (de Vries and Blando, 2004, p. 20). Terms such as "romantic," "intimate," and "close" relationship must be distinguished to describe this unique form of "personal relationship" (Lenz, 2006). In gerontology, the discourse on CR is inadequate.

Scientific authors who use the term "romantic relationship" (Bennett et al., 2013; Kuchler and Beher, 2014) refer to the ideal of romantic love, which is consistent in modern societies (Bachmann, 2014; Burkart, 2014, 2018; Kuchler and Beher, 2014). This term emphasizes the specificity of this relationship, which lies in its emotional impact. Georg Simmel, one of the founding fathers of German sociology, already ascribes an inherent value to "intimate relationships" for participants. In a couple relationship arises a "personal interdependence" developing on the basis of an emotional structure, in which everyone refers to the only other and no one else (Kuchler and Beher, 2014 pp. 127). Simmel understands this as a prerequisite for intimacy that occurs only in dyadic relationships (Kuchler and Beher, 2014, p. 128). In literature the term "intimate relationship" (Karlsson and Borell, 2002), related to Simmel, as well as terms that transfer other theoretical approaches such as "long-term relationship" (Calasanti and Kiecolt, 2007) are often used without explication.

Following the concern of sociology to disenchant the idealized model of love relationship (Kuchler and Beher, 2014, p. 8), a large number of social scientists have already attempted to counter the transfigured ideal of love by theorizing CR. In the theoretical distinction to other social relationships, they have referred to duration and stability of relationships, residential arrangement between its participants, and types of shared intimacy and sexuality (Kuchler and Beher, 2014 p. 11). Aging studies discuss CR within these three domains, particularly in connection to age-related social, psychological and physical changes (Walker and Luszcz, 2009). As theoretical concepts are limited open questions remain regarding the relationship between emotional value in CR and its significance to old age.

Through an ethnographic lens, research approaches to the phenomenon of CR in old age are always historically, socially, and personally contextualized. This influences the discourse within the different scientific communities (Klesse, 2007, p. 45). For example, there are considerable differences in the discourse modi between German aging studies and other international (especially US-American or Scandinavian) perspectives (Settersten and Angel, 2011; Gardner et al., 2012; Neysmith and Aronson, 2012). Thus, certain aspects of social normative frame research practice. Researchers reference certain concepts of aging, such as successful, healthy or active aging and theoretical approaches such as disengagement or activity theory (Jones and Higgs, 2010; Bülow and Söderqvist, 2014; Van Dyk, 2015). Often, Sociology of CR in old age focuses on dealing with increasing needs for support and care as well as their effect on relationship dynamics and gender-specific role distribution (Walker and Luszcz, 2009). Therefore, the impact of CR on quality of life and health is often examined (Settersten and Angel, 2011). It is also noticeable that most researchers refer to traditional forms of CR while ignoring discontinuous and dynamic CR-concepts. These include, for example, CRs with periods of separate living in non-institutionalized arrangements, or non-sexual CRs. Furthermore, the "supraindividual" emotional impact of CR between its participants and its significance for old age remains underexposed (Kuchler and Beher, 2014, p. 124).

There are other phenomena that remain invisible if CR is to be captured in its intertwining with aging. Despite intended reflexive investigations of phenomena around CR in old age, scientific processes are based on actions of selection, emphasis, omission and re-contextualization (Klesse, 2007, p. 45). This limits the perception of the research subject from the outset. CR and its relevance in experiencing aging can only be partially reconstructed. A reflexive analysis makes it possible to distinguish CR in its peculiarity from other forms of relationship. Besides, it would support the visibility of social normative to gender-specific interaction in partnerships, stereotypical division of labor or heterosexual monogamous dyadic cohabitation (Klesse, 2007).

This article is intended to inspire a discussion about the hegemonic assumption of two-gender sexuality in CR research in old age (Hartmann and Klesse, 2007, p. 9) that generates heteronormativity through scientific techniques of selection and highlighting. After a first de-constructionist step finally an anti-categorical perspective[1] provides impulses for a reflective research practice and to a theoretical concept of CR in gerontology that integrates its diversity and its emotional impact in late life phases.

SOCIAL CHANGE AND NON-TRADITIONAL RELATIONSHIPS IN OLD AGE

Most research about CR is based on methodological sexism (Hirschauer, 2013, p. 43), because the gender-unequal coupleship is assumed as a natural form of close or intimate bonding. In addition, many analyses based on large representative surveys define forms of CR through a limiting category system such as single, married/unmarried, divorced/separated, widowed, remarried, or new non-married relationship (Calasanti and Kiecolt, 2007, p. 12). At the same time, they hold up the ideal of heterosexual couple relationship.

In contrast, especially for the younger generation of older people, non-traditional forms of CR are a reality (Kimmel et al., 2006). Franke and Kulu state that in the UK, for example, premarital and postmarital cohabitation are increasing, foremost in younger cohorts born in the 1960s (Franke and Kulu, 2018, p. 838). This just applies to CRs that are recognizable as

Abbreviations: CR, Close relationship; LAT, Living apart together; SOEP, Socio-economical panel.

[1] Dietze, Haschemi Yekani, and Michaelis (2018, August 8). Queer und Intersektionalität [Queer and intersectionality] Retrieved from www.portal-intersektionalität.de.

heterosexual. In Germany, only half of all men and women between the ages of 65 and 75 live in a marital heterosexual relationship (Statistisches Bundesamt, 2016). Most statistics do not take into account the different relationship systems of the other half, nor the importance that older people associate with CR.

Processes of social transformation have influenced the institutionalized patterns of biography and family patterns after increasing prosperity by the establishment of welfare state (Beck, 1986; Giddens, 1993; Lenz, 2006, p. 127). This is accompanied in particular by the women's movement and their participation in education and labor market. These processes also influenced concepts of CR (de Vries and Blando, 2004; Lenz, 2006; Burkart, 2018). The traditional model of marriage between men as breadwinners and decision-makers in family matters and women as those responsible for domestic, family and "emotional work" (Pugh, 2017) is now being extended by various forms of CR that reflect the characteristics of individualized lifestyles (Kimmel et al., 2006; Burkart, 2018). Since the 1980s at the latest, sociologists have been observing married coupleship as a discontinued model (Engstler and Klaus, 2017) that has been replaced by non-traditional forms of living together (Beck, 1986). The change in values of CR in the course of social change has been sociologically theorized but inadequately considered methodically. Franke and Kulu therefore propose a differentiation of CR, as many studies dealing with CR in old age generate omissions due to a lack of methodology. "With declining marriage rates and the spread of cohabitation and separation, a distinction between partnered and non-partnered individuals is critical to understanding whether and how having a partner influences the individuals' health behavior and mortality" (Franke and Kulu, 2018, p. 838).

In context of social change, liberalization processes have paved the way to make non-traditional CR models livable, both socially and legally. The variation of modern CR is reconstructed according to sexual orientation/desires, gender of the respective partners, duration or "union type" (Brown and Kawamura, 2010) as well as to the number of individuals involved (e.g., ranging from dyadic-monogamous-exclusive to polygamous-inclusive). de Vries and Blando, 2004 complement these characteristics by pointing out relationship constellations that are "socially or legally sanctioned," for example co-relations that exist alongside socially and legally recognized CRs (p. 20). The dynamics of (de-) institutionalized forms of living together in CR is reflected, both biographically and socially (Calasanti and Kiecolt, 2007; Bildtgard and Öberg, 2017). From a biographical perspective the dynamics of CR can be seen in the individual life course. At the socio-structural level dynamics of modern CR are interwoven with social determinants such as age, cohort affiliation, gender, social origin, educational level, and socio-economic status (Karlsson and Borell, 2002; Franke and Kulu, 2018). CR is therefore an intersectionally embedded social phenomenon (McCall, 2005). To capture its complexity, gerontology has to develop useful theoretical and methodological approaches. The scientific discourse on CR in old age should take place at the international level to transfer methodological developments in the future (Gardner et al., 2012).

Methodological Blindness for "Emotional Change"

Methodological selectivity, omissions and misrepresentations consistently lead to biased findings. It can therefore be assumed that results in population studies are limited in relation to aging and CR. A closer look at the stock of statistical data on CR-constellations of the LSBT*I population in old age confirms this assumption: A lack of data can be observed particularly in German-speaking countries (Kroh et al., 2017; Langer, 2017). In gerontology research, these topics are mostly examined with qualitative research designs (Lottmann et al., 2016; Langer, 2017).

Moreover, many studies are blind to the differences that persist in older generations of countries formerly ruled by socialism. In the GDR, other forms of bonding behavior have emerged due to labor market participation, womens' and family policies. The position of the individual in socialism was subordinated to the collective. With the reunification of Germany, the effects of system differences became noticeable. The socialist ideology intended the equation of man and woman on the legal level in that the state grouped both genders into a category of "workers." But with the integration of women into full employment, they have always been exposed to a double burden (Richter, 2018, p. 38). In comparison to women in West Germany, East German women have already carried out much earlier family work in addition to employment. Economically, women in the former GDR had a more independent position and were not socially excluded during maternity or even after divorce (Klärner and Knabe, 2016; Matthäus and Kubiak, 2016). In comparison to western Germany, divorce was less socially sanctioned which led more often people to remarry or enter a new partnership. Framework conditions affected self- and partnership-concepts.

TABLE 1 | Comparison of selective effects in two studies on CR in old age.

Author and nationality	CR-concept	Categories for CR	Methodology/methods	Data
Koren (2015), Israel	• Heterosexual dyadic relationship • Individual diversity	• Re-married • Cohabitation • LAT	• Qualitative design • Phenomenological approach • dyadic analysis	Primary data of semi-standardized individual interviews
Brown and Kawamura (2010), USA	• Union type • Dyadic relationship • Increase in unmarried couples	• Cohabitors • Married	• Quantitative design • Deductive approach • Hypothesis test	Secondary survey data

Consequently, the ideal of staying in the same CR for life became less significant. In the GDR, unmarried forms of CR and patchwork families were an early phenomenon. Despite the formal framework of the state gender equalization, structural inequalities and the traditional gender-specific dynamic in coupleship remained intact. The couple's interaction was still characterized by the traditional heterosexual model of CR with the stereotype division of labor between men and women (Richter, 2018, p. 41). And even though the traditional model has been reproduced in coupleship, it is plausible that the structural framework has influenced the individual to associate CR with an emotional value that is common in capitalist societies. Current gerontological research should consider how partnership concepts of couples socialized in the socialist system can be methodically treated.

The effects of social change on CR in old age are also reflected in expectations of (re-)entering CR. From a life-course perspective the goals and expectations of CR in later life differ from those in younger years (Jong Gierveld and Peeters, 2003; Bennett et al., 2013; Koren, 2015). In later stages of life, a relationship (if intended at all) is no longer entered into with starting a family and securing the livelihood of children (Lenz, 2006, p. 15). The decision to enter or to maintain CR in old age is often chosen, consciously or unconsciously, as a strategy preventing loneliness and experiencing affection and intimacy (Calasanti and Kiecolt, 2007). Moreover, older people seem to be concerned with preserving autonomy and their own independence without the help of children or professional support systems (Koren, 2015, pp. 1876, 1879; Bildtgard and Öberg, 2017).

In old age, the expectations and demands to arrange living together in a CR also change. Karlsson and Borell (2002) prove in their study that especially women in a non-marital heterosexual CR in old age report the advantages of separate households (p. 17). By living apart together (LAT) they experience a high degree of autonomy toward their male partners. In this way, women can strike a self-determined balance between privacy and intimacy with their partner without giving up their (possibly struggled) independence (Karlsson and Borell, 2002).

As unmarried forms of CR and patchwork families play an increasingly important role in modern societies, this will require more attention in gerontology.

As Walker and Luszcz (2009) suggest in their literature review, three domains of research of CR on old age can be identified: First, researchers refer to the sexual orientation/desire within the relationship as well as to gender composition, second, the duration of a relationship in order to make subsequent statements about its stability, and third, residential arrangements. The task of capturing further dimensions of CR in old age scientifically has not yet been solved. The sociological concepts of CR used in gerontology approach the phenomenon only instrumentally in limited categories. Moreover, research about CR is blind to certain phenomena beyond categories of heteronormativity and monogamy. Explorative studies that focus on under-represented phenomena make them visible, but also run the risk of marginalizing them as "special cases."

Consequences for Gerontological Research Practice

One way to overcome this dilemma may be to de-construct research methods of gerontological studies by an anti-categorical approach (McCall, 2005; Walgenbach, 2012). With this perspective it is possible to examine intertwined phenomena of CR in old age. Thereby, relevant markers of difference are considered in their interdependence to overcome isolated or one-dimensional perspectives on power and domination relations in scientific processes (Walgenbach, 2012, p. 65). This is preceded by the understanding that scientific practice holds a powerful social position (Katz, 1996). This critical approach has three aims: First, to uncover processes and structures of selectivity and omission that lead to under-representation and gaps in the definition and construction of social reality (Berger et al., 2016), second, to make visible people whose identity crosses the boundaries of traditionally constructed groups (McCall, 2005, p. 1774); and third, to adequately determine the facets of CR and its significance for individuals in later adulthood.

Table 1 (p. 7) compares underlying CR-concepts of a quantitative and a qualitative study. In the first study, a hypothesis-based analysis by Brown and Kawamura (2010) examines the relationship quality of non-married and married couples. The study is based on longitudinal data from a representative sample of the National Life, Health, and Aging Project (NSHAP) from 2005 to 2006. These data were supplemented by qualitative data of a subsequent semi-standardized questionnaire (Brown and Kawamura, 2010, p. 780). The researchers assumed that there is a correlation between union type and relationship quality in the age bracket of 57–85 (Brown and Kawamura, 2010, p. 779). The authors divide the sample into two groups, cohabitants and married. They take into account the increase of cohabitation and non-married couples in the American population, but create a dichotomous concept of CR. The sample description can be considered as a selective act, in which forms deviating from these two categories remain invisible. The second study by Koren (2015) is based on a qualitative interview questionnaire of 20 heterosexual Israeli couples aged 66–92. She examines the relationship between second couplehood and aging. Using primary data opens up other analysis options, but also involves a high degree of responsibility for theoretical conception by researchers. Koren divides her sample into three CR-categories: (1) remarried coupleship, (2) cohabitants, and (3) LAT-couples (p. 1870). She points out that two pairs could not be included in the comparative analysis because their CR-concept did not correspond to the categories. The specificity of this qualitative study is the direct contact between the participating couples and the researchers. In this way, couples could personally describe their current relationship constellation.

A common feature of these studies is presupposing CR only occurs as a dyad. The categories used in the studies are the results of selection procedures carried out by researchers ahead preparing analyses. These constructions limit the breadth of the CR phenomenon. Moreover, the defined CR-categories of both studies do not integrate the inherent emotional significance of

CR in old age. Both studies capture CR only in the three domains described by Walker and Luszcz (2009) mentioned above.

Reconstructing CR comprehensively can be achieved strategically by excluding limitations in research design. Researchers should ask themselves how they structure a phenomenon with research practice. As Erel et al., 2007, (p. 247) point out, this seems to be challenging, since many selection mechanisms often remain unspoken in research processes.

Researchers can give informants the opportunity to define their "union type" themselves and to describe the associated significance for them. Traunsteiner (2016), for example, chooses this strategy in her study on lesbian CR in old age in Austria.

In quantitative surveys, open questions could be used to an intra-categorical extension obtaining a comprehensive design (McCall, 2005; Walgenbach, 2012). The questionnaire of the German SOEP survey[2] for example, observes since 2016 the sexual orientation of informants based on a categorical self-classification as homosexual, bisexual or none of them (Kroh et al., 2017, p. 688). Nevertheless, the new SOEP strategy fails because it just includes couples living in the same household. It shows that it will become increasingly difficult for researchers to methodically address the partnership's diversity in old age in a changing society. A first step would be to let participants speak.

[2] *The Socio-Economic Panel (SOEP) is an Important German Longitudinal Study With Annual Data on Private Households Since 1984. German Institute for Economic Research* (DIW) (2018, November 8). Available online at https://www.diw.de/en/diw_02.c.221178.en/about_soep.html

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REFERENCES

Bachmann, U. (2014). Romantische Liebe zwischen Ideen, Institutionen und Interessen. Zur Ausdifferenzierung der erotischen Wertsphäre bei Max Weber [Romantic love between ideas, institutions and interests. To differentiate Max Weber's erotic sphere of values], in T. Morikawa, ed *Kulturen der Gesellschaft*. Die Welt der Liebe: Liebessemantiken Zwischen Globalität und Lokalität, 101–137.

Beck, U. (1986). *Risikogesellschaft: Auf dem Weg in Eine Andere Moderne [Risk society. On a way into Another Modern Era]* (Erstausg., 1. Aufl.). Edition Suhrkamp.

Bennett, K. M., Arnott, L., and Soulsby, L. K. (2013). You're not getting married for the moon and the stars: the uncertainties of older British widowers about the idea of new romantic relationships. *J. Aging Studies* 27, 499–506. doi: 10.1016/j.jaging.2013.03.006

Berger, P. L., Luckmann, T., and Plessner, H. (2016). *Die Gesellschaftliche Konstruktion der Wirklichkeit: Eine Theorie der Wissenssoziologie* [*The Social Construction of Reality: A Theory of Sociology of Knowledge*] (26. Auflage). *Fischer* 6623. Frankfurt am Main: Fischer Taschenbuch Verlag.

Bildtgard, T., and Öberg, P. (2017). *Intimacy and Ageing: New Relationships in Later Life. Ageing in a Global Context*. Bristol: Policy Press.

Brown, S. L., and Kawamura, S. (2010). Relationship quality among cohabitors and marrieds in older adulthood. *Soc. Sci. Res.* 39, 777–786. doi: 10.1016/j.ssresearch.2010.04.010

Bülow, M. H., and Söderqvist, T. (2014). Successful ageing: a historical overview and critical analysis of a successful concept. *J. Aging Stud.* 31, 139–149. doi: 10.1016/j.jaging.2014.08.009

Burkart, G. (2014). "Paarbeziehung und Familie als vertragsförmige Institutionen? [Couple relationship and family as contractual institutions?]," in *Familienforschung. Familie im Fokus der Wissenschaft*, eds A. Steinbach, M. Hennig, and O. Arránz Becker (Wiesbaden: Springer VS), 71–91.

Burkart, G. (2018). "Soziologie der Paarbeziehung: eine Einführung [Sociology of the couple relationship: an introduction]," in *Studientexte Soziol* (Wiesbaden: Springer VS). doi: 10.1007/978-3-658-19405-5

Calasanti, T., and Kiecolt, J. K. (2007). Diversity among late-life couples. *Generations* 31, 10−33.

de Vries, B., and Blando, J. A. (2004). "The study of gay and lesbian aging: lessons for social gerontology," in *Gay and Lesbian Aging: Research and Future Directions*, eds G. Herdtand and B. de Vries (New York, NY: Springer), 3–28.

Engstler, H., and Klaus, D. (2017). "Auslaufmodell traditionelle Ehe'? Wandel der Lebensformen und der Arbeitsteilung von Paaren in der zweiten Lebenshälfte [Discontinued 'traditional marriage' model? Change in living arrangements and division of labour of couples in the second half of life]," in *Alter im Wandel*, eds K. Mahne, Wolff, Julia, Katharina, J. Simonson, and C. Tesch-Römer (pp. 201–213). Wiesbaden: VS Springer. Available online at https://link.springer.com/content/pdf/10.1007%2F978-3-658-12502-8_13.pdf

Erel, U., Haritaworn, J., Gutiérrez Rodríguez, E., and Klesse, C. (2007). "Intersektionalität oder simultaneität?! – Zur verschränkung und gleichzeitigkeit mehrfacher machtverhältnisse – eine einführung [Intersectionality or simultaneity?! - on the entanglement and simultaneity of multiple power relations - an introduction]," in *Heteronormativität: Empirische Studien zu Geschlecht, Sexualität und Macht*, eds J. Hartmann, C. Klesse, P. Wagenknecht, and B. Fritzsche (Wiesbaden: VS-Verlag für Sozialwissenschaften), 239–250.

Estes, C. L. (2011). "Crisis and old age policy: Chapter 19," in *Handbook of Sociology of Aging*, eds R. A. Settersten and J. L. Angel (New York, NY; Heidelberg; London: Springer Science and Business), 297–320.

Franke, S., and Kulu, H. (2018). Cause-specific mortality by partnership status: simultaneous analysis using longitudinal data from England and Wales. *J. Epidemiol. Community Health* 27, 838–844. doi: 10.1136/jech-2017-210339

Gardner, P., Katagiri, K., Parsons, J., Lee, J., and Thevannoor, R. (2012). "Not for the fainthearted": engaging in cross-national comparative research. *J. Aging Studies* 26, 253–261. doi: 10.1016/j.jaging.2012.02.004

Giddens, A. (1993). *Wandel der Intimität: Sexualität, Liebe und Erotik in Modernen Gesellschaften [The Transformation of Intimacy: Sexuality, Love and Eroticism in Modern Societies* (Dt. Erstausg). Frankfurt am Main: Fischer-Taschenbücher.

Hartmann, J., and Klesse, C. (2007). "Heteronormativität. empirische Studien zu Geschlecht, Sexualität und Macht–eine Einführung [Heteronormativity. empirical studies on gender, sexuality and power-an introduction]," in

Heteronormativität: Empirische Studien zu Geschlecht, Sexualität und Macht, eds J. Hartmann, C. Klesse, P. Wagenknecht, and B. Fritzsche (Wiesbaden: VS-Verlag für Sozialwissenschaften), 7–16.

Hirschauer, S. (2013). Geschlechter(un)gleichheiten, Paarfindungen, Paarbindungen: Geschlechts(in)differenz in geschlechts(un)gleichen Paaren. Zur Geschlechterunterscheidung in intimen Beziehungen [Gender (in)equality, pair finding, pair bonding: Gender(in)difference in gender(in)equal pairs. Gender differentiation in intimate relationships]. *GENDER*, 37–56. Available online at https://www.theorie.soziologie.uni-mainz.de/files/2015/11/Geschlechtsindifferenz-in-geschlechtsungleichen-Paaren.pdf

Jones, I. R., and Higgs, P. F. (2010). The natural, the normal and the normative: contested terrains in ageing and old age. *Soc. Sci. Med.* 71, 1513–1519. doi: 10.1016/j.socscimed.2010.07.022

Jong Gierveld, J. D., and Peeters, A. (2003). The interweaving of repartnered older adults' lives with their children and siblings. *Ageing Society* 23, 187–205. doi: 10.1017/S0144686X02001095

Karlsson, S. G., and Borell, K. (2002). Intimacy and autonomy, gender and ageing: living apart together. *Ageing Int Fall* 27, 11–26. doi: 10.1007/s12126-002-1012-2

Katz, S. (1996). *Disciplining Old age: The Formation of Gerontological Knowledge. Knowledge: Disciplinarity and Beyond*. Charlottesville, VA: University Press of Virginia.

Kimmel, D., Rose, T., and David, S. (2006). *Lesbian, Gay, Bisexual, and Transgender Aging*. New York, NY; Chichester: Columbia University Press.

Klärner, A., and Knabe, A. (2016). "Tradierter pragmatismus in der privaten lebensführung: die entkopplung von ehe und familie in ostdeutschland [Traditional pragmatism in private life: the decoupling of marriage and family in east Germany]," in *Der Osten: Neue Sozialwissenschaftliche Perspektiven auf Einen Komplexen Gegenstand Jenseits von Verurteilung und Verklärung*, eds S. Matthäus and D. Kubiak (Wiesbaden: Springer VS), 45–69.

Klesse, C. (2007). "Heteronormativität und qualitative Forschung. Methodische Überlegungen [Heteronormativity and qualitative research. Methodological considerations]," in *Heteronormativität: Empirische Studien zu Geschlecht, Sexualität und Macht*, eds J. Hartmann, C. Klesse, P. Wagenknecht, and B. Fritzsche (Wiesbaden: VS-Verlag für Sozialwissenschaften), 35–51.

Koren, C. (2015). The intertwining of second couplehood and old age. *Ageing Soc.* 35, 1864–1888. doi: 10.1017/S0144686X14000294

Kroh, M., Kühne, S., Kipp, C., and Richter, D. (2017). *Einkommen, soziale Netzwerke, Lebenszufriedenheit: Lesben, Schwule und Bisexuelle in Deutschland* [*Income, Social Networks, Life Satisfaction: Lesbians, Gays and Bisexuals in Germany*] (DIW Wochenbericht No. 35). Berlin.

Kuchler, B., and Beher, S. (eds) (2014). Soziologie der Liebe: *Romantische Beziehungen in theoretischer Perspektive [Sociology of Love: Romantic Relationships in a Theoretical Perspective] (1. Aufl.). Suhrkamp Taschenbuch Wissenschaft*. Berlin: Suhrkamp.

Langer, P. C. (2017). *Gesundes Altern schwuler Männer: Kurzbericht zum Stand der Internationalen Forschung [Healthy Aging of Gay Men: A Brief Report on the State of International Research]*. Köln. Available online at http://schwuleundalter.de/download/gesundes-altern-schwuler-maenner/

Lenz, K. (2006). *Soziologie der Zweierbeziehung: Eine Einführung [Sociology of the Couple Relationship: An Introduction] (3., überarbeitete Auflage)*. Wiesbaden: VS Verlag für Sozialwissenschaften/GWV Fachverlage GmbH Wiesbaden. Available online at http://dx.doi.org/10.1007/978-3-531-90669-0 doi: 10.1007/978-3-531-90669-0

Lottmann, R., Lautmann, R., and Castro Varela, M. d. M. (eds) (2016). *Homosexualität_en und Alter(n) [Homosexuality_ies and aging]*. Wiesbaden: Springer Fachmedien.

Matthäus, S., and Kubiak, D. (eds) (2016). *Der Osten: Neue sozialwissenschaftliche Perspektiven auf einen komplexen Gegenstand jenseits von Verurteilung und Verklärung [The (German) East: New Social Science Perspectives on a Complex Object Beyond Condemnation and Transfiguration]*. Wiesbaden: Springer VS. Available online at https://link.springer.com/book/10.1007/978-3-658-06401-3#about

McCall, L. (2005). The complexity of intersectionality. *Signs* 30, 1771–1800. doi: 10.1086/426800

Métrailler, M. (2018). *Paarbeziehungen bei der Pensionierung: Partnerschaftliche Aushandlungsprozesse der nachberuflichen Lebensphase [Pair relationships at retirement: Partnership-based negotiation processes in the post-work phase of life]*. Wiesbaden: VS Springer. Available online at https://link.springer.com/book/10.1007%2F978-3-658-18679-1#about

Neysmith, S. M., and Aronson, J. (2012). Global aging and comparative research: pushing theoretical and methodological boundaries. *J. Aging Studies* 26, 227–231. doi: 10.1016/j.jaging.2012.02.001

Pugh, A. J. (2017). "Transformationen der Arbeit und das flexible Herz [Transformations of work and the flexible heart]," in *Geschlecht und Gesellschaft. Geschlecht im flexibilisierten Kapitalismus? Neue UnGleichheiten*, eds I. Lenz, S. Evertz, and S. Ressel (Wiesbaden: Springer Fachmedien Wiesbaden), 109–130.

Richter, A. S. (2018). *Intersektionalität und Anerkennung: Biographische Erzählungen älterer Frauen aus Ostdeutschland*. Weinheim Basel: Beltz Juventa.

Settersten, R. A., and Angel, J. L. (eds) (2011). *Handbook of Sociology of Aging*. New York, NY; Heidelberg, London: Springer Science and Business. doi: 10.1007/978-1-4419-7374-0

Statistisches Bundesamt (2016). *Familie, Lebensformen und Kinder: Auszug aus dem Datenreport 2016* [*Family, Living arrangements and Children: Excerpt from the Data Report* 2016]. Available online at https://www.destatis.de/DE/Publikationen/Datenreport/Downloads/Datenreport2016Kap2.pdf?__blob=publicationFile

Traunsteiner, B. S. (2016). "Gleichgeschlechtlich l(i)ebende Frauen im Alter. Aspekte von lesbischem Paarbeziehungsleben in der dritten Lebensphase [Same-gender l(o)iving women in old age. Aspects of lesbian couple relationship life in the third phase of life]," in *Homosexualität_en und Alter(n)*, eds R. Lottmann, R. Lautmann and M. d. M. Castro Varela (Wiesbaden: Springer Fachmedien Wiesbaden), 163–178.

Van Dyk, S. (2015). *Soziologie des Alters [Sociology of Aging]. Einsichten Themen der Soziologie*. Bielefeld: Transcript-Verlag.

Walgenbach, K. (2012). *Intersektionalität - Eine Einführung. [Intersectionality -An Introduction]*. Available online at www.portal-intersektionalität.de

Walker, R., and Luszcz, M. (2009). The health and relationship dynamics of late-life couples: a systematic review of the literature. *Ageing Society* 29, 455–480. doi: 10.1017/S0144686X08007903

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Making a Case for Creating Living Labs for Aging-in-Place: Enabling Socially Innovative Models for Experimentation and Complementary Economies

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Aging is continuously depicted as a force majeure event despite clear and robust premonitions of its coming. However, such depiction serves to justify the unpreparedness and inadequacy of policies manifesting in loneliness and isolation, unsatisfied demands in health and social care, lack of suitably inclusive residential and social facilities, and inequitable access to support and services. Recent years have seen an increase in social innovation that involves alternative transaction models, such as time-banks and circular economies. These initiatives represent collective responses to changes and challenges such as aging by identifying and innovatively capturing and exchanging locally- and freely- available assets with the intent to fulfill economic needs (more affordable goods and services), social ambitions (skills development and exchange, repurposing space, social inclusion, and cohesion) environmental aspirations (up-cycle) and psychological needs (sense of purpose, identity, belonging, recognition). Whilst it is often assumed that *ad hoc* measures are appropriate to resolve the challenges posed by an aging demographic, the learnt assumption that underpins this work is that aging is a systemic issue and ought to be understood, and resolved, in its context, not by producing niche- relevant policy and interventions, but considering the impacts it has on the whole society. Henceforth it is proposed that truly transformative social innovation for the aging population must consider and resolve the challenges of communities as these are where older adults can stay relevant socially and, in the presented approach, also economically. Through the review of four international case studies, a framework with four cornerstones has emerged. This includes the changing role of local and central governments, the models of value creation, co-creation mechanisms, and finally, technology, especially digital social currency. The concurrent presence of the four factors in the framework is not always a requirement for social innovation to emerge and flourish. However, the presented analysis suggests that all four themes have an impact even when not being direct agents of social innovation. The authors conclude by making a case for developing Living Labs for Aging-in-Place, to experiment and study proposed solutions for systemic challenges facing the aging population, grounded in community-led schemes.

Keywords: aging-in-place, community, complementary economy, co-production, living lab, social innovation, time banking, community currency

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INTRODUCTION

Across post-industrial societies (and the political spectrum) population aging continues to be portrayed as a force majeure event despite clear and robust indicators that have long warned of its coming and inevitability. This portrayal serves to excuse the unpreparedness and inadequacy of policies, including lack of financial planning and investment, that manifest in insufficient residential and social facilities for older citizens, poor quality in health and social care, inequitable access to support and services, loneliness, isolation, limited choice, and unmet demands. Most seniors want to live as long as possible in comfort and safety in their own homes, but risk being institutionalized prematurely or having their cases medicalised for lack of social support, which adds to fear and suffering in old age and to pressures on hospitals through inappropriate admission and bed blocking (Age UK, 2016).

In the United Kingdom (UK), the landscape of social care for people in later life has changed rapidly following austerity-induced cuts to the social care budget. Not only has the budget been reduced in real terms, but it has also stretched to fulfill a growing demand encompassing complex co-morbidity cases that rise steeply with age. Statutory services are only capable of intervening in advanced cases where highly-qualified expertise is needed, usually when the client has become severely reliant and just before accessing residential care facilities. Usually, the client journey in the social care service is the expression of the individuals' wealth and social network. However, changes in family structure and relationships have contributed to a growing number of older adults without children. In total, it is predicted that there will be 2 m people aged 65+ in 2030 (Office of National Statistics, 2016a). We are, thus, at the cusp of a "crisis" in adult social care which, given these intersecting constraints and demands, will require not only novel solutions but novel ways of finding solutions.

Against this backdrop, the growing political (and wider) interest in the role of social innovation in addressing—and potentially averting—this looming crisis is explored. In particular, this work reviews and analyses a set of emerging social-economic experiments in developing inclusive and collaborative economies at local (community) scale, which focus on active and responsible citizenship and on developing sharing, caring, and circular (social) economies on principles of asset-based community development (ABCD) and reciprocity. Insights are drawn from four case studies of local initiatives that started as time banks, but which have developed in innovative ways, enabling them to thrive and address societal challenges of different type by attracting a wide set of actors and assets to their activities. Thereby, they have also avoided the disappointing but usual fate of most time banks, which often fail within 3 years of start-up. The four case studies examined here respond to diverse community aspirations and also differ in terms of longevity, penetration, and business models underpinning them. Through evaluation of the case studies, insights are provided on the future of complementary social (community) economies, their potential roles in new models of social care, and needed social and social policy innovation and experimentation.

This paper is structured as follows. The Materials and Methods section has three subsections. In the first of these (the landscape of social care today) today's social care models are reviewed and their design, operation and capacities to offer accessible, affordable and appropriate care and support options to all citizens as they age are evaluated. In the second subsection (social innovation) the growing policy interest in social innovation and in complementary community economy initiatives particularly as potentially offering new options to support aging-in-place is explored. In the third subsection (methodology) the approach of using case studies is explained and justified. The following section analyses the four case studies individually. In the discussion section, insights are drawn from a comparative analysis of the four cases leading to a discussion of emerging characteristics of an ecosystem for social innovation for aging-in-place.

MATERIALS AND METHODS

The Landscape of Social Care Today

Social care can be broadly conceptualized as a portmanteau term that encompasses interventions that mitigate (or prevent) vulnerabilities in terms of compromised independence that are experienced by individuals rendered vulnerable because of age, disability, or disadvantage. In theory, social care interventions aim to both reduce negative outcomes such as vulnerability/dependence and promote positive outcomes such as enhanced well-being or quality of life. Any debate about the future or current state of social care needs to address three key elements: the characteristics of the individuals with support needs; the suite of services/interventions provided to address the identified needs (services in the home, community, or long-term care) and sources of funding/service delivery (public, private, and third sector).

Older people represent the primary group supported by the social care system because of difficulties with independent living as manifest by difficulties in undertaking basic activities of daily living such as dressing and toileting. Illustrative of the current situation are the statistics for England. In 2015/16 there were approximately 2 million requests to the relevant local authority for social care support of which 75% were from older people (Full Fact, 2017). Of the almost 1 million people receiving long-term support, approximately two-thirds are aged 65+. Approximately half of all social care expenditure is for those aged 65+ (Health Foundation, 2018). According to Kingston et al. (2018), the next two decades will present increasing demands on the social care system given the increase in the expansion of morbidity and predicted increase in the number of older adults living with multi-morbidity (four or more conditions). Kingston et al. (2018) offer a more nuanced view of future demands for care using a measure of dependency classified as high (requires 24 h care), medium (daily care) and low (less than daily care) along with independent. The next two decades will see the paradox of an increase in both numbers of individuals aged 65+ who are independent; those who are dependent and those with complex care needs consequent to increase in multi-morbidity noted earlier. This research reflects the potential

increased need for social care resultant from the population aged 85 and older, which is estimated at 3.7% increase per annum (Wittemberg and Ho, 2015).

Both the formal social care system and care provided by families encompass the response to these care needs. Establishing robust data about trends in social care funding is problematic. However, it is suggested that expenditure in England fell by 6% between 2009/10 and 2015/16. It is unlikely that the next two decades will see increases in state funding to address these increases in demand. Family care-usually provided by a spouse or adult child-contributes significantly to the support of older people. Estimates of the financial value of informal care for older adults provided by family and friends are in the order of £57 billion in the UK in 2014, compared with approximately £23 billion from the formal carer sector (Office of National Statistics, 2016b). Projections of the future "supply" of informal carers suggest that it is unlikely to keep pace with demand; for example, it is projected that the care provided by adult children will go down while the role of spouse carers is likely to increase. Against a backdrop of increasing care demands, which are unlikely to be met by increases in funding or contributions from family carers, new models of care are required to ensure that vulnerable older adults can live independently and with dignity.

One potential component of a robust model of social care is to look at vulnerabilities that compromise independence or quality of life across the life course rather than focussing upon specific age groups. We argue that one deficiency in our current models of social care and the ensuing debates about funding is that it locates vulnerability to specific age groups, thereby setting up competition or conflicts between generations rather than taking a life course approach. One illustration of how vulnerability to compromised quality of life is not the sole prerogative of a specific age group is that of loneliness. Recent data from the Office of National Statistics indicates that loneliness is not merely a "problem" of old age but is experienced by adults of all ages with young adults recording the highest prevalence (Office of National Statistics, 2018). Interventions need to focus not just on older adults but on all age groups and to operate at macro community levels as well as on individual risk factors (Gov.UK, 2018; Victor et al., 2018). Identifying solutions with the potential for scaling up or out is also a topic of discussion and strategic developmental by the European Innovation Partnership on Active and Healthy Aging which has established six actions groups to define the challenges and organize collaborative work (European Commission, 2015).

Social Innovation

Social innovation is a process that entails 'doing things differently' and involves change in social relations and systems (Haxeltine et al., 2015). By extension, initiatives that include new social relations for 'doing things differently' can be considered as 'socially innovative' and the new ways of thinking, organizing, acting and interacting they introduce can be considered as 'social innovations'. Social innovation as a process responds to at least three different stimuli: intrinsic needs people have (e.g., for self-determination, social bonds, and to be engaged in activities and relationships they find meaningful); perceived failings of mainstream systems or gaps in mainstream provision; and, change in the wider socio-material context that present problems or opportunities (Weaver et al., 2017). Kemp et al. (2016) argue that social innovation is often a reaction to institutions and developments that are perceived as "dehumanizing." People who form social innovation initiatives are often drawn together by shared values, shared ways of seeing, framing or reframing challenges and shared visions of how to address challenges 'differently'. Through their initiatives, social innovators seek to demonstrate and diffuse new forms of social relations (or to revive older forms of social relations that are no longer widely practized) and new 'proto' institutions that might challenge existing institutions, altering, replacing, or offering alternatives to these (Haxeltine et al., 2017) or providing complements that make existing social systems work better (Weaver et al., 2017). Recent progress has been made in conceptually defining social innovation, distinguishing types of innovation by the scale and scope of change sought and the extent to which the innovation is complementary or radical to current social institutions (Marques et al., 2018). Weaver and Marks (2017) note that the effectiveness of social innovation as a counter-force depends on whether initiatives that propose and demonstrate alternative social relations, social models, and systems are able to sustain and scale and, in the process, can still retain their humanizing qualities. Key dimensions of social innovation, in this respect, are the scope, scale and intensity of activities and the durability or longevity of initiatives. These relate to the potential of social innovation to contribute to transformative change at societal- or systems- levels. Scaling of social innovation can occur through processes of scaling up and scaling out. For social innovation initiatives whose proponents hold transformative ambition, ways must be found to sustain their initiatives and, ultimately, to scale them up and/or replicate them.

Some social innovators aspire to strengthen community resilience and to meet individual and community needs by organizing networks of sharing and reciprocity, where individual and organizational members exchange services and skills (e.g., time banks) and make use of each other's additional facilities and equipment, such as meeting rooms, tools, and internet access. Recent years have seen an increase in social innovation that involves transactions that reduce energy and resource waste (e.g., circular economies) and peer-to-peer transaction models that involve collaborative sharing of goods and services (e.g., sharing economies) and less reliance on fiat money as a medium of exchange (e.g., solidarity economies). Such initiatives represent collective responses to change by identifying and innovatively capturing and exchanging locally- and freely- available assets with the intent to fulfill economic needs (more affordable goods and services), social ambitions (skills development and exchange, repurposing space, social inclusion, and cohesion) environmental aspirations (up-cycle), and psychological needs (sense of purpose, identity, belonging, recognition).

Time banks and related initiatives developed therefrom, which are highlighted in the case studies that inform this research paper, are networks of individuals and organizations, usually within a local community, whose members exchange services.

They are outcomes of social innovation processes and represent proto type institutions involving forms of social relations built around principles of reciprocity. In time banking, time is used as a community currency and unit of account and all exchanges are considered equal in value irrespective of the skill involved or level of complexity (Lasker et al., 2011). Time banking also recognizes that capabilities and the amount of time and energy an individual can devote to making contributions vary across an individual's life course and this applies also to needs. This gives scope for both horizontal service exchange, where members exchange services in the current period intra-generationally, and vertical or inter-generational service exchanges that involve the 'banking' of earned hours for redemption later. These aspects have led to claims that time banking could help strengthen bonds within communities and build community resilience (Cahn, 2004; Shih et al., 2015), could be deployed to support social and economic inclusion for individuals otherwise marginalized or excluded (see Drakeford and Gregory, 2010; Marks, 2012; Weaver et al., 2015; Skropke, 2016) and could be useful in building missing support systems for social welfare and health care systems.

Social innovation initiatives, such as time banks, are attracting increasing policy attention because they are seen to hold the potential to address a growing range of societal challenges that are difficult to address through mainstream approaches. Many of today's pressing societal challenges have systemic pathologies linked to prevailing development models. This makes them less tractable to solutions developed from mainstream logic. Social innovation initiatives are seen as a prospective source of novel solutions because solutions are designed from values and principles different from those of mainstream institutions and systems. Furthermore, the resourcing needs of social innovation activities differ significantly from those of more mainstream activities. Social innovation initiatives typically require relatively little money, instead using otherwise wasted or underutilized resources already available within communities as inputs to their operations, such as labor, facilities and equipment of their members, which members are willing to share and exchange (Weaver et al., 2017). These kinds of initiative—based on mutual aid, reciprocity, and asset-based community development—also resonate strongly with concepts of care-in-community and aging-in-place. This attracts policy and public interest, especially in times of austerity and increasing demand on mainstream services, when public finances and services are stretched.

Policy interest notwithstanding, harnessing social innovation organizations and initiatives is far from unproblematic. Part of the challenge lies with establishment actors, who sometimes seek to co-opt initiatives to serve specific departmental or agency agendas not fully appreciating that by jeopardizing the independence and autonomy of initiatives they risk destroying the basis of grassroots support which is the source of both the useful and innovative potential they seek to capture. Attempts to co-opt by individual agencies also ignores that many social innovation organizations and initiatives have a cross-cutting scope. Failing to provide cross-agency financial support (which would make this an easier lift for each agency) and to guarantee long-term support (difficult when policies and governing parties can change) risks narrowing the scope of social innovation organizations and damaging their prospects to contribute to more wide-ranging and longer-term societal and systems changes.

Another part of the challenge lies with social innovation organizations and, more specifically, with the relationships on the one hand between different social innovation organizations and, on the other hand, between local manifestations of particular types of organization and the membership organizations that often emerge to represent them. Social innovation organizations often formalize around an "approach" or "tool" they develop and/or a domain of action where they apply their approach. In seeking to promote their specific approach, they often over-claim what they achieve. They can also become protective about "their" approach and "domain" and often end up competing with other initiatives when collaboration would deliver better outcomes more cost-effectively. The tool and the identity of the initiative can become intertwined—as is the case with time banking—and these can become separated from the actual mission. The purpose can mutate from delivering positive social impact and innovating continuously to this end, to one of promoting the tool *per se*.

When membership organizations emerge to represent local initiatives, these problems can deepen. The interests of the paid professionals—who seek to develop income streams to support their operations—do not necessarily align with those of the local initiatives that, ostensibly, they represent, and should support. The actual role played by membership organizations can become parasitical and perverse, since their income stream depends on creating dependencies. In the case of time banking, control is exerted on local manifestations by creating dependence on software supplied via the membership organizations and by requirements to adhere to rigid models of time banking approved by the center. The membership organizations with individual access to activity data across all local manifestations have most to lose if the data do not support their claimed levels of membership and social impact. In the case of time banking, there is no credible evidence made available by the national UK membership organization, Timebanking UK (TBUK), to back its claims that time banking is a growing movement that delivers wanted social impacts cost-effectively.

Vested interest on the part of the membership organization precludes using the data as a resource to support time banking experiments that could improve performance. This frustrates innovation and deters sponsors. It also leads to a misleading narrative on the part of the membership organization that it only requires an initial investment to establish a local time bank and, once established, this will add permanently to community infrastructure. In reality, virtually all time banks fail in their first 3 years. There have been more than 500 times bank deaths in the UK since time banking was introduced around 20 years ago. TBUK claims to represent around 300 time banks currently. The actual number is estimated by investigative researchers to be around half this number with fewer than half of these evidencing even modest levels of activity per member.

Methodology

The methodological approach involves case studies of four social innovation initiatives that started as time banks but have evolved into more broadly-based community economy initiatives. The case studies are framed as "ongoing experiments" in developing

community economies and as success cases since, unlike most time banks that struggle to survive even for 3 years, these have or are developing business models that have enabled them to sustain and expand the scope and impact of their activities. These are interesting because they have continued to innovate and evolve in the processes of seeking to leverage their positive social impact and to secure their financial sustainability.

If an initiative can grow and attract more citizens and organizations to join, it is more likely to be able to offer a wider set of asset-sharing opportunities to participants, which will help it sustain, attract additional participants and grow further. Conversely, if the rate and level of growth of the initiative are low, the sets of participants, assets and opportunities may be too limited to attract others to join, and the initiative is unlikely to survive. Other factors known to be important for sustainability are the level and trajectory of transaction costs (e.g., high costs for few transactions and growing marginal transaction costs) and the limited capacity of the initiatives to demonstrate actual activity levels and social outcomes accomplished. Against this backdrop, our objective is to establish framing conditions and principles for designing and implementing community economies that can address these challenges.

To accomplish this goal, this research sets to learn from initiatives that have sustained and grown over time. A multiple case study comparative approach (Yin, 2003) was adopted selecting "success-cases" (Stake, 2000; Brinkerhoff, 2003; Murphy, 2016) to understand what these long-surviving initiatives do that is different and that contributes to their sustainability. The four community economy initiatives that form the basis of the comparative case studies are: Lewisham Local (LL), Give&TakeCare (G&TC), the Hull and East Riding Mutual Aid Network (HERMAN) and Partners-in-Care (PIC). All are UK based with the exception of Partners-in-Care which is based in the United States. The case studies were identified through a process that involved screening currently-active time banks in order to find those that have sustained beyond 3 years, are very active and are innovative in developing wider community economies (HERMAN, LL) and/or in addressing aging in the community (LL, G&TC, PIC). These initiatives are framed as "ongoing experiments" in developing community economies, but also as success cases, since, unlike most time banks that struggle to survive even for 3 years, these initiatives have developed in innovative ways, enabling them to thrive and address societal challenges by attracting a broad and diverse set of actors and assets to their activities. In justifying the selection of the case studies and their attribution here as social innovation cases reference is made to the two distinctive factors identified by Marques et al. (2018), "inclusiveness" and response to "need". Individuals often marginalized are participants in the four case study schemes (e.g., older adults and those with physical and/or mental health issues who, otherwise, are vulnerable to social and/or economic exclusion) and the schemes are driven by community needs, including the needs to support aging-in-place and to relieve loneliness, poverty and other forms of deprivation.

Identifying and framing these as "success cases" enables to draw on methods of implementation science to identify factors relevant as drivers, enablers, barriers, and success that influence the implementation process (Nilsen, 2015). Timelines, critical moments and turning points in the evolution of initiatives are also reviewed as well as the dynamic interplay between the initiative and its wider socio-material context. **Table 1** summarizes the four selected cases in relation to basic attributes. A detailed narrative description and analysis of each case is provided in the next section. Through their subsequent comparison, as 'best practice' cases, this inquiry seeks to develop insights about framing conditions and design principles for complementary community economies that could be used as testable hypotheses in next-stage formal experiments organized along the lines of Living Labs (Almirall and Wareham, 2011).

TABLE 1 | Characteristics of the 4 case studies.

	LL	G&TC	HERMAN	PIC
Rooted in time banking	✓	✓	✓	✓
Rural (R), Urban (U); Contiguous Site (CS), Multi-site (MS)	U, CS	U, MS	U, R, CS	U, R, MS
Start year	2015	2015	2012	1993
Targeted demographic group	×	✓	×	✓
Proprietary technology (PT) or off-the-shelf technology (OTST)	OTST	PT	PT	PT
Formal participation of local authority	✓	×	×	×
Immediate reward (IR) or delayed reward (DR)	IR	DR (plans for IR)	IR	IR
Inclusive relationships	✓	✓	✓	✓
Businesses involved	✓	×	✓	✓

CASE STUDIES ANALYSIS

This section presents a description and analysis of the four selected cases. The cases have been chosen as they all have historical roots in the time banking movement, recognizing the importance of attributing value to underutilized resources such as time. In time bank terminology, members earn hours benefitting the host organization in some capacity and in return, receive benefits in services provided by other time bank members or from the time bank itself. Another common feature of the four innovation cases is that they are all place-based and the identity of the community is strongly informing the type of initiatives and projects occurring in each scheme.

Lewisham Local

Lewisham, with a population of more than 300,000 people is located in South-East London. Lewisham Local (LL) is a scheme addressed to local needs and aspirations. As Lewisham has no borough-wide local trusts to invest money into meeting local needs and as local voluntary and community organizations have faced austerity-induced reductions in grant funding from central and local government, the need has been felt in Lewisham to

encourage place-based giving on the part of local individuals, businesses and enterprises to support community organizations and their initiatives. LL is a place-based scheme that was launched in 2009 on an inclusive definition of assets and capacities to contribute to Lewisham as a place and as a community. The basic principle is that all citizens of Lewisham, whether individuals or organizations, have something they can contribute either in cash or in kind, such as time, skills, tools, materials, facilities or spare capacities.

Since its inception, Lewisham Local has been led and developed by a cross-sector collaboration of Lewisham based organizations, including, Goldsmiths University of London, Rushey Green Time Bank (a 20 years old Lewisham based timebank), Voluntary Action Lewisham, Lewisham Education Arts Network, and South East London Chamber of Commerce. Lewisham Council is also a formal partner in the initiative with this being a unique feature in comparison to the three other cases reviewed in this paper. The collaborative meets every 2 months to plan the strategy for the scheme.

The collaborative was initially sponsored with seed funds by City Bridge Trust with the purpose to trial the development of a local giving scheme in Lewisham. Management support, governance, IT, and premises are donated in-kind by members of the collaborative steering group. Most of such assets are donated by Rushey Green Time Bank, which hosts Lewisham Local (LL). LL employs one part-time Development Lead, who reports to the Collaborative. Day-to-day management of the scheme is undertaken by the Rushey Green Time Bank. Having established a long-standing reputation among residents and been trusted by the Local Authority, Rushey Green Time Bank was a good strategic partner for Lewisham Local with whom it shares assets to address local needs. Rushey Green Time Bank is also well known in the local voluntary and community sector and has adapted to be an agile and forward-thinking organization.

So far, the scheme has had a diverse target audience, and the only common denominator among participants has been the geography of Lewisham; i.e., people or organizations living, working, studying or conducting operations in Lewisham. Keeping a wide definition of contribution has fostered a collective commitment to getting involved and strengthened the community. Currently, LL has a network of 300 businesses that offer discounts to 5,000 individuals who volunteer for local charities. The LL card is the means to recognize and reward acts of community participation and caring. Local businesses offer discounts on goods and services to holders of the LL card. In return by buying locally, the LL card increases local business activity. In addition, Lewisham community members consider the businesses are participating in the Lewisham local card as partners. A network of 180 charities and non-for-profit organizations sponsor initiatives that support vulnerable groups and organize environmental and social actions. One such example is the campaign to reduce single-use plastic waste. This issue grew in public consciousness following the increased publicity from the broadcasting of Blue Planet II toward the end of 2017. Lewisham Local responded quickly and called upon the network of community-minded businesses to develop free-water refill stations to help reduce single-use plastics.

LL has begun to collect data on the type of needs and interventions organized and delivered to better evaluate the scheme and efficiently identify the direct use of funds secured and needed.

Local Lewisham fosters creative connections through multi-stakeholders' participation and follows a simple rule of relevance which is that initiated projects ought to be place-based. Through time LL has considerably grown its local business network, and plans include strengthening the relationship with larger local employers.

Future priorities of Lewisham Local include:

- Developing a financial giving scheme to provide funds for local organizations who help to address issues such as poverty, especially poverty among ethnic minorities in Lewisham.
- Improving internal processes to gather data about local giving from individuals and businesses and how projects impact on community.
- Cultivate leadership by expanding the skills of community members and broadening local leadership.
- Procuring and deploying a technological platform able to reduce administrative and support service and asset exchanges seamlessly. Lewisham Local is the only case study site without a proprietary technology to support activities. Addressing this limitation will provide data to help leaders to understand what works best to achieve outcomes and why specific actions are effective.

Give&TakeCare CIC

Give&TakeCare Community Interest Company is a registered Company incorporated in the UK in 2015. The Give&TakeCare (G&TC) scheme arose as a disruptive solution to the care crisis in the UK. The aims that motivate G&TC are:

- Enable older adults to manage long-term conditions away from residential facilities and hospitalization for as long as possible;
- Motivate, educate, and empower citizens to "contribute" to their care and that of others in their communities given the unprecedented demographic changes;
- Recognize the key role of the voluntary sector in supporting older adults and carers and create an additional income for them given the reduction in legacy and local authorities' grants.
- Acknowledge and support informal carers who even if unskilled and unsupported still provide £132 billion worth of care for the year 2015.
- Provide a solution to the needs of those aging without children or immediate family

In February 2016, the company won a major UK funding competition launched by Innovate UK under the "Long term social care revolution". The contract allowed G&TC to be operational for 31 months until successful completion in August 2018. By then G&TC had established four sites either directly, or in collaboration with other social enterprise and charities in England, it had organized over 1500 hours of care and support for older adults and had involved around 500 partners as caregivers

and care recipients. G&TC has secured some continuation funds from the BetterCare fund in the Royal Borough of Windsor and Maidenhead, the Design Council and Unltd and a philanthropic grant. In addition, an interim agreement with Vista ltd in Leicester has allowed continuing to operate the Leicester site.

To achieve its aims G&TC offers a time banking scheme, allowing those who take part to create a Care Savings Account, accruing "care-credits" for their future. This feature, unique to G&TC among the four case study sites, can be considered akin to a pension; volunteers give up their time now and make provision for their future care. The incentive of the Care Savings Account is a vehicle to encourage people to care for each other now and create future resources for their own care outside of public funds. However, the delayed reward has been unsuccessful in attracting new individuals who were new to volunteering. The scheme offers more person-centered care for the older adults as care receivers and care givers are matched by their needs and skills and the support provided is in response to the care receivers' request. The scheme is also available to family carers who carry out the largest proportion of care in the UK.

A significant challenge was getting organizations to sign up to the scheme. This was particularly true of large national charities who were deemed vital in achieving the scale needed to produce a sustainable scheme. It was found that trustees/directors are traditionally suspicious of new schemes that can only provide short-term financial support as was the case with the G&TC subsidy. The national organizations approached by G&TC were also keen to avoid extra costs of administration, they were risk-averse and quite conservative in the model of income generation they implemented and wished to consider. In addition, many national charities have introduced paid services (gardening, befriending etc.) at varying costs (£15–20 per hour) and the implementation of a free befriending/domestic support service such as G&TC, represented a threat to their current modus operandi, despite their volume of income through paid services being quite small. Owing to the delays caused by trying to persuade national charities to engage with the scheme, G&TC decided to work in collaboration with local organizations rather than operate at a national level. This choice has inevitably impacted on overall scheme sustainability, which represents a differentiating point that sets G&TC apart from other time banks. While other time banks rely mainly on an IT platform to match people and on grants to support the operations, G&TC initially set out to be financially independent using a small administrative contribution from all care recipients in the scheme. The contributions amount to an annual membership fee of £5 plus £1 for each hour of care received. The total cash contributions are intended to support G&TC and the associated local organizations. The main purpose of the financial contribution was to cover the salary of a community coordinator, a key role given the potential vulnerability of older adults and the safeguarding needs this implies. Wide consultation with service users, their families, and charities were initiated by G&TC to gather feedback and informed the scheme and the services provided. The difference between traditional befriending services and G&TC were highlighted by the stakeholders and what seems to make G&TC distinct were:

- G&TC aims to be client-centered and identify a volunteer or a team that can support each client. Volunteers and care receivers are encouraged to exchange contact details as they are members of the same community and friendships have a great value for older adults who feel lonely.
- The befriending services offered by G&TC span a wider range including basic practical help, supporting older adults in daily activities they are no longer fully able to undertake (e.g., administrative help, walking pets, tidying up, car lifts).
- The intensity of the exchange between clients and volunteers is completely determined by the clients' needs, making the scheme flexible.

G&TC developed a bespoke IT platform which is used for matching care receivers and care givers and tracking care hours exchanged.

The potential scalability of G&TC depended on engagement and collaboration with associated organizations to offer the scheme to their existing members and to recruit additional members with the incentive of becoming partners to build a Care Savings Account. After the take up by charities and/or not-for-profit organizations (NFP's), the sustainability of the scheme depended on the hours of care exchanged in the system, which in turn is the measure of the adoption by end-users (givers and receivers). The uptake of G&TC is also an indicator of significant social attitudinal and behavioral change toward community self-reliance. Equally important is the ability to transform older adults from traditional care recipients to committed and socially engaged care givers, in whatever capacity possible.

Hull and East Riding Mutual Aid Network

The origins of the Hull and East Riding Mutual Aid Network (HERMAN) lie in the Time Bank Hull and East Riding (TBHER). TBHER was established with small-scale local funding in 2012 originally to provide mental health support services, but its scope broadened and, instead of focusing on one target group, took a whole community development approach with the strategic goal to reconnect and rebuild the whole community in Hull and East Riding using a mutual aid network (MAN) approach based on network members sharing resources and assets. The role of TBHER also broadened from a time bank to connecting different organizations locally to create synergies and maximize positive social impacts through asset sharing and joint working. There are mutual lines of influence here between TBHER and the International Mutual Aid Network Programme, which seeks to develop pilots in towns and cities around the world. Through TBHER and its efforts to develop HERMAN, Hull is the only European MAN pilot site within this network and one of only eight pilot sites globally.

TBHER has partnered with the University of Hull and the Webb Memorial Trust in an initiative that engages local people and organizations to help shape a shared and inclusive vision. The "#thehullwewant" initiative offers opportunities to voice aims, aspirations and concerns, but is also used to help change dominant perceptions, cultures and narratives from those of "scarcity" and "deficit" to "abundance" and from "passivity" to "activity" in realizing the hopes and vision for Hull. Part of the

cultural change is to support a shift in thinking about how needs can be satisfied and how opportunities can be created. MANs and Asset-Based Community Development (ABCD) approaches stand the usual solution pyramid on its head so that sharing sufficient assets is the first option and money is the last option when finding a way to address a need or solve a problem. Components of HERMAN include exchange mechanisms and platforms for sharing, borrowing/lending, swapping, time exchange, and skills exchange. These use currencies other than regular (fiat) money as units of account, means of exchange and facilities for credit and saving, such as time and local currencies.

TBHER/HERMAN is currently in receipt of a three-year Big Lottery grant (ca £70 K annually). The initiatives can draw, also, on the time, talents, and assets of their members. Working with established local organizations and being recognized as an important partner lends legitimacy and credibility to TBHER and HERMAN. TBHER no longer uses time banking software supplied through the national membership organization for UK time banks, TBUK, but has its own provider. It also makes use of open-access software and platforms to log members and assets. These arrangements have become necessary to provide TBHER with autonomy and agility of action. A research partner supports fund-raising, monitoring, evaluation, and reporting activities on a largely pro bono basis.

The main beneficiaries are the individual and organizational members of HERMAN and those who are served by HERMAN's members, such as the tenants of housing associations benefitting from exchanges and befriending services. TBHER/HERMAN reaches out especially to neighborhoods and areas that score highly on indicators of multi-deprivation and experience community tensions on age, ethnic and/or religious lines, and by placing "ambassadors" to work in neighborhoods and build links with local organizations, programs and projects. Ambassadors link up with the social prescribing networks so that primary health/care professionals can refer clients. The same applies to the local job center. TBHER/HERMAN has reached out to help integrate migrants and newcomers to Hull into the host community and to offer social and economic inclusion. An example of the process leading to identifying beneficiaries is the befriending scheme that TBHER/HERMAN has initiated with a local organizational member, Pickering-Ferens Homes (PFH), which provides housing for older people. This involved reaching out through the communications channels of PFH, TBHER/HERMAN, the local Older People's Partnership (a partnership of organizations and groups concerned for welfare of seniors) and health groups, such as the Freedom Stroke Group (comprising victims of strokes and their carers) to identify potential beneficiaries and to build a befriending network to combat loneliness and isolation. TBHER and its initiatives, such as HERMAN, are governed by a Board of Trustees.

TBHER was a recipient of a local authority grant in its establishment phase and formed a part of the community infrastructure for a secondary collaborative economy as part of the local anti-poverty strategy. TBHER is well-known to community and anchor organizations locally and is building a reputation as an umbrella organization with capacities for orchestrating innovative responses to local needs involving different organizations and approaches.

As a pilot MAN and the only such pilot in Europe, HERMAN is the most significant innovation of TBHER and is a work in progress that engages continuous innovation and learning. HERMAN differs from other ABCD initiatives because it seeks to attract a diverse range of individuals and organizations to participate in the local collaborative economy it seeks to create and capitalizes on the diversity and complementarity among their assets and needs. The scope for creativity lies in addressing different challenges together rather than in silos. It also proposes to use advances in ICT as enabling technology to organize exchanges and lower transaction and safeguarding costs.

The main factor in continuity is that TBHER/HERMAN sees social innovation as a process that addresses ever-changing challenges in an evolving context. It seeks to support the emergence of partnerships among stakeholders in relation to different challenges that the community prioritizes and relationships among these rather than promoting a single tool or approach or addressing a single target group or domain of need.

TBHER has learnt that time banking as a stand-alone approach is too limited and too static and that there cannot be universal solutions to ever-evolving challenges, especially when these are multi-faceted and many of these facets are specific to local conditions and contexts. The need instead is to build capacities and processes within the community to identify priority challenges and enable these to be addressed by stakeholders with local knowledge using local resources. The next steps will be to introduce digital currency to the mix of community currencies, test different models for managing the currency to maximize its potential to leverage engagement and positive social impact, and test models for governing and valorizing the data generated.

Partners in Care

Partners in Care (PIC) is a time exchange community that offers services to Maryland (US) older adults and individuals with disabilities. It is the longest running operation of the four case study sites, having begun in 1993. It has grown to a membership of 3200 people that includes PIC staff, seniors of all ages, their family members and friends, and other community members contributing to the time exchange and the organization. PIC has a number of special programs including "Repairs with Care," which provides handyman support; "Ride Partners," which provides transportation to older adults with members using their own cars and "Member Care," which provides personalized support such as home visits, help with paperwork, light housekeeping, pet care, grocery shopping, and small social gatherings. Service exchanges and specialized programs improve the care of current older adults. Providers of service earn hours that later can be used for their care in the future, supplementing the nation's social security payments provided to seniors. PIC provides opportunities for everyone to benefit and contribute to older adults' care regardless of income or job status. Membership in PIC is voluntary and not formally linked to national social security systems (see www.partnersincare.org; Weaver et al., in press).

The evolution of PIC as an organization involved many ups and downs with resilience and grit characterizing the three founders and its dedicated time bankers. Early on it was named the Service Credit Banking program (for Seniors) and came under the auspices of a local hospital where it was located. This provided instant visibility and credibility for the fledgling organization, enabling it to attract small grants and donations as well as in-kind services such as marketing and promotion. Early time bankers signed on to offer rides with no promise to be reimbursed for expenses such as petrol costs. After 4 years, the partnership with the hospital ended with only 30 days-notice. PIC members responded to the challenge: a new location was identified and funding was secured to maintain operations. Nonetheless, this experience was profound. In order to maintain levels of self-sufficiency and sustainability, PIC set forth an operating principle to seek out many and various small grant awards to fill service gaps identified by older adults and fellow time bankers with no expectations of sponsors to carry the full burden of project funding or to fund projects indefinitely. In other words, PIC is run with older adults as labor and reciprocal transactions. It decided not to become dependent on grants or major support from any one funder. Further, PIC has a policy of maintaining the share of grant funding (philanthropic and statutory) in the overall mix of organizational income at or below 40 per cent. This principle has served PIC well over its 25 years of operation (Hogan, 2017).

PIC is currently supported by a combination of government and foundation grants. In addition, PIC has developed partnerships with other NGOs to provide valuable services to older adults. Over time, for example, PIC developed a solid relationship with the Anne Arundel Volunteer Center (AAVC). AAVC pairs volunteers with local NGOs, so their respective organizational missions complemented each other. PIC became a major source of AAVC referrals. This kind of mutual working relationship extended to dealings with statutory bodies.

In addition, PIC is able to maintain financial sustainability in part because it established a social enterprise that uses the sweat equity of its time banks members. The PIC boutique, is staffed primarily by time bank members who earn hours supporting the business. The boutique provides income close to US $500K annually (about 35% of total agency revenue) in support of PIC programming for older adults in the community. The time bank owns the profit-making boutique. PIC trains all staff who work in and who support the boutique.

PIC is faced with new challenges as the organization continues to evolve. There is growing recognition that as demands for services grow, new and different recruitment efforts need to occur. PIC is exploring expanding its time bank base to include younger adult millennials and active older adults. The need for a greater evidence-base of the impacts of its model is increasing as PIC seeks partnerships with the local and regional hospital-based systems interested in the PIC model to expedite hospital discharges and prevent unnecessary emergency room or other acute care needs. These kinds of partnerships require a greater focus on outcomes and perhaps recruiting a new kind of volunteer who commits to a set schedule of tasks to be performed as and when these are needed.

DISCUSSION: THE EMERGING CHARACTERISTICS OF AN ECOSYSTEM FOR SOCIAL INNOVATION FOR AGING-IN-PLACE

In 2007 colleagues at Philips Research Europe in Eindhoven who initiated the carelab, a residential assistive module to monitor and support older adults, stated that, given the exceedingly fast growth of the 60+ demographic segment, there would always be a lack of carers. This was the premise justifying their investment in technology to support later life (de Ruyter and Pelgrim, 2007). While it is only sensible for societies to consider how the deployment of technology may support aging, starting from making technology more inclusive, the fulfillment of some human needs by technology is hardly imaginable, such as the need for personal identity or to feel relevant and valued as a member of society. In the exploration and discovery of how to deal with such unprecedented change as that represented by population aging, social innovation and ecosystems capable of fostering social innovation might make pivotal contributions. In the following discussion, four cornerstones of an ecosystem for social innovation for aging-in-place are identified. These are drawn from similarities and differences highlighted by the case studies and are discussed as factors relevant to the relative success of the cases as social innovation initiatives that are contributing to strengthening communities and social systems. In order to simplify the discussion, the four cornerstones are considered in artificial isolation as constituent elements of what, actually, are complex and interconnected ecosystems. A cautious approach is adopted in describing the cases as 'relatively successful' because, even if all of the studied schemes have sustained their operations for longer than most time banks, in absolute terms the operating periods involved are from 4 to 25 years. Three of the four organizations considered received seed funds from local bodies. G&TC received funds from central (national) sources, which came with a mandate to initiate nationwide operations. However, G&TC organizers soon realized that a place-based strategy with almost self-selected communities was the only viable option. The four cases help illustrate how a systemic solution to community cohesion may as well be a sustainable strategy to the aging tsunami and the considerations presented in this section start to sketch "communities" as self-organizing and self-caring organisms. **Figure 1** visualizes the relationships between the four components considered essential in this paper for the creation over time of ongoing experiments in care-in-community and care-by-community. The axes represent the timeline of social innovation and the role of central and local government over time. The blue curve traces the extent of co-creation and co-delivery, set to grow over time. While recognizing that professionalization (e.g., the intermediary role) is present from an early stage in some cases, it has been learnt that monitoring activities and evaluating social impacts are complex administrative tasks that a digital currency infrastructure can help to support and simplify. In **Figure 1** the introduction of digital infrastructure coincides with when the level and complexity of activities make it no

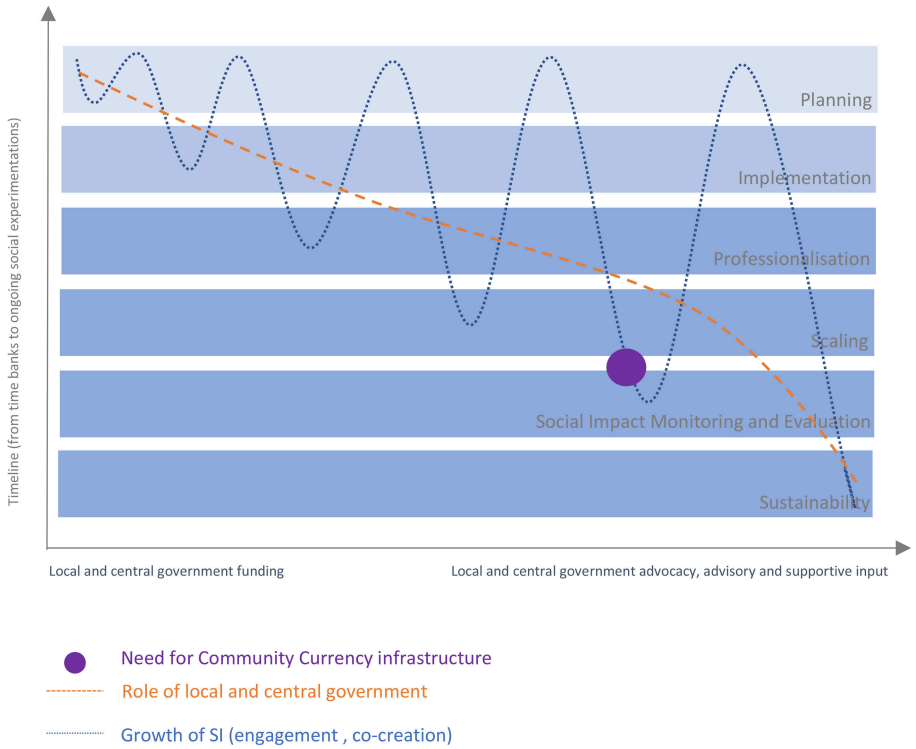

FIGURE 1 | An integrative framework for the development of Social Innovation.

longer practical for monitoring, coordination and evaluation to be handled manually. **Figure 1** also visualizes the dual and shifting role that local and central government can play initially as investors in establishing schemes and infrastructures and subsequently in supporting sustainability and scaling of the social innovation, including by providing continuing income as service commissioners.

Model of Value Creation

The inadequacy of the linear model of innovation has emerged under the added pressure of unprecedented global competition and compelling societal and environmental changes (Freire and Sangiorgi, 2010). In the last 20 years the single value creation model has been challenged and has evolved to encompass open innovation models that feature *Virtuous Ecosystem Participation* (Herskovits et al., 2013, p. 636); an innovative network of partnerships aims to create value (e.g., innovation) even through collaborations with organizations traditionally perceived as competitors. Organizations have sought Virtuous Ecosystem Participation to include talents not strictly related to their core area of business and in so doing achieved multiple streams of value creation and organizational ambidexterity, for example, the capacity to be agile and respond with a continuous programme of innovation to the changing surrounding (Ortt and van der Duin, 2008).

Albeit with some delays, social innovators have also embraced the changes just described but under different contextual pressures than that of businesses, for example, the frustration created by diminished public budgets, the growing isolations of certain social groups, the decline in civic participation and the void determined by underdeveloped public policy. The four case studies described, starting from time banking, have applied a non-linear model of value creation that recognize undervalued assets. By doing so, these assets have been legitimized, empowering community members who are cash poor or unable to contribute through financial means to access other means of participation.

The Value Constellation Model (Normann and Ramirez, 1993) has been held as a possible blueprint for a sustainable framework able to foster and maintain environments of multiple non-linear relationships. A key requirement of such a model is that partnerships in the forms of co-design, co-production and co-creation underpin the sustainability of the proposition (Cottan and Leadbeater, 2004; Murray et al., 2006).

Although at a different stage of the maturity cycle, all four reviewed case studies have reduced the gap between innovation and implementation by adopting a co-creation and co-delivery model that has enabled the stakeholders to design, deliver, and reflect iteratively on each strand of work, with the ability to calibrate, reorient and dissolve activities no longer fit for purpose. This agility resembles that associated with "Living Labs," approaches used in contexts that are complex, evolving, uncertain (and that, therefore, entail risk that novel solutions will fail), which involve stakeholders from the start and throughout the innovation cycle and that experiment with solutions in context and in real time, learning about these and refining promising approaches (Almirall and Wareham, 2008; Galli, 2010). Living labs lend themselves to be a useful contemporary methodology in

design for social change as they frame the intense relational work undertaken by emerging social enterprises needed to support aging-in-place, empower local intermediaries such as the social actors who are described in the analyzed cases, and allow for data collection and iterative design interventions in real time. The combination of Living Lab methodology and non-linear models of value creation may represent the theoretical foundation for the development of social innovation models for aging as they cope with the uncertainty of changing local and community contexts and with the need to identify alternative and supplemental value-adding assets held already within local communities that can be mobilized, developed and deployed to address local challenges (e.g., the spare capacities of local people and organizations). The diversity of value-adding resources has been acknowledged in HERMAN as well as in LL where focusing on straightforward reciprocal exchanges was replaced by a more complex and inclusive groups of active citizens, organizations and their assets, exploiting the notion that diverse talents and resources can all contribute. Conversely, PIC and G&TC followed a more narrowed-down initial approach to exchanges, for example to focus on the targeted aging population and its direct care givers.

Co-creation

Participatory processes of asset creation are another major cross-cutting theme that guides the development of social economies. Theories of co-production inform time banking and other social economies. Co-production is an asset-based approach that rewards contributions and alters the notion of work within human service programs and communities (Cahn, 2004). Its primary aim within social services programs is to enhance service participant engagement, to sustain the engagement while enrolled and to prepare participants to succeed post-discharge. By intentionally involving participants in activities where they can contribute and use their assets, and by encouraging, recognizing and rewarding their accomplishments, participants gain new life and work skills (Marks, 2012) and move from being passive recipients of externally-provided welfare benefits to becoming active and productive participants in locally-generated welfare creation (Weaver and MacDonald, 2018). There is some limited evidence in the health care area suggesting improvements to patient outcomes when patients, including older adults, partner with medical professionals in their own health care (Kyriacou and Blech, 2003; Lasker et al., 2006). Simon and Boyle (2008) have argued that co-production offers an approach to address the emerging crises in health care and adult social care. An intervention framework has been developed, which includes practices and strategies to help guide practitioners on methods of empowering service participants (Marks, 2012).

The potential impact of co-production strategies on organizational and community development is less conceptualized and understood. Time exchanges that tap the unused labor of community members to support and grow organizations (e.g., citizen-organizational co-production) and improve communities (e.g., citizen-community co-production) are recognized as important venues for contributions (Marks, 2012). Time banking principles (e.g., people as assets, reciprocity, moneyless exchange) are also identified as holding a potential to further ABCD by mobilizing communities' own assets and resources (McKnight and Kretzmann, 1996). This holds true whether these principles are operationalized through time banking or, given that time banking on a purist model is difficult to sustain because of high transaction costs, these are taken up as elements of novel solutions that only reflect this time banking heritage, such as through broad-scope complementary community economies enabled by digital community currencies.

Case examples studied in this paper begin to shed light on processes and tools that could extend the reach of co-production to develop and improve communities and their collective response to critical challenges. Highlighted projects were often faced with few or no resources to invest in addressing local needs (e.g., LL and PIC). This created the need to attract local giving in the form of small grants, in-kind contributions, and donations of time, skills and other resources by local organizational partners. With LL, management support, governance, IT, and premises were donated in-kind by organizational members of the collaborative steering group. PIC also relied on donations from strategic partners including facilities. Strategic partners also provided social capital to PIC in the form of introductions to potential funders as well as free publicity which enabled PIC to establish its reputation in the community. Community members also contributed their time and energy supporting the organization, sometimes at own expense. Within LL, sub-groups of staff from organizational partners as well as community members were formed to lead specific initiatives without a fixed process or set of actions governing their contribution. In essence, community members were "co-owners" of the organization, sharing in benefits as well as responding to challenges. Two central premises framed these relationships and exchanges: the flexible and inclusive approach to asset identification and deployment enabled everyone to be contributors, while reciprocity allowed individual and organizational contributors also to receive benefits whether immediately or deferred. In the LL case, a virtuous cycle of access to more resources and improved understanding of community needs and aspirations has been initiated.

Lastly, the highlighted projects are in a position to move co-creation activities to a new level. For PIC new partnerships are in development, such as with local health centers. This could lead to new revenue-generating activities, for example expediting discharges from hospital, helping lower re-admission rates and maintaining good health through preventive measures. This is leading to the definition of a new kind of volunteer to support aging-in-place: volunteers that are specifically trained and available to work with older people and the medical professionals handling their cases.

Currency Infrastructure

All the analyzed cases recognize the importance of creating opportunities for novel forms of transaction mediated by currencies other than regular (fiat) money. To varying degrees, they represent experiments in developing community (non-money) economies that operate alongside and as complements to the market (money) economy by supporting transactions aimed primarily at delivering social value. Local community

economies can provide an overarching mechanism for building robust, inclusive and resilient communities because they provide opportunities for participation by all citizens and for contributions to be made in kind to own and community wellbeing and to addressing priority social challenges. They mobilize locally-available assets and spare capacities that would otherwise go to waste and put these to productive use to address the challenges communities face and to deliver positive social value.

Each of the case studies has identified one or more infrastructural elements—building blocks—for developing secondary social economies. Their innovations respond to the challenges they have faced. One such challenge is for new ways to stimulate citizen participation through schemes that recognize and reward contributions to own and community wellbeing through immediate and useful benefits, rather than only deferred and corresponding benefits. Just as there must be opportunities to earn credits, there must be opportunities to redeem credits. LL experiments with a solution that issues a membership card to those who give time to community projects and has developed a network of local businesses willing to offer discounts to card holders. A "spend" network is an element of secondary economy infrastructure that can leverage more local assets and spare capacities into productive use, including those of local businesses and anchor organizations, offering recognition to those who contribute to the community and rewarding them for their contributions.

There is also a need for a community currency that is not tied to the value of any regular fiat currency but can be used locally as a medium of exchange, a token of value and a unit of account. Traditionally, time banks use time as a community currency and hours of service as currency units. Traditionally, they use time banking software both as a platform for organizing service exchanges and for providing accounting functions. The case study initiatives have found these traditional arrangements inadequate on several counts. Time is less suitable as a unit of exchange and fixed values of time can be less appropriate in contexts where the concern is for outcomes and their importance and when transactions extend beyond only service exchanges to include goods and/or discounts on everyday purchases. Organizers at LL note that it is easier to attract citizens to give time to environmental projects than to care-in-community efforts. This suggests that more flexible arrangements involving negotiated values for contributions to the community might be needed—more of a "market" for "community credits"—rather than assuming fixed values for time inputs.

The case studies are all involved in experiments with innovative solutions they seek to develop within the framework of a community economy. They, therefore, all recognize the need for monitoring and evaluation as well as openness and transparency of data and information as a basis for (social) learning. These are needed to find what works and what does not and to fine tune the designs of promising models. A challenge is that when the community economy has a scope beyond that of a time bank, time banking software is no longer a sufficient mechanism for data collection. For this reason, in two of the cases, HERMAN and LL, there is recognition of the need for a digital community currency, so that the community economy and its development can be modeled, transactions can be tracked, and the behaviors of community economy participants better understood.

Another need is for an interface between the non-money community economy and the regular money economy in order to enable community organizations to secure an income stream to cover the money costs they face. While not necessarily large in absolute terms, these are nevertheless crucial to cover if the initiatives are to be sustained. This issue interfaces with the need for a digital community currency since digitization offers routes to income streams. Service commissioners may be willing to pay to secure wanted outcomes but need verification of performance and delivery. Digital currency provides a way to track transactions and verify activities. In the process, it also provides a degree of safeguarding since digitization provides a record of the transaction, what it involves, the parties, the time, and the place. The more able schemes are to assure commissioners and funders that targeted outcomes are being achieved, the more fundable the schemes become.

Furthermore, the data gathered by a digital currency as it moves from one electronic wallet/account to another constitutes a new community-generated asset, since the data can be valorized as economic and social intelligence and as a valuable support to business and individual stakeholders, for example, in discharging and reporting corporate social responsibility and verifying corporate community engagement. There is a potential for big data applications, for example, in support of research into the health and well-being benefits of active citizenship. At the individual level, transaction records can contribute to CVs, demonstrating community service and experience. Business plans for valorizing data and generating income to return to the community organizations can be part of their sustainability strategies.

Distributed ledgers offer new ways to secure, store, verify and query transaction data and to avoid escalating server costs as the number of transactions in a community economy grows. For this reason, block-chain solutions may offer the best technology platform for the development of digital community currencies, avoiding the costs of cryptocurrency solutions but benefitting from the same distributed ledger, horizontal expansion, and flexible development possibilities.

The Role and Participation of Government

Weaver and Marks (2017) identified three distinct pathways to financial growth and sustainability among studied social innovations. These include: an external funding pathway that involves seeking investment or income from establishment actors, such as service commissioners who provide funding but set conditions on this; an autonomous funding pathway through which a social innovation organization develops its own income stream to self-finance its activities and fund continuity and growth, typically through related social enterprise activity; and an embedded pathway whereby the social innovation organization partners with an existing organization and receives financial support from the larger (host) organization in return for helping it deliver its mission. Each pathway informs relationships

with statutory authorities; for example, the external funding pathway necessitates that social innovation organizations accept a role of traditional government-contracted service provider with requirements to meet certain performance and accountability standards and, to a certain extent, to adapt operations to address statutorily-driven goals and objectives. This can result in a loss of autonomy and mission drift that social innovation organizations and their members may or may not be willing to accept, with implications for external and internal governance of initiatives (Weaver and Marks, 2017).

Interestingly, the four projects studied over time embraced aspects of autonomous funding with some embracing it as the dominant financing pathway. Projects required some funding to cover base-level operating expenses, and some sought this funding from statutory authorities or private sources. However, because traditional statutory funding has become increasingly uncertain or unsustainable, many of the projects sought to diversify funding and limit dependencies by working to generate their own income stream to support their operation. Examples ranged from the social enterprise boutique (PIC) to annual membership and activity fees paid by those receiving care services (G&TC). Interestingly, studies show that embracing the autonomous funding pathway is a common feature of time banks that have sustained over time (Weaver and Marks, 2017).

In some cases, the role of local and central government in supporting social innovation changed with less reliance on public funding. With PIC, for example, government entities were asked to provide entrée to private funders and to help legitimize PIC when it first started out. PIC also brought funding opportunities to government agencies for consideration, offering the in-kind services match as an enticement to partner. Similarly, with LL, government entities viewed LL as a "go-to" organization, seeking creative responses to difficult challenges with or without a direct offer of funding. With G&TC, the ability to attract significant numbers of users paying annual and activity-based fees makes them an attractive partner, pulling their own weight financially. It appears that with government entities, reciprocity often guided the relationship with the case study organizations. The ability of PIC to respond quickly to transport needs, for example, contributed to government officials providing the organizations with early notification of government funding for vans to transport non-ambulatory seniors. LL's responsiveness to needs helped secure a special relationship with other charities and local authorities.

Although social innovation organizations tend to choose a dominant funding pathway to achieve levels of sustainability, financial needs may vary over time and, with that, funding relations with traditional government funders may change. As social innovations mature, there is a pull to expand and scale operations which may require the building of organizational, managerial and technology capacities (Weaver et al., 2017). Recent emphasis on social impact investing, including using social impact bonds where private investors provide up-front funding for innovations and are reimbursed contingent on outcome attainment may provide new funding opportunities for social innovations if performance tracking systems are put in place (Marks and Weaver, 2017). Social innovation organizations may position themselves to compete for commissions as service providers, but in doing so need to evaluate the risk/rewards of participating in terms of mission, changing expectations of volunteers and relationship dynamics with statutory partners (Weaver et al., 2017).

Creating Living Labs for Aging-in-Place

Systemic challenges facing the aging population require novel responses. The framework delineated here for experimenting and studying proposed solutions is one grounded in social innovation and specifically in community-led schemes, for example, grassroots activities that have the attribute to be place-based and largely bottom-up with a large and diverse group of local stakeholders. The proposed framework is a Living Lab for Aging-in-Place that serves as a methodology for experimentation and data collection as well as a social foundry for innovative services and products in support of aging. Through the review of the four cases it was learnt that a national strategy to implement this type of innovation is inadequate and does not match with local community identities (c.f. G&TC), that co-production had to include all social and demographic groups to generate multiple networks of value (c.f. HERMAN), that the involvement of businesses is fundamental in creating spending networks that enable immediate rewards for active citizens growing their participation (c.f. LL) and that reliance on philanthropic and action research grants is not sufficient and creative forms of co-finance are necessary (c.f. G&TC, PIC).

In essence the Living Lab for Aging-in-Place ought to include a complementary economy that enables the social and economic participation of those who are traditionally excluded due to lack of traditional currency and perceived societal irrelevance, for example aging and disabled individuals perceived by society at large as a financial drain and as unable to contribute. The development of the Living Lab for Aging-in-Place is underpinned by a digital infrastructure which serves the ability to track exchanges and collect and query data in real time. The functional modules of the framework are highlighted below:

a. An open source digital infrastructure that is available to each Living Lab and that can be adapted to local needs. The open source of the digital solution will also enhance data integration if adopted in several Living Labs and will reduce the costs for each community as it will not require licensing. A distributed ledger has been identified as a suitable option as it keeps the cost of expansion to a minimum and enables multiple and distributed back up of the data to safeguard system integrity.
b. Digital community currency that must be secure enough to enable trust in the transactions without overwhelming the users. The digital community currency ought to have no direct exchange rate with traditional currency in order to avoid the creation of illegal secondary markets and to reduce the perception of reward as a form of traditional payment.
c. Community observatory function to inform the design and delivery of more inclusive products and services. This will attract the attention and interest of businesses and entrepreneurs willing to enhance their understanding of the

aging population within the context they are part of to gather user requirements and pinpoint opportunities that may lead to novel products and services. Within the community observatory function, older adults would be considered as expert users for existing products and expert advisors when generating novel concepts. This function pivots around the transformation of aging from a condition imposing costs and symbolizing a deteriorating or decaying society to one representing assets and opportunities.

d. Co-design and co-delivery methodology to create consensus around the strategic priorities of the place-based community and co-produce joined-up, inter-departmental and inter-organizational responses.
e. The role of a community intermediary capable of professional coordination of grassroots local projects delivered against the codesigned community strategy and delivering added value to participants (givers and recipients). The intervention of the intermediary facilitates inter-departmental and inter-organizational synergies in tackling complex societal challenges as demonstrated in previous Living Lab experimentations (Almirall and Wareham, 2008). The intermediary also helps make community activities investment-ready; e.g., for Social Investment Bonds (SIBs) that have proved successful in addressing societal challenges in other domains, such as young offenders (Dermine, 2014).
f. The participation of local businesses and organizations with spare capacities in providing opportunities to spend earned community currency locally, thereby encouraging active citizenship.
g. Continuous interface with local and central policymakers to provide the evidence base for understanding and modeling impacts of social policy interventions and innovations.
h. A new language in social innovation research where real communities are involved in capturing and communicating an emerging semantic spectrum. This may enable the emerging relationships between the community and active citizenship to be more clearly specified, for example, the idea of being commissioned rather than contracted to co-deliver services and for participation to be recognized and rewarded but not recompensed by a salary paid in fiat currency.

The list of the above components of a Living Lab for Aging-in-Place has been informed by primary and secondary research and represents the foundations upon which to build an ambitious programme of experimentation and research. This requires forward-looking, agile and untraditionally risk-taking communities, local authorities, funding bodies, and businesses. Current paradigms for seeking and implementing solutions have not been able to respond effectively to the challenge of transformative change that an aging population demonstrates is required. The Living Lab for Aging-in-Place is a methodology as well as a set of research assumptions that ought to be trialed in an agile environment and with the compassionate understanding that live experimentations can and should be amended as more evidence is collected about the needs and aspirations of the aging population and communities at large.

DATA AVAILABILITY

The datasets generated for this study are available on request to the corresponding author.

AUTHOR CONTRIBUTIONS

All authors contributed to the paper in its entirety. Specifically, GS developed the abstract and introduction, wrote the LL and G&TC case studies, contributed to the methodology section and the section on the value model. She also led the conclusion section. PW led on the methodology and social innovation sections. He wrote the HERMAN case study and the section on currency infrastructure. MM wrote the PIC case study and the sections on co-creation and the roles of government. CV wrote the section on current social care models.

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REFERENCES

Age UK (2016). *Age UK Briefing – Discharging Older People From Hospitals*. Available online at: https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/care--support/age_uk_discharge_from_hospital_briefing_june_2016.pdf (accessed October 24, 2018).

Almirall, E., and Wareham, J. (2011). Living Labs: arbiters of mid- and ground- level innovation. *Technol. Anal. Strat. Manag.* 23, 87–102. doi: 10.1080/09537325.2011.537110

Almirall, M., and Wareham, J. (2008). Living Labs and open innovation: roles and applicability. *Electron. J. Virtual Organ. Netw.* 10, 21–46. Available online at: http://www.esadeknowledge.com/view/living-labs-and-open-innovation-roles-and-applicability-151918 (accessed March 20, 2019).

Brinkerhoff, R. (2003). *The Success Case Method: Find Out Quickly What's Working and What's Not*. San Francisco, CA: Berret-Koehler.

Cahn, E. (2004). *No More Throwaway People, 2nd Edn.* Washington, DC: Essential Books.

Cottan, H., and Leadbeater, C. (2004). *Health: Co-Creating Services*. London: Design Council.

de Ruyter, B., and Pelgrim, E. (2007). Ambient Assisted Living research in carelab. *ACM Interact.* 14, 30–33. doi: 10.1145/1273961.1273981

Dermine, T. (2014). "Establishing social impact bonds in continental europe," in *M-RCBG Associate Working Paper Series*, 26:1–56. Harvard Kennedy School. Available online at: https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/dermine_final.pdf (accessed February 9, 2019).

Drakeford, M., and Gregory, L. (2010). Transforming time: a tool for youth justice. *Youth Justice* 10, 143–156. doi: 10.1177/1473225410369293

European Commission (2015). *Innovation Partnership on Active and Healthy Ageing European Scaling up Strategy in Active and Healthy Ageing.* Available online at: https://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/scaling_up_strategy.pdf (accessed February 9, 2019).

Freire, K., and Sangiorgi, D. (2010). "Service design and healthcare innovation: from consumption to co-production to co-creation," in *Proceedings of 2nd Service Design and Service Innovation conference, ServDes.2010. Linköping Electronic Conference Proceedings, 60.* (Linköping: Linköping University Electronic Press), 39–49.

Full Fact (2017). *Adult Social Care in England*. Available online at: https://fullfact.org/health/adult-social-care-england/ (accessed October 24, 2018).

Galli, L. (2010). *In Memoriam: William Mitchell.* Available online at: http://www.lgalli.it/in-memoriam-william-mitchell (accessed October 24, 2018).

Gov.UK (2018). *A Connected Society: A Strategy for Tackling Loneliness.* Policy Paper. Available online at: https://www.gov.uk/government/publications/a-connected-society-a-strategy-for-tackling-loneliness (accessed October 24, 2018).

Haxeltine, A., Kemp, R., Cozan, S., Ruijsink, S., Backhaus, J., Avelino, F., et al. (2017). *TRANSIT Brief 3: How Social Innovation Leads to Transformative Change: Towards a Theory of Transformative Social Innovation*. TRANSIT: EU SSH.2013.3.2-1 Grant agreement no: 613169. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/255%20theory%20brief%20web%20single%20pages%20final%20version.pdf (accessed February 9, 2019).

Haxeltine, A., Kemp, R., Dumitru, A., Avelino, F., Pel, B., and Wittmayer, J. (2015). *A First Prototype of TSI Theory*. TRANSIT Deliverable 3.2, TRANSIT: EU SSH.2013.3.2-1 Grant agreement no: 613169. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/161%20TRANSIT%20WP3%20deliverable%20D3.2%20of%2030%2004%202015%20v1.1(1).pdf (accessed March 20, 2019).

Health Foundation (2018). *Social Care Funding Options: How Much and Where From*. Available online at: https://www.health.org.uk/publication/social-care-funding-options (accessed October 24, 2018).

Herskovits, R., Grijalbo, M., and Tafur, J. (2013). Understanding the main drivers of value creation in an open innovation program. *Inter. Entrep. Manag. J.* 9, 631–640. doi: 10.1007/s11365-013-0267-2

Hogan, L. (2017). *More Than a Ride: How a Time Exchange With a Social Enterprise Created an Extraordinary Network of Care for Older Adults*. San Fernando, CA: Partners in Care.

Kemp, R., Strasser, T., Davidson, D., Avelino, F., Pel, B., Dumitru, A., et al. (2016). "The humanization of the economy through social innovation", in *Paper for SPRU 50th Anniversary Conference and the IST2016 Conference*. Available online at: http://kemp.unu-merit.nl/docs/The%20humanization%20of%20the%20economy%20-%20Kemp%20et%20al%20for%20SPRU%20conference%202016.pdf (accessed February 9, 2019).

Kingston, A., Robinson, L., Booth, H., Knapp, M., and Jagger, C. (2018). For the MODEM project: projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model. *Age Ageing*. 47, 374–380. doi: 10.1093/ageing/afx201

Kyriacou, C., and Blech, M. (2003). *An Evaluation of the Elderplan's Time Dollar Model*. Brooklyn, NY: Metropolitan Jewish Health System.

Lasker, J., Baldasari, L., Bealer, T., Kramer, E., Kratzer, Z., Mandeville, R., et al. (2006). *Building Community Ties and Individual Well-Being: A Case Study of the Community Exchange Organization*. Unpublished manuscript, Lehigh University.

Lasker, J., Collom, E., Bealer, T., Niclaus, E., Keefe, J. Y., Kratzer, Z., et al. (2011). Time banking and health: the role of a community currency organization in enhancing well-being. *Health Promot. Pract.* 12, 102–115. doi: 10.1177/1524839909353022

Marks, M. B. (2012). Time banking service exchange systems: A review of the research and policy and practice implications in support of youth in transition. *Child. Youth Serv. Rev.* 34, 1230–1236. doi: 10.1016/j.childyouth.2012.02.017

Marks, M. B., and Weaver, P. M. (2017). "Are social impact bonds a viable resource for social innovations?" in *Discussion Paper Prepared for a TRANSIT Resourcing and Monitoring Workshop*, University of Maastricht. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/266%20TRANSIT_WorkingPaper%2013_SocialImpactBonds-pmw.pdf (accessed February 9, 2019).

Marques, P., Morgan, K., and Richardson, R. (2018). Social innovation in question: the theoretical and practical implications of a contested concept. *Environ. Plan. C Politics Space* 36, 381–400. doi: 10.1177/2399654417717986

McKnight, J., and Kretzmann, J. (1996). *Mapping Community Capacity*. Center for Urban Affairs and Policy Research, Northwestern University. Evanston, IL. Available online at: https://mn.gov/mnddc/parallels2/pdf/90s/90/90-MCC-McKnight_Kretzmann.pdf (accessed February 9, 2019).

Murphy, N. F. (2016). "Nine guiding principles to help youth overcome homelessness: A principles-focused developmental evaluation," in *Developmental Evaluation Exemplars,* eds M. Queen-Patton, K. McKegg, and N. Wehipeihana (New York, NY: The Guilford Press), 63–83.

Murray, R., Burns, C., Vanstone, C., and Winhall, J. (2006). *RED Report 01: Open Health*. London: Design Council.

Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implement. Sci.* 2015 10:53. doi: 10.1186/s13012-015-0242-0

Normann, R., and Ramirez, R. (1993). *From Value Chain to Value Constellation: Designing Interactive Strategy.* Brighton, MA: Harvard Business Review.

Office of National Statistics (2016a). *Living longer - How Our Population is Changing and Why it Matters*. Available online at: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2018-08-13 (accessed October 24, 2018).

Office of National Statistics (2016b). "Home produced "Adultcare" services," in *Compendium Household Satellite Accounts: 2005 to 2014.* Available online at: https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/compendium/householdsatelliteaccounts/2005to2014/chapter3homeproducedadultcareservices#gross-value-added-of-informal-adult-care (accessed October 24, 2018).

Office of National Statistics (2018). *Loneliness - What Characteristics and Circumstances are Associated With Feeling Lonely*? Available online at: https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/lonelinesswhatcharacteristicsandcircumstancesareassociatedwithfeelinglonely/2018-04-10 (accessed October 24, 2018).

Ortt, J. R., and van der Duin, P. A. (2008). The evolution of innovation management towards contextual innovation. *Eur. J. Innov. Manag.* 11, 522–538. doi: 10.1108/14601060810911147

Shih, P. C., Bellotti, V., Han, K., and Carroll, J. M. (2015). "Unequal time for unequal value: implications of differing motivations for participation in timebanking," in *CHI 15 Proceedings Of the 33rd Annual ACM Conference on Human Factors in Computing Systems: 1075-1084*, April 18-23, 2015, Seoul.

Simon, M., and Boyle, D. (2008). *Foreword, The New Wealth of Time: How Time Banking Helps People Build Better Public Services.* New Economics Foundation, 1–68. Available online at: https://nwi.pdx.edu/webinars/Webinar13-materials1.pdf (accessed February 9, 2019).

Skropke, C. (2016). *Timebanking to Meet Integration Challenges of Asylum Seekers, Refugees and Migrants in the Context of Urban Poverty in the UK: a Case Study*. Thesis submitted in fulfillment of the requirements for the degree of Master of Science, ICIS, Maastricht University.

Stake, R. (2000). *The Art of Case Study Research*. Thousand Oaks, CA: SAGE Publications.

Victor, C., Mansfield, L., Kay, T., Daykin, N., Lane, J., Grigsby Duffy, L., et al. (2018). *An Overview of Reviews: the Effectiveness of Interventions to Address Loneliness at all Stages of the Life-Course*. Available online at: https://whatworkswellbeing.org/wp/wp-content/uploads/woocommerce_uploads/2018/10/Full-report-Tackling-loneliness-Oct-2018.pdf (accessed October 24, 2018).

Weaver, P., Dumitru, A., Lema-Blanco, I., and Garcia-Mira, R. (2015), *Transformative Social Innovation Narrative: Timebanking.* TRANSIT: EU SSH.2013.3.2-1 Grant agreement no: 613169, 31 March 2015. Available online

at: http://www.transitsocialinnovation.eu/resource-hub/transformative-social-innovation-narrative-timebanking (accessed February 9, 2019).

Weaver, P., and MacDonald, K. (2018). First Year (12 Month) Progress Report: Hull and East Riding Mutual Aid Network (HERMAN). Big Lottery Reaching Communities Grant 31049576.

Weaver, P. M., and Marks, M. B. (2017). "Social innovation resourcing strategies and transformation pathways: a first-cut typology," in *Paper prepared for a TRANSIT Resourcing and Monitoring Workshop*, University of Maastricht, February 2017. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/264TRANSIT_WorkingPaper%2011_Resourcing%20Strategies-pmw.pdf (accessed February 9, 2019).

Weaver, P. M., Marks, M. B., Hogan, L., Wittmayer, J., Ruijsink, S., Bacerra, L., et al. (2017). *Resourcing, monitoring and evaluation: scaling challenges and pathways.* (TRANSIT Brief 5), TRANSIT: EU SHH.2013.3.2-1 Grant agreement no: 613169. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/283%20Transit%20Brief%205%20Ressourcing%20monitoring%20and%20evaluation%20scaling%202017.pdf (accessed February 9, 2019).

Weaver, P. M., Marks, M. B., Scropke, C., and Hogan, L. (in press). "Social innovations and enterprises as integrative resources, strategies, and models," in *Social and Economic Development in Transitioning andMarket-Based Economies: Social Enterprises, Entrepreneurship, and Microenterprise as Integrating Institutions* eds B Ramos, P Miesing, and K Briar-Lawson (Albany, NY: State University of New York Press).

Wittemberg, R., and Ho, B. (2015). *Projection on Demand and Costs of Social Care of Older People and Younger Adults in England, 2015-2035.* Available online at: https://www.pssru.ac.uk/pub/DP2900.pdf (accessed October 24, 2018).

Yin, R. K. (2003). "Case study research: design and methods 3rd Edn," in *Applied Social Research Methods Series.* Vol. 5. Thousand Oaks, CA: SAGE Publications.

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Open to All: Dementia, Creativity, and Open Ecosystem Innovation

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In the health arena, open innovation approaches strive to address real-world complexity through driving multi-stakeholder collaborative activities that can better identify and respond to complex health needs. This paper will argue for the value of an open ecosystem innovation approach, one that explores the full implications of what it means to be "open" in a health innovation context. To these ends, the paper will outline the origins of open innovation in the health arena, suggesting that it has become an important site for pushing the limits of open methods and challenging mainstream conceptions of the targets of health innovation. Five guiding principles for open ecosystem innovation will then be proposed, drawing on learning from the Knowledge Exchange Hubs for the Creative Economy funded by the UK's Arts and Humanities Research Council. These principles point to a configuration of open activities that are maximally sensitive to (1) knowledge diversity in innovation work; (2) the consequences of adopting an open-orientation across all stages of innovation programming; (3) the value of deepening and broadening the targets of innovation activity; (4) the role of mediation in supporting cross-sector partnerships; and, (5) the importance of operating in an adaptive and sustainable manner in the long-term. A follow-on project from the AHRC Hubs—Dementia Connect—sought to apply this learning to an important health focus: dementia and the role played by creative participation in delivering important health outcomes. Through Dementia Connect, the applicability of open ecosystem innovation thinking was assessed, revealing the conditions under which it might deliver innovation-led improvements to the quality of life for those living with a dementia diagnosis. A detailed blueprint for conducting open ecosystem innovation is then proposed in full—a new and comprehensive response to the complex reality of living with a dementia diagnosis today.

Keywords: open innovation, collaboration, hubs, ecosystems, health, dementia, creativity

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1. INTRODUCTION TO OPEN INNOVATION IN HEALTH

In the health arena, open innovation approaches strive to address real-world complexity through driving multi-stakeholder collaborative activities that can better identify and respond to complex health needs. The development of open approaches is still very much an ongoing process, with their full potential in the health arena not yet fully realised. The subject of this paper—a new model of open ecosystem innovation for the dementia and creativity arena—is one proposal for advancing that development.

1.1. The Emergence of Open Approaches

The emergence of open innovation models can be traced back over the last 40 years through changing attitudes to the sites, participants, and outputs of innovation-oriented work within industry: from a focus on business differentiation (with successful product and service development tied to internal research and development—R&D), through a focus on core competences (in which an R&D base is broadened through outsourcing), to an open innovation focus in which greater emphasis is placed on the acceleration of internal innovation activities and the expansion of external markets through reciprocal interactions with external partners (Chesbrough, 2003; Sargsyan et al., 2011). In this account, the coupling of "open" activities simultaneously across different businesses becomes a form of networked innovation. In essence, open approaches are grounded in a single notion: that individual organisations can no longer have a monopoly on R&D or knowledge mobilisation. In other words, "internal knowledge" can no longer be relied on in sustaining current market positions or for survival in a global market in which knowledge is highly distributed across organizations and individuals (Chesbrough et al., 2006). Notwithstanding open innovation's traditional market-orientation, it is the broader scope of open activities beyond business and private economic agents that is now gaining prominence, reflecting their considerable value in other fields of work (Amin and Cohendet, 2004; Lester and Piore, 2004; Hippel, 2005; Sharpe, 2010; Dovey et al., 2014; Crossick and Kaszynska, 2016; REACT, 2016, p. 12–16; Gabriel et al., 2017). The health arena is one in which this broader scope of open activity is now finding expression, arising in response to failures in the dominant models of health innovation, concerning, for example, time-lags in the development of new products and services, the rising cost of innovation work, disconnect between innovation focus and identified areas of high priority, and inconsistencies in how, or which, innovations are taken up (Dixon-Woods et al., 2011; Gabriel et al., 2017). These points of failure are strongly linked to the fragmented and siloed nature of healthcare systems, introducing gaps in multi-stakeholder understanding of health needs and leading to the dominance of particular professional, disciplinary, or sector-led positions where a broader range of perspectives might be productively taken into account. In exploring the scope of open innovation in response to these failings, three key themes emerge for consideration: we can ask what it means to be "open" in terms of who participates in innovation, what those innovation activities might be, and the what the wider context of those innovation activities should be.

1.2. Perspectives on Open Innovation in Health

Participation in Open Activities

The health arena is well-suited to pushing the boundaries of participation in health innovation, with patients, carers, businesses, universities and research institutes, non-governmental organisations, community groups, and local or national governments amongst those identified as now critical in tackling the most resistant health challenges (e.g., Hippel, 2005; Bullinger et al., 2012; Gabriel et al., 2017). This is understood as key to diversifying the drivers and enablers of innovation, and, most critically, capturing the full plurality of valuing practices (cultural, social, economic, and so on) that are at play in concepts of health. Highly unsuitable to a generic approach, each open initiative faces the challenge of identifying who the right partners might be for identifying an innovation focus and delivering a response to identified challenges. In opening up innovation to a greater diversity of inputs, the demands being made of innovation work are also now changing. Greater participation is broadening more conventional technological and economically motivated interests to capture the demand for a greater variety of products and services, but also system reform, new training approaches, organisational development, policy change, and so on (Gabriel et al., 2017). With this greater recognition of the diverse drivers of innovation, the premium of the narrowly defined "solution" may also be seen to diminish; so, too, the value of novelty, where a repurposing and repair of existing products or services may bring greater benefits to a wider range of stakeholders. As such, these reappraisals are leading to an expansion in the types of participation as a function of the innovation process; initiatives are now found that introduce open principles into a variety of established innovation stages, including problem identification, R&D, and innovation adoption and diffusion (Gabriel et al., 2017).

Support for Open Activities

With its focus on working outside of more established sectoral or disciplinary practices, adopting an open orientation means rethinking the nature of innovation programming. Key factors that constrain open innovation in the health arena range from organisational challenges in introducing innovation activities, different legal, and regulatory environments that make cross-sector collaboration difficult, challenges associated with identifying, forming, and maintaining external partnerships, to the lack of venues or opportunities to engage knowledge diversity (e.g., Wass and Vimarlund, 2016). As such, open working can often be strongly limited because of the many different ways it will run against the grain of established sector practices. For example, whilst there is extensive scope for open innovation in medical technology, most open innovation in the industry is still limited to a "one way" exploitation of others' knowledge at the earliest stages of the innovation cycle (Wass and Vimarlund, 2016). The challenges faced in overcoming barriers to open engagement are such that many initiatives need to build a comprehensive innovation environment in parallel to the dominant innovation model for that sector. This might include, for example, developing (1) a stacked approach to project development, aligning multiple innovation stages together to support innovative work that will otherwise struggle to access conventional innovation support; (2) multi-stakeholder sector scoping to define critical themes and support the creation of lasting partnerships in advance of undertaking innovation activities; (3) bespoke brokerage and collaboration support to manage new cross-sector teams; (4) and a sensitivity to local and regional conditions in order to support wider innovation diffusion and adoption beyond established mechanisms (e.g., Robles et al., 2015; Malmberg and Vaittinen, 2017; Transform Ageing, 2018).

Context of Open Activities

Accompanying a greater diversity in participation and the development of new approaches for bringing extensive open innovation activity to fruition is a reappraisal of the wider focus and contexts of health innovation itself. Open methods are playing an important role in broadening that focus, opening conversations out-beyond traditional health priorities to raise issues around mobility and access to health services, education and health training, the social and cultural contexts of health, public health and longer-term health promotion, and so on. This broader conception of what is at stake in the health arena not only crosses conventional forms of innovation programming, but also raises the question of what open methods developed outside of the health arena might offer health related work in terms of new insights: if the strength of open approaches lies in managing interactions between non-traditional partners, then important perspectives on open innovation around health matters are likely to be found elsewhere as well. This is to recognise that an "open orientation" is not only highly generative, but hard to contain in that the continued questioning of perceived boundaries comes naturally to it. This is no better represented in how open initiatives are beginning to define new multi-sector conceptual spaces (such as the digital social innovation or smart cities paradigms) and give rise to collaborative methodologies with wide applicability across different fields of interest. Here, it is the opportunities both within and between fields of interest such as health, economics, energy, environment, democratic space, science, education, culture, employment, and so on, that are seen as a vibrant and productive space for innovation (Bria and Baeck, 2015; Robles et al., 2015, p. 122; Senior, 2018a).

2. FIVE PRINCIPLES FOR OPEN ECOSYSTEM INNOVATION

The conceptual and practical implications of opening up participation in innovation, developing new support mechanisms for open partnerships, and broadening the contexts in which open initiatives operate have been laid bare by the Knowledge Exchange Hubs for the Creative Economy funded by the UK's Arts and Humanities Research Council (AHRC). Operating between 2012 and 2016, the four AHRC Hubs demonstrated the many ways in which new cross-disciplinary and cross-sector partnerships could be built around a creativity agenda as applied to health and well-being, culture and heritage, publishing and documentary, open data and digital democracy, collaborative place-making, smart public services, gaming and entertainment, and much more besides. Together, they sought to enable broader participation in innovative research, policy, service, and product development (Creativeworks London, 2016; Design in Action, 2016; Dovey et al., 2016; REACT, 2016; The Creative Exchange, 2016; AHRC, 2017). Further developing this author's analysis of the AHRC Hubs programme (Senior, 2016, 2018a,b,c), five key principles for practicing what will be termed here "open ecosystem innovation" can be discerned from their work.

Principle One: Working With Distributed Knowledge

The first principle is to recognise the highly distributed nature of knowledge production and mobilisation in the twenty-first century. With its broad creativity focus, the AHRC Hubs demonstrated the potential for a wide variety of cross-sector partnerships across the programme's nearly two-hundred projects. New partnerships were formed from amongst 73 different academic subject areas (across the arts, humanities, and sciences) and 47 different areas of creative economy work, drawing in participation from across the private, public, and voluntary sectors (Senior, 2018a). This work revealed the many ways in which dominant conceptions of professional boundaries can mask the extensive multi-disciplinary, cross-disciplinary, and non-disciplinary expertise that project partners can bring to project work, or the different ways in which participants understand their expertise to be constituted, mediated, and mobilised. Indeed, points of collaborative entry would often reflect interests that transcend formalised or non-formalised bodies of knowledge (not least those in narrative experience, place making, creative provocation, experience design, material culture, and so on). The notion of "crowding diversity" emerged from the programme as a model of drawing together the wide-ranging expertise needed for innovative project work, one in which a Hub's activities serve to enable that access and deliver greater parity within cross-sector partnerships (REACT, 2016, p. 17). With this focus on the strength of cross-sector collaboration as a generator of innovative new work that stands apart from the professional or institutional activities of project partners, a programme-wide consensus emerged on investing Intellectual property (IP) directly in project partnerships (whilst respecting partners' prior IP). This differs from dominant models of sector-led knowledge exploitation, such as in the UK university sector in which where IP emanating from the work of academic employees would be retained by their institutions (and often with negative consequences for research collaborations with external partners; Virani, 2015a).

Principle Two: A Comprehensive Approach to Innovation

The second principle is to recognise that high levels of uncertainty associated with driving innovative new cross-sector partnerships requires action to limit value loss from the innovation process as a whole (e.g., through more effectively connecting different stages of the innovation cycle together), to reduce unnecessary risk for project teams across an innovation cycle (for example through supporting extensive peer-to-peer learning and streamlining administrative and contractual processes), and to help capitalise on the highly generative, and often unpredictable, nature of innovation work (e.g., by enabling partnerships to iterate project work and identify the right trajectory for its development) (Senior, 2018b). At the heart of this is a question about effective innovation programming. Whilst the AHRC Hubs differed strongly in their motivations for engaging in innovation work, a common

framework emerged that exposes some of the fundamental needs of open innovation practice (Senior, 2018b, p. 12–16). The framework was originally proposed by the Design in Action Hub to describe their own innovation model (Woods M. et al., 2015), and is characterised by a five-stage innovation cycle (Scoping-Interpretation-Ideation-Formation-Evolution; the SIIFE model). Initial Scoping work defines Hub activities aimed at idea discovery and concept development; centred around the identification of critical challenges for target communities, sectors, and disciplines, this stage aims to establish the right targets for innovation work and potential project partners. An Interpretation stage that follows helps further develop and frame Scoping work into sector-relevant calls that anticipate productive areas of multi-sector collaboration. Only in stage three—Ideation—are participants first assembled around a themed call, with careful brokerage and curation of participants required to build a strong "ideas base" from which new partnerships might emerge. Competitive entry into Stage four—Formation—leads to a period of intensive project development, with an important role established for tailored project support, cohort-based peer-to-peer-learning, and expert-led R&D. Finally, an Evolution stage marks the transition from prototype development toward advanced project realisation or market launch, where the Hub helps teams to tap into external funding, and support mechanisms.

Principle Three: Responding to Your Network of Partners

The third principle is to recognise that whilst a generic innovation framework might capture much of what is needed in adopting an open orientation, it is the development of a strategy tailored to the particular interests, needs, and pressures of a target innovation landscape that brings relevance to its application. Four different strategies emerged from the AHRC Hubs that this author has framed in terms of the SIIFE model (Senior, 2018b, p. 18–37): these included a Seeding Innovation strategy for the Creative Industries aimed at increasing and diversifying participation in innovation work through a large number of small-award, rapid development innovation vouchers (Creativeworks London, 2016); an Action Research strategy that centred project development on emerging academic research, allowing more experimental projects to emerge and trigger new projects over a longer time-frame (see also The Creative Exchange, 2016); a Design-led Business Development strategy focusing on the generation of new businesses through investing in a smaller number of projects and providing ongoing support through to market launch (Design in Action, 2016); and the practice of Cultural Ecology with its focus on a high-value and ambitious R&D programme embedded within a community of creative practitioners and academics, so strengthening a wider engagement around new ideas, innovative approaches, and project insight (REACT, 2016). In this way, the AHRC Hubs demonstrated the flexibility of a common underlying innovation framework. With each Hub targeting different innovation challenges, the programme as a whole resulted in a highly diverse body of work, including new products, services, research, and artistic outputs, job creation, teaching methods, and so on—all indicative of the highly generative potential of an open orientation (e.g., Senior, 2016, p. 27–29).

Principle Four: The Importance of Mediation

The fourth principle is to recognise that the collaborative production at the heart of open innovation requires mediators with great sensitivity to different sectoral practices. Effective mediation can be critical in the brokerage and well-being of new partnerships, the successful development of new projects, and the effective navigation of institutional systems and processes that make such work possible (Senior, 2018b). Each AHRC Hub developed its own form of intermediary role, reflecting their particular innovation ambitions and the sectors and disciplines involved: first, the "cultural and creative knowledge broker" working to help different partners match interests, expectations, and compatibilities prior-to, and throughout the collaborative process (Virani, 2015a; Creativeworks London, 2016, p. 34–37; Senior, 2018b, p. 18–21); second, the designer introducing tailored design methods to support partners through a process of exploring, iterating, and testing new collaborative ideas (Design in Action, 2016, p. 6–8; Senior, 2018b, p. 22–27); third, the innovation-enabled PhD candidate, in which managing cross-sector work formed a central part of a PhD training programme and created a route for new research agendas to shape project development or open up new project trajectories (The Creative Exchange, 2016; p. 30–32; Senior, 2018b, p. 32–37); and, finally, the creative producer, that most fully brought together multi-sector and project management expertise into a single dedicated role (Dovey et al., 2014; REACT, 2016, p. 18–19; Senior, 2018b, p. 28–32). Here, creative producer activities include generating new connections between people and institutions, brokering collaborative opportunities, protecting new partnerships from damaging bureaucratic or administrative hurdles, supporting partnerships through the collaborative journey, and providing creative and practical advice[1]. The more encompassing open initiatives become, the greater value such dedicated roles may bring, a recognition that effective cross-sector working will often exceed a "skill set" that can be added to existing professional roles.

Principle Five: Operating Sustainably

The fifth principle is to recognise that establishing new forms of open collaboration across sectors is a long-term culture-change project that requires an ongoing and sustainable presence. The "Hub" concept is important in this regard (Senior, 2018c). Less a bricks-and-mortar entity with a centralising effect on activity around it, a Hub can also be understood as an interface operating within a network of partners, delivering a programme of work that serves as a focal point for key strategic, research, and production activities at a given time. In this author's analysis, the AHRC Hubs revealed a number of core aims that underlie this way of working (Senior, 2018c). Most centrally is working to become embedded within multiple sectors whilst attaining

[1]The role has since been codified as a professional masters programme at the University of the West of England (UWE Bristol, 2018).

the degree of autonomy needed to hold a critical and functional distance from them, i.e., establish a leadership role that can help forge a shared trajectory amongst different sector partners united by common underlying interests. Building on this, an effective Hub should strive to deliver an innovation programme with strong governance that can support the delivery of time-limited, targeted outcomes in response to identified innovation challenges—a systematic (rather than an *ad hoc*) response to a complex innovation landscape. Within this, a Hub must be able to develop the key brokerage, administrative, and support roles needed to build new forms of parity-driven collaborative partnership. Finally, an effective Hub should strive to become operationally agile, one able to embed learning arising from its own work and so develop a consistent and effective commitment to a target innovation space. This requires achieving sustainable operations that can break free from the limitations of time-constricted institutional or sector-led funding. In essence, this Hub model operates by pulling the essential components of co-production together, shifting the centre of gravity away from individual sectors. Put another way, the act of "being a Hub" is perhaps the biggest single challenge faced; it means establishing a Hub structure and culture, building effective partner networks, driving culture change within partner sectors, and striving for lasting influence beyond its immediate network.

3. A MODEL OF KNOWLEDGE FOR OPEN ECOSYSTEM INNOVATION

These five guiding principles point to a configuration of open activities that are maximally sensitive to (1) knowledge diversity in innovation work; (2) the consequences of adopting an open-orientation across all stages of innovation programming; (3) the value of deepening and broadening the targets of innovation activity; (4) the role of mediation in supporting cross-sector partnerships; and (5) the importance of operating in an adaptive and sustainable manner in the long-term. The claim here is that together they configure open innovation in a way that is radically decentralised from the interests of any given single organisation, discipline, or sector in the pursuit of innovation needs of shared interest—what I have termed open ecosystem innovation. Whilst still in its infancy in an innovation context, the "ecosystems thinking" referred to here tries to capture a specific instance of living organisms within a shared habitat and the patterns of value that coordinate those lives (e.g., Fuller, 2005; Sharpe, 2010; Markusen et al., 2011; Pratt, 2014; Senior et al., 2015; Crossick and Kaszynska, 2016). As such, it concerns more than just a question of *who* is involved, but the quality, dynamics, and time-evolution of their interactions together, as captured in the five principles. Looking at them again through a single lens—the status of knowledge—adds important nuance to this ecosystems perspective and helps reveal the wider ramifications of adopting such an account.

In the rise of the innovation economy, a conceptual model of knowledge has emerged that sees "knowledge work" as an extension of an economy of physical transactions, a refashioning of traditional manufacturing industries (Pratt, 2014). Imagined as a form of "physical good" (e.g., ideas as commodities, say in the form of intellectual property or patents), the "thingness" of knowledge renders it suitable for transfer or exchange[2]—the language of the innovation pipeline, of knowledge inflows, outflows, spill-overs, and pipeline couplings[3]. The conceptual ease of this "physical" model, however, has proven highly consequential for how knowledge is made subject to innovation policy. Following the arguments of Pratt, we see (1) an emphasis on knowledge outputs that can be readily assessed (tracked and compared) against key performance indicators; (2) the notion of creativity, as sited with[in] specific individuals or professions—the "you have it or you don't" model that serves as the basis for targeted (and, therefore, exclusionary) forms of funding and support; (3) infrastructural conceptions of innovation as self-contained activities that need merely to be implemented, ready subjects for streamlining and efficiency drives; (4) and the dominance of spatial targets for policy intervention, i.e., a focus on bricks and mortar co-working spaces, co-location, and regional clustering—forms of economic market place where knowledge can be traded as physical good. Ecosystems thinking suggests a very different account of knowledge. Rather than a thing to be transferred or exchanged, knowing is fundamentally relational, and, therefore, highly situated, and context-dependent (e.g., Pratt, 2014). In this way, an alternative model of knowledge can be proposed.

Looking again at the first principle for a model of open ecosystem innovation, it concerns not just sensitivity to knowledge diversity in innovation work, but also how knowledge is constituted within communities of practice (rather than "isolated" within individuals), so directing attention both to different forms of knowing (tacit, skill-based, formal, and informal; e.g., Facer and Enright, 2016), and the activities and values between individuals through which knowledge is mobilised and stabilised or destabilised. From this, an ecosystem perspective opens up, rather than closes down, the search for who should be engaged in innovation work and what it means to access "sources" of knowledge in the context of innovation programming. Looking again at the second principle, which concerned sensitivity to the wider contexts in which new innovation programming is planned, this particular lens focuses attention on how patterns of knowing (that help coordinate the life of an ecosystem) must be understood as pre- and post-dating any planned intervention (such as driving novel forms of collaborative partnership). This should orient open innovation programming to ask what activities might be needed prior-to and following innovation activities to enable that work to emerge from and integrate back into active patterns of

[2]In the UK University sector, models of Knowledge Transfer continue to dominate thinking in interactions with external partners such as Industry (Dowling, 2015). The emergence of the Knowledge Exchange concept—an attempt to recognise forms of reciprocity in such partnerships—does little to tackle the underlying epistemic misconception of knowledge as "physical good."

[3]The open innovation literature is itself commonly grounded in this style of thinking, invoking resource-based models of knowledge flow operating across well-defined internal and external organisational boundaries (see West et al., 2014).

knowing and knowledge work. The third principle concerned a sensitivity to the scope of innovation activities demanded of an open orientation. Critically, patterns of knowing—and the logics they entail—are always plural. Thus, innovation work might be embedded in an "economic logic" (currency as one *way* of coordinating action in an ecosystem), but it is not the only logic at hand; indeed it can be a limited driver for innovation when pursued at the exclusion of other, fundamentally entailed, logics. Put another way: ecosystems are not "for anything" (such as the economy), only the maintenance of the complex life that sustains it (Sharpe, 2010, p. 35; Pratt, 2014, p. 11). As such, a "healthy" open innovation ecosystem is one that enables different patterns of knowing (their values and logics) to be contested through innovation work, rather than compromised through a single dominating logic (such as economic growth).

The fourth principle concerned sensitivity to the need for dedicated mediation roles in the support of open innovation activities. An effective encounter between different ways of knowing (constituted through language, logics, values, power-relations etc…) can require more than just mere exposure to one another; it can require mediation. Rather than leaving potentially valuable interactions to chance, this points to the value of dedicated intermediaries who can meaningfully engage different sector cultures, and so help collaborative partnerships to inhabit (and ask questions of) each other's professional commitments and values. Critically, this is not a question of adopting a relativistic or anti-disciplinary stance on knowledge—it is precisely because different ways of knowing capture different surfaces of complexity that valuable insight can be gained through their contestation. Finally, the fifth principle concerned the development of an adaptive and ongoing ecosystem presence if innovation needs are to be met effectively and in the long-term. The relational nature of knowing renders it far-reaching, highly dynamic, and subject to tension between stabilising and destabilising forces. Achieving both a critical presence and duration (see also Pratt, 2014, p. 12) to understand and influence those knowledge networks, being highly reflexive of changing ecosystem states, understanding the potential ramifications of innovation activities throughout the full life of the ecosystem, *anticipating* future changes in the life of an ecosystem; all are required for this form of sustainable working. This reveals the difference between a "pipeline" innovation agenda that focuses primarily on generating "outputs" and an agenda that aims to create or sustain the wider conditions from which innovation activity can arise.

4. DEMENTIA CONNECT: SCOPING THE DEMENTIA AND CREATIVITY ARENA

Following on from the AHRC Hubs programme, Dementia Connect asked how this approach to open ecosystem innovation might apply to an important cross-sector health challenge. With a view to exploring the AHRC's open ecosystem innovation principles, a highly contested multi-sector field of interest was chosen: dementia and the role of creative participation in delivering important health outcomes for those living with a dementia diagnosis. Core team members from the four AHRC Hubs participated in the project, serving key leadership, advisory, and research roles. A seventeen-member, cross-sector advisory board supported this core team in delivering all aspects of the project, which was conducted through the University of the West of England and the Foundation for Arts and Creative Technology (FACT, Liverpool). Underscoring the ethos of the principles in question, the approach adopted by Dementia Connect was to build a cross-sector network of partners spanning the "dementia and creativity arena," consult them on the current state and possible future trajectories of the field in relation to open innovation activities, and to activate the network through funding new, innovative cross-sector partnerships. Together, these activities (detailed in section 4.1) served as a method to map critical actors, interactions, values, and aspirations (outlined in section 4.2) through which the five guiding principles for open ecosystem innovation activity could be assessed (see section 4.3); building on this work, a blueprint for open innovation ecosystem in this field can now be put forward (section 5).

4.1. Dementia Connect Activities

Dementia Connect Development Labs

Dementia Connect's centrepiece was a sequence of four full-day development labs, collectively addressing target themes linked to open ecosystem innovation through face-to-face interaction amongst the project's emerging partner network. Labs were used to identify current cross-sector challenges, opportunities, and best practice in the dementia and creativity arena; to develop new ideas for prototype products, services, and experimental research; to identify principles for increasing participation in creative activities and broadening access into innovation work; and to explore different sector-specific evaluative practices and impact-revealing activities. A lab consisted of a full-day programme of project development activities, typically for 20–25 participants and led by a creative producer. A Lab might draw on a range of different activities to probe a chosen theme and deliver on the Lab's aims, including brainstorming work, lightning talks and provocations, simple storyboarding, iterative project ideation, SWOT analysis (exploring the opportunities behind a project idea, its potential strengths and weaknesses, and the threats to its implementation), and Importance-performance analysis (IPA; helping to unpick key priorities and areas of over- and under-performance in a given field). Development labs were adapted to activate the project network in ways best suited to a theme's demands: a Lab might, for example, be built around a curated cohort of participants self-organising around shared interests (a form of "curatorial bricolage" (Virani, 2018); "leading lights" from the network invited to bring in their own team and project focus; or, an open-call beyond the network to bring in new ideas or test/challenge an emerging consensus. Insights from the Labs were also fed into research activities drawing on field literature and semi-structured informal interviews with sector partners to further contextualise or assess open

ecosystem innovation insight emerging from the Dementia Connect project.

Dementia Connect Creative Voucher Scheme

Each development lab was associated with a competitive creative voucher (CV) scheme, a means of helping participants work together after a Lab event to prototype new ideas or conduct research as part of the Dementia Connect project. Totalling £20 K (£2–5 K per award), vouchers were essentially a means of nudging innovation around a given Lab theme. Historically, small voucher awards have proven a useful stimulus for projects that might not otherwise receive funding in traditional sector contexts or within the constraints of large award schemes (e.g., Virani, 2015a,b; Shiach et al., 2017): they can go far in supporting new work when attached to minimal application and reporting requirements (with time-saving and motivational consequences); they can unlock considerable in-kind support, a key sign of partner commitment that enables projects to go even further; and they are suitable for first-time entry into cross-sector collaborations whilst also helping more experienced, ambitious partnerships to work together in new ways—findings that were corroborated in our work for Dementia Connect (Virani, 2018). In the two Labs dedicated to the development of new project teams, two thirds of participants submitted one or more applications for a CV. More details on the CV projects developed through Dementia Connect can be found on the project homepage (Dementia Connect, 2018).

Dementia Connect Network

At the heart of Dementia Connect was a network of experts and advisors from a variety of different sectors. The four development labs and seven innovation projects funded drew on the expertise of 105 participants (including the project's core team and advisory board), including: 28 academics from 18 universities, partners from three innovation agencies, 22 arts, culture, and design practitioners, 3 national social care charities operating at least one care home, 7 participants from the National Health Service (NHS) and public health, 9 micro creative businesses, 19 charities working to improve care delivery, and 7 people living with a dementia and their care partners. The network was centred around Merseyside, with 66% of participants coming from the North West); a further 10% came from each of Bristol and London (reflecting the research base of the Dementia Connect team), with the remainder coming from across the UK (North East, Yorkshire / Humberside, West Midlands, South East, Wales, Scotland, and Northern Ireland). Development lab participants also included key partners from nationally operating networks, including the LAHF (London Arts in Health Forum), the AHSN (UK's Academic Health Science Network), the Dementia Engagement and Empowerment Project (DEEP), and National Museums Liverpool, amongst others. Critically, nearly 200 people living with dementia, their care partners, and front-line care staff (including participants from a number of different ethnic and cultural groups) were directly involved in the development, delivery, and evaluation of innovation projects. Dementia Connect activities were disseminated through its website and public showcases at FACT Liverpool, Liverpool John Moores University, Liverpool Life Science UTC (University Technical College) and the 2018 International Business Festival hosted in Liverpool.

4.2. Mapping the Dementia and Creativity Arena

Through the work of Dementia Connect, an outline of the dementia and creativity arena could be developed, addressing the scale of the dementia challenge, the changing dementia demographic in the UK, the role of arts and creativity as forms of dementia intervention, and the current state of the dementia innovation landscape.

The Dementia Challenge

There are currently 47 million people living with a dementia, a number expected to almost triple by 2050 to over 131 million (Prince et al., 2016; for the UK, see Prince et al., 2014); in most high-income countries, it is estimated that only 40–50% of people living with dementia have received a diagnosis (Prince et al., 2016, p. 6). Dementia is a descriptive term defining significant changes from a person's usual level of cognitive functioning, for example changes in recalling memories, finding words, recognising objects, carrying out practical tasks, or making considered judgements (Alzheimer's Society, 2017, p. 12–23). There are a number of underlying causes that affect the health of a person's brain in this way. Dementia can take many forms, with the most common being Alzheimer's-type dementia, vascular dementia, dementia with Lewy bodies, fronto-temporal dementias, and Parkinson's dementia. The disease course varies according to sub-type and a person's health status, but, in general, there is a slow progressive decline in functioning over a number of years through to the point where individuals are unable to survive without a very high level of personal support. With dementia onset, individuals also become vulnerable to the breakdown in their sense of self, which can lead to anxiety, confusion, low self-esteem, and often social disconnection and marginalization; the effects of dementia on friends and family can be devastating (Batsch and Mittelman, 2012; Kane and Cook, 2013). The underlying innovation drive—that dementia is likely to continue being an important focus of attention for the foreseeable future—is one that needs to be addressed: not only is there a need to respond to immediate challenges, but to anticipate possible future challenges (given that the configuration of dementia-related needs is going to change with each generation), and to put preventative healthcare measures in place where possible.

The Dementia Demographic

As diagnosis rates are driven up, and diagnoses made earlier (e.g., Mukadam et al., 2014), the dementia demographic increasingly includes those still leading active lives and living at home. Further, the number of people live with a diagnosis is closely matched by those taking on care responsibilities in the home, carers and families who often struggle to receive instruction or support, and shoulder two-thirds of care cost (Lakey et al., 2012;

Prince et al., 2014). With longer periods receiving informal, extra, and domiciliary care, communities now face serious challenges in accommodating those living with a dementia diagnosis. This society-wide expression of the dementia challenge is reflected in the UK through the proliferation of organisations building critical support networks, sharing best-practice, generating collective insight beyond individual cases, and filling in gaps in social care. These have emerged to support people living with dementia (e.g., DEEP, the UK Network for Dementia Voices with over 68 groups led by people living with dementia), their carers (e.g., the National Dementia Carers Action Network or Together in Dementia Everyday, TiDE), friends and families (dementia friends movement operated by the Alzheimer's Society and now with the commitment of over 2.6 million Dementia Friends; Dementia Friends, 2017), for communities (e.g., the Dementia Friendly Communities movement with 196 signatories recognised by the UK Alzheimer's Society; Woodward et al., 2018), and for dementia-support organisations themselves (e.g., the Dementia Action Alliance, with over 7,000 member organisations across England; Dementia Action Alliance, 2019). Whilst sectors such as banking, retail, transport, and arts and leisure are working to build their provision to support a more dementia friendly world (including dementia awareness training for staff and adjustments to business processes or work programmes (e.g., Camic and Chatterjee, 2013; Wootten et al., 2016), the shift in sites of care from predominately care home environments to include family homes and communities is a challenge without historical precedence. It is a challenge that state-supported and market-driven health innovation is likely unable to address alone, with an important role envisaged for even the smallest social enterprises and community groups (McNeil and Hunter, 2014; All-Party Parliamentary Group on Arts Health and Wellbeing, 2017).

The foundation for recognising the personhood of someone living with a diagnosis, and, therefore, the patterns of behaviour that constitute that life, is one of fundamental human rights, as recognised by the World Health Organisation: "People with dementia should be empowered to live in the community and to receive care aligned with their wishes and preferences" (WHO, 2017, p. 22; also, Equality and Human Rights Commission, 2011). The affirmation of this status comes in light of the greater risk of breaches in human rights present for older people dependent on care services (Equality and Human Rights Commission, 2011, p. 19; Boaden, 2016), but also the ways in which increasingly timely diagnoses now allow people to consider the care they wish to receive and to which they have the right (placing a degree of emphasis on consumer empowerment and innovation). Underscoring this is a broadening of "personhood" as the lens through which dementia has been addressed by research and practice to include perspectives on citizenship, a position that opens up discussion on issues of discrimination and social inclusion, one that is more inclusive of the full complexity of living with a dementia diagnosis today (e.g., Bartlett and O'Connor, 2007; Kontos et al., 2017). Seen through the lens of Dementia Connect's work, this highlights the need to re-think the "patient status" of people living with dementia, the complexity of attaining ethical research approval when partnering with universities in collaborative work, the role of fair compensation and IP protection for all participants, and how informed—as well as continued—consent is to be managed as a function of the dementia journey.

Dementia Interventions

At the moment, there is no cure for dementia. Pharmacological interventions aim to improve cognitive functioning or to reduce distressing symptoms, but there is currently no treatment that can convincingly alter the course of the underlying condition (in relation to Alzheimer's for example: Anand et al., 2014; Khoury et al., 2017). With dementia progression, sustaining contact and communication (both verbal and non-verbal) becomes ever-more important in maintaining quality of life and well-being. Here it is significant that people's artistic, imaginative, and emotional capacities can remain strong for years after dementia onset. A growing body of evidence now reveals that arts-based and cultural interventions can elevate people above the stresses of dementia, slow degeneration, improve memory and communication, help drive social interaction and (re)-connection, and provide an important means of self-expression (e.g., Beard, 2011; Gould, 2013; Windle et al., 2014, 2018; Basting et al., 2016; Young et al., 2016; Dowlen et al., 2017; Windle, 2018). The advantage of non-pharmacological interventions is multiple, with few, if any, negative side-effects and a positive impact that can even exceed those of pharmacotherapy intervention (Herholz et al., 2013, p. 1236). Whilst strengthening the evidence base remains a key priority (Windle et al., 2016; Gray et al., 2017; Thomas et al., 2018), the wider arts and well-being agenda is now receiving more attention from both national and devolved governments (Department of Health Social Care, 2016; All-Party Parliamentary Group on Arts Health and Wellbeing, 2017; Arts Council of Wales, 2018).

If it is to respond to the needs and rights of those living with a diagnosis today—namely, remaining independent for as long as possible, and having choice and control over their lives through all stages of their dementia journey—a focus on dementia and creativity must expand its concerns beyond "creative activities" alone. As affirmed by Dementia Connect's development lab activities and the DEEP Participation creative voucher (DEEP, 2017a), such an agenda must capture a commitment to a person and citizen-centred vision of creative engagement, one that understands creativity as fundamental to well-being and social health but also places it in the context of human rights. Working with different forms of expertise, creativity, and value amongst people living with a diagnosis (and their care partners and communities) will mean simultaneously addressing the keys to meaningful participation: support, enablement, and accessibility. This means addressing challenges faced by those who are not active or well-supported; the need to ask how both traditional and emerging practices (e.g., digital practices) might help us rethink how, when, and where creative activities can take place; and a recognition that a creativity agenda can only succeed if our models of care, mobility, information provision, community support, and the designed environment are considered in interaction with it. Once again, this is to emphasise how an effective creativity agenda must stand with, rather than apart

from, the realities of day-to-day living. That people living with a diagnosis must now play a more central role in the design of support services is now gaining recognition, with many examples of real-world application (Woods et al., 2013; East Dunbartonshire Council, 2014; Tsekleves et al., 2015; Woods L. et al., 2015; Zeilig et al., 2018).

Dementia Innovation Landscape

It is in this way that those living with a diagnosis, their care partners, medical researchers, front-line staff, community partners, artists, creative enterprises, and so on, all have a recognised—but different—part to play in delivering a higher quality of life for those living with a dementia. The exploration of new ways of working across these different perspectives, however, is still in an experimental phase, largely characterised by isolated collaborative projects, and with very few examples of coordinated or sustained (ongoing) programming in place[4]. Indeed, whilst many of the conditions for promoting dementia-related innovation are now present in the UK, and considered favourable in relation to other G7 countries (ADI GCA. Dementia Innovation Readiness Index, 2017), policy is still operating within largely conventional models of innovation, i.e., in relation to medical, technological, or social care innovation silos. The current "state of play" might be best understood as isolated pockets of activity that leave untouched key systemic barriers that prevent critical resources, key decision makers, stakeholder groups, and diverse sites of innovation being productively brought together in the long-term.

If a meaningful dementia and creativity agenda that can stand alongside the day-to-day realities of living with a dementia diagnosis is to be developed, then it is these tensions and potentials that need to be better understood. Working with different groups to understand both how they are responding to the dementia challenge and see themselves in relation to the dementia and creativity arena as a whole was a key activity of the Dementia Connect project. Engaging its wider network, a number of different group perspectives ("views from") were developed, including those from the dementia experience, academic health research, arts and health practice, care home provision, clinical commissioning within NHS England, community organisations, and social-enterprises. In enabling these conversations, the Development lab and CV scheme could then support innovative collaborative projects to engage these different perspectives around a shared interest. This approach to surveying the field was critical not only in assessing the value of open ecosystem innovation principles, but also in gaining practical insight into what an innovation blueprint for the field might look like. One example of the learning developed through this approach (concerning health commissioning activities in England) should serve to illustrate the challenges faced in working across sectors in this arena and reveal some of the real-world potential for cross-sector innovation activities in the future.

[4]The Innovate Dementia Living Lab (with eight partners across North West Europe) is a rare example of such programming (Innovate Dementia, 2019).

Case Study: An Innovation Need

The "view from" described here concerns health commissioning activities within the NHS. In England, Clinical Commissioning Groups (CCGs; operating as part of NHS England) play a central role in commissioning local healthcare services (The King's Fund, 2017). Any service provider that meets NHS standards and costs (including social enterprises, charities, and private sector businesses) can receive a commission. Whilst the evidence base for the value of arts and cultural engagement in delivering health outcomes grows, it continues to be a very challenging commissioning environment for such work (Bagwell et al., 2014, p. 23). Increasingly, a number of health policies are being put in place that offer considerable potential for delivering on a dementia and creativity agenda, including health coaching, integrated personal commissioning, social prescribing, and personal health budgets. The move toward a social prescribing model is particularly interesting here, a recognition of the value non-clinical interventions bring to the delivery of health outcomes (Ward, 2016).

Whilst this might constitute the underpinnings of an active arts innovation agenda, the route to commissioning is fraught with challenges: a key challenge concerns visibility, with high-levels of arts and cultural sector fragmentation introducing barriers to effective communication and exchange. Many voluntary and arts organisations falling below the radar of commissioning are faced with the task (often beyond their resources) of re-organising, clustering, and lobbying in order to gain visibility. In corollary, commissioners can feel isolated in the task of finding promising new programmes or projects in their region; a second important challenge concerns procurement, with the persistence of approaches that are inappropriate to arts and cultural work, approaches that use highly contestable models of value and evidence. An "air of mystery" can surround the commissioning process as a result, with external organisations left questioning how agendas are set and decisions made; a third challenge concerns the sheer breadth of innovation activities—beyond the arts and across conventional silos—required if the promise of social prescribing is to be delivered. For example, whilst new digital technologies may aid in connecting health practitioners to service users through online social prescribing platforms, the valuable services they point to may be best supported through more traditional forms of artistic and practice-based engagement. Similarly, the development of disruptive new products and services might be the right goal to pursue in filling a commissioning gap, but so too a refinement or repurposing of what is already in place. All these challenges apply limits on effective commissioning, each further compounded by considerable regional differences in NHS structure (a consequence of the UK's devolution agenda) and the ongoing challenge of integrating health and social care practices nationally.

As such, commissioning may benefit from new cross-sector operating platforms that can help broker relationships with innovative, trustworthy partnerships, those developing new work with appropriate evaluation measures and pathways to wider adoption in place (e.g., Harris and Rowley, 2017, p. 12, 18).

Through Dementia Connect's Development labs, a number of proposals emerged that speak to many of the issues around building capacity for social prescribing, proposals that were then refined, and prototyped through the CV scheme. Whilst only scratching the surface of the social prescribing challenge, they do reveal the potential for new ways of working and for developing a joined-up prescribing approach. Seen together, these three voucher projects reveal important connections that will need to be drawn between creative social care (e.g., The Activity Academy), post-diagnosis support (e.g., Drawing on Strengths), and information services (e.g., What's on for Dementia) if an effective approach to social prescribing is to be developed. They also reveal the value of supporting a wide variety of innovation-orientations and supporting diverse cross-sector partnerships.

The first creative voucher project—Activity Academy—was a partnership between Widnes Super League Rugby club, Halton Clinical Commissioning Group, and the national social care charity "Community Integrated Care." The team asked how community-based creative resources might bring added value to person-centred care home routines where, traditionally, creative engagement with residents is considered a time-restricted activity delivered only by dedicated activity coordinators. In the Activity Academy, the team brought together leading regional figures in creative engagement and social care best practice to deliver an event for more than fifty frontline care home staff and managers in the Liverpool City Region. "Espresso training" activities and short practical workshops (Inspiration Stations) guided participants through the delivery of chair-based exercises that promote mobility in older people and the use of poetry, literature, and music to engage with residents and support reminiscence work. Post-event questionnaires pointed to an increased understanding of, and commitment to, person-centred support amongst participants, with care home managers reporting new activities as part of their services 4 months on. Activity Academy was a finalist in the 2018 UK National Dementia Care Awards.

A second creative voucher project—Drawing on Strengths—focused on the earliest stages of the dementia journey, the immediately post-diagnosis period. They recognised that whilst participation in creative activities can be an important route to making sense of changed circumstances, re-affirming personhood, and opening routes to sharing time with loved ones, too few clinicians direct people toward creative activities as part of the social prescribing agenda. Further, a dementia diagnosis centres on identifying reduced memory performance and the loss of cognitive abilities, a deficit-focus that can mask the rich interests, capabilities, and creative ambitions that can form the basis of meaningful creative participation. In response, the Drawing on Strengths project team—bringing together an NHS psychologist, a multi-disciplinary artist, an Arts and Health network, and an academic researcher of arts and devolution—developed a paper-based tool that can help someone with a dementia diagnosis build a snapshot of the creative, social, and community assets in their lives and build it into their care journey as part of the NHS Mersey Care's existing offer of post-diagnostic support. The tool was co-designed with 62 people, including those who have received a dementia diagnosis, their care partners, and dementia advocates.

An overarching challenge, namely limited public information on the availability (and suitability) of local creative activities for those living with a diagnosis, was addressed by a third creative voucher project—What's on for Dementia. Here, the team asked how people living with dementia might be helped to identify appropriate creative activities in their local area, whether through self-identification or as part of social prescribing. Through a partnership between the Uses of Arts Lab at Liverpool John Moores University, Welcome2Liverpool (a micro-enterprise), BBC Radio Merseyside, and NHS Liverpool Clinical Commissioning Group, a "what's on for dementia wellbeing" service was prototyped off the back of an existing, free phone app offering a real-time guide to events across the Liverpool City Region. Building on research that mapped community resources offering dementia friendly well-being activities, workshops were run with arts organisations, clinicians, app developers, and people living with a dementia to develop accessible design features for the service.

4.3. Assessing the Five Principles of Open Ecosystem Innovation

With this broad outline of the dementia and creativity arena in mind, the applicability of the five open ecosystem innovation principles developed through the AHRC Hubs programme (see section 2) can be gauged. The first principle addressed the need to be open to knowledge diversity in innovation work. Living well with a dementia diagnosis today implicates a wide range of experiential, disciplinary and sectoral activities, in part a consequence of changing dementia demographics and the emergence in recent years of a strong dementia rights, person-hood, and citizenship perspective. The growing role of support networks across different assemblages of those affected by dementia brings an added dimension to the relational and situated nature of knowing. Whilst the value of crowding diversity holds true, there is still need to develop new forms of participation for people living with a dementia if they are to meaningfully shape an innovation agenda. Participation might include contributing to the scoping of innovation themes, participating in user-testing environments, but there also needs to be new opportunities to actively participate in (or lead) project development. Whilst progress is being made in co-design and co-creative approaches with people living with a diagnosis (Tsekleves et al., 2015; Zeilig et al., 2018), there is still a need to address the status of intellectual property and fair compensation for people living with dementia in innovation work.

In developing an innovation programme that can respond to the whole life of this dementia and creativity ecosystem (principle two), and with relatively little innovation support already in place, there is a need for no-less than a full-cycle innovation approach. This would include working to identify critical innovation themes, broker new partnerships, enable R&D, and build routes that support innovation adoption and diffusion. Here, a variant of the five stage Scoping-Interpretation-Ideation-Formation-Evolution (SIIFE) framework developed

within the AHRC Hubs programme could suit this task, one with the following specifications and adaptations made: first, the introduction of a pre-framework support stage for multi-stakeholder-enabled community organisations that are already active in the field and constitute the foundation from which innovative new work might arise and be adopted in the long-term (an Ecosystem Investment stage); second, the specification of an extensive Scoping and Interpretation stage in response to the high levels of ecosystem fragmentation; third, the specification of a prolonged Ideation stage to help initial experimentation with new ideas in a field where an innovation orientation (and cross-sector working) is still an emerging practice; fourth, the specification of a substantive investment in R&D and collaborative support during the Formation stage, appropriate to the scale of the innovation challenge faced and the involvement of people living with dementia throughout the collaborative process; and finally, a full commitment to integrating advanced project teams into other forms of project guidance and funding support through the final Evolution stage, a recognition of this highly underdeveloped component of the ecosystem.

Turning to the question of a focus for this innovation programme, and asking how it might best respond to the different patterns of activity and value that coordinate the life of an ecosystem (principle three), it becomes clear that the goal of helping improve the quality of life for people living with dementia and those around them cannot be achieved through a single innovation-orientation alone. A mixed approach is needed if the plurality of ambitions for the field are to be delivered—a meaningful response to the complexity of living with a dementia diagnosis today. A further specification of the SIIFE framework proposed here would be the support for "mixed" cohorts of projects, with the Formation stage tackling issues common to operating in a new dementia-focused, cross-sector innovation environment, and the Evolution stage offering tailored support toward specific markets or groups of ends users (i.e., in private, public, or third sector contexts). There are likely important benefits to be gained from aligning, rather than segregating different types of innovation activity, helping bodies of cross-sector knowledge to be developed and innovation programming to be conducted across sectors. A final specification would be to build multiple points of entry and exit into the innovation programme's five stages, transforming the programme from a singular "pipeline" to one that can accommodate already existing projects at different phases of development, each able to enter the programme stage best suited to them.

The fourth principle was to recognise the role mediation can play in engaging these myriad different patterns of life that constitute an ecosystem. As an emerging focus for cross-sector collaboration, many, often fundamental, differences in sectoral practices are now having to be contested: these include different positions on the values and priorities of care, the role of the arts and creativity in health intervention, the enabling or disempowering status of new technologies, and the place of dementia within models of ageing, disability, and human rights. The fragmented nature of work in the field can mean that whilst there is often a will to understand different points of view, there is little in place to support such perspective taking. In this, we identify a need for cross-sector enabled mediators to play a variety of roles across the proposed innovation programme, including helping to broker partnerships, reducing administrative burden in collaboration work, supporting R&D activities, working to instil parity in collaborations, and helping new project teams to embody the sectoral challenges of their project partners, and so on. Whilst these forms of support for collaborative production might not yet be formally codified, it may be that pressure to develop such roles in the health arena is beginning to emerge.

Finally, the principle of needing to develop an adaptive and sustainable ecosystem presence if effective and lasting interventions are to be made. A project-based culture in the dementia and creativity arena currently dominates, one that can, at best, only respond to present challenges, and has little capacity to support future planning or to anticipate the impact of changing demographics and advances in medicine and technology, for example, on an innovation landscape. What emerges is the potential for a cross-sector operating Hub-led approach to develop leadership in the field and enable the transition from a culture of "making do" to one that can both comprehensively respond to immediate needs and anticipate future challenges and opportunities—a simultaneous "three horizons" model (International Futures Forum, 2019). This describes a small adaptive Hub model operating as an innovation vehicle that can (1) become enabled in, and operate across, multiple sectors; (2) build and maintain trusted partner networks; (3) deliver innovation programming that instils core values in the innovation work it supports (such as around human rights and person-centred care); (4) adapt to changing innovation landscapes as a function of its own work and the work of others; (5) drive culture-change in sectoral practices that obstruct cross-sector working; and (6) strive to operate beyond time-limited sectoral or institutional programming to deliver ongoing commitment to this important challenge area.

5. AN OPEN ECOSYSTEM INNOVATION BLUEPRINT FOR THE DEMENTIA AND CREATIVITY ARENA

With this analysis in mind, a blueprint for an innovation programme in the dementia and creativity arena can be put forward, one that fully delivers on the open ecosystem innovation principles proposed. Whilst concrete recommendations for a specific innovation programme itself will be made here (along the lines of the SIIFE framework), the question of its delivery mechanism—i.e., the form of the Hub itself—is more open, and will be addressed in the Discussion (section 6). The blueprint is summarised in **Figure 1**.

Stage One—Ecosystem Investment

The first stage of the proposed innovation programme is Ecosystem Investment, which has the aim of strengthening those partners within a regional ecosystem already serving key

1 Ecosystem Investment

Hub support for organisations working with people living with dementia to build capacity for future innovation work.

2 Scoping and interpretation

Hub activities aimed at idea discovery and concept development around critical near- and far-horizon challenges.

3 Idea Development

Hub activities to broker new cross-sector partnerships and support teams in the exploration of innovative new ideas.

4 Project Formation

High value, intensive project support through a Creative Producer, resulting in advanced prototypes and an evidence base.

5 Evolution Support

Hub activities that help a project team take their work forward through accessing funding and support external to the Hub.

FIGURE 1 | The blueprint for open ecosystem innovation developed through Dementia Connect for the dementia and creativity arena (detailed in section 5). Outlining a single innovation cycle, the blueprint describing five stages: (1) ecosystem investment; (2) scoping and interpretation; (3) idea development; (4) project formation; and (5) evolution support.

connecting, advocacy, mediation, and training activities. Funding would help such organisations to develop further capacity in the field and lay the foundations for new cross-sector partnerships that can deliver innovation activities to the communities who need them in the long-term. It is a key expression of shifting an innovation focus away from the delivery of targeted solutions toward growing an ecosystem that is itself "innovation ready". Such a programme might be delivered through a rolling, competitive scheme for short-duration projects (of up to 4 months) each worth between £5–7K[5]. Funding might serve, for example, to help existing partnerships (already poised to advance their work further) to share best practice and key learning; run micro-residences to enable information gathering and engagement with key influencers; drive network intensification to promote organisational stability and resilience; develop evidence-based evaluation and dissemination activities; and trial delivery of existing activities at an increased scale of operation. This type of engagement would benefit the Hub through generating invaluable on-the-ground sector insight, enabling the identification of "leading lights" for future collaborative activities, helping to build user-testing environments for future innovation work, and strengthening the Hub network overall. Delivered at scale, such a scheme might have a transformative effect on the field.

Stage Two—Scoping and Interpretation

This second stage marks the decision by a Hub to engage their partner network around a target theme, with sector scoping activities critical in establishing up-to-date, "live" multi-sector snapshots of pressing near- and far-horizon challenges or opportunities. The approach developed by the Design in Action Hub offers one suitable approach (Coulson and Woods, 2016; Design in Action, 2016, p. 6–8; Senior, 2018b, p. 22–27), with scoping activities placed prior to each innovation cycle through stakeholder workshops, design-led activities, formal/informal interviews, and multi-sector literature reviews. The Interpretation phase that follows Scoping work also requires a high degree of research excellence and sectoral knowledge from a Hub's core team to bring together insight from a complex, multi-sector landscape and shape it into sector-appropriate themed calls. Insight into broad themed areas suitable for new cross-sector collaborative partnerships has emerged through Dementia Connect's Development labs and research activities[6]. Identified themes included: stepping into a creative future (enriching creative, social, and inter-generational assets); building creative and dementia-friendly Environments; coping with transition (through creative, sense-making activities); empowering care (in the design and implementation of creative activities); innovation in information services (to advance new forms of information access, data ownership,

[5]An example of this approach can be found in the Dementia Engagement and Empowerment Project's Influencing and Working Together grant schemes (DEEP, 2017b).

[6]The innovation briefs of the "Transform ageing programme" has proven useful in validating and framing this work (Transform Ageing, 2018, p. 8, 10–23).

and identity protection); building networks and communities; and experimental horizons (exploring productive alignments between contemporary dementia research and creative practice). Each theme could serve as a vehicle for implementing or advancing learning from areas of policy, clinical practice, and university research.

Stage Three—Idea Development

Delivering on a themed call, the Idea Development stage would support the formation of new cross-sector partnerships prior to competitive entry into the Project Formation stage. For the AHRC Hubs, conducting Ideation activities over 1 or 2 days was deemed sufficient to form tentative new project teams, with post-event Hub support proving critical to refine project outlines and team composition (Senior, 2018b). In a dementia context, where cross-sector partnerships are more uncommon and partners may strongly differ in their experience of working with dementia, an initial period of collaborative engagement could be formative in helping new teams take some of the risks associated with project work in a difficult innovation space, test the strength of partnerships, and assess possibilities for longer-term collaborative activities. Hub support to broker teams and manage interactions will likely be valuable. The Idea Development stage could be delivered along the lines of Dementia Connect's own Development lab and CV model. Led by a creative producer, around 20–25 invitees would participate in an event designed to unpack the target theme, identify points of common interest, and develop new project ideas (outlining possible partners and roles, project incentives, and critical resources). A simple post-lab application (also open to external applicants) would enter teams into a competitive CV scheme for awards of £5–7 K (with a number of awards made for a variety of proposed project outputs). Project lead-time and delivery (around 5 months) would flexibly accommodate time-constraints faced by many in the field (particularly in the public and charitable sectors). Low-level project reporting combined with a collaborative project review would be mandatory at the conclusion of the Idea Development stage. Although an early developmental stage, project teams would be awarded IP, giving them confidence to take their ideas forward as a partnership (Senior, 2018c).

Stage Four—Project Formation

Tied to the same strategic theme as the Idea Development activities, Stage four Project Formation would deliver project teams through an extensive programme of collaborative R&D, enabling teams to establish a quality benchmark for cross-sector working in the field. A competitive entry process would determine stage participation, one open both to project teams emerging from earlier stages in the innovation programme and those external to the Hub from the wider ecosystem. Open to different team ambitions, project outputs from this stage might include product prototypes, an innovative service redesign, experimental research work—projects that may respond to local-needs or demonstrate potential for scalability. At this stage in the innovation cycle, it would be the needs common to all projects in navigating a complex multi-sector innovation space that would be the key focus of a Hub's support activities. Here, the AHRC REACT Hub Sandbox could serve as an effective model for this stage of project development: a 3 month programme led by a creative producer built around a backbone of workshops, business development support, prototype iteration, user testing, industry consultation, and public showcasing events (REACT, 2016, 18–19; Senior, 2018b). A cohort-based approach—enabling stronger exchange between project teams, advisors, mentors, industry experts, project users, and so on—has proven valuable in this space (Senior, 2018b). Coming out of Stage four, project teams should be equipped to take their ideas toward advanced development and be better aligned to other investment and support opportunities external to the Hub. This model of support should be understood as bringing an additional "ecosystem perspective" to the provision typical of incubator programmes, such as through intensive, and more extensive, peer-to-peer exchange (Moreton and Dovey, 2013; Dovey et al., 2014). Stage four would aim to deliver 40–60 K into each new project with the commitment to the wider inclusion of people living with dementia throughout project development fully costed (covering travel expenses and with participation remunerated, and so on). A cohort of around five new partnerships (consisting of small teams of 3–4) would enable the intensity, but also the intimacy, required of a Sandbox process. Finally, and reflecting the same principles discussed for Stage three Idea Development, project IP would be held by project teams.

Stage Five—Evolution Support

This final stage would see the Hub support teams toward advanced project realisation (such as market launch, or public-sector commissioning). Project teams entering into Stage five would be expected to have not only a viable project idea, but also the partnerships, assets, and evidence-base needed to convince potential funders of that viability. Projects from Stage four would compete for entry alongside those from the wider ecosystem at an equivalent stage of development.

Whilst a Hub might provide further financial support for project teams at this stage (particularly important for highly innovative cross-sector "benchmark" projects), a core activity must be to help engage project teams with other investment and support opportunities external to the Hub. For most projects, connecting into well-established forms of university R&D funding, business acceleration, tailored marketing, legal, and business advice for investment readiness, and so on, will be critical for their future development (including scaling, adoption, and diffusion activities). It is here in the wider ecosystem—beyond the Hub—where teams are better placed to access these forms of support (Senior, 2018b). Evidence from the AHRC Hubs programme indicates that continued and tailored Hub involvement through this transition (the well-documented "valley of death" between project prototype and "final product") will be critical (e.g., Senior, 2018c, p. 25). Here, a Hub can help broker connections with additional sector partners and support

programmes, help publicise new work through showcasing opportunities, facilitate project dissemination through sector-specific publications, and even help manage the reformulation of partnerships that might be required to take projects forward (Senior, 2018b, p. 30). Transitioning out of Hub support is very much project-dependent, a question of helping teams transition at the right time and pace for their ongoing development. Through the staged Hub support proposed, new project teams should be at an advantage in making that transition successfully. Further, with IP ownership in the hands of project teams, they will have greater control in how they decide to develop their work beyond the Hub. It is here, in Stage five, where new funding streams for the Hub itself might be developed, such as through taking an equity share in projects (see for example Design in Action, 2016, p. 40; Senior, 2018c).

6. DISCUSSION

This paper has addressed the development of five guiding principles for open ecosystem innovation and their application to the dementia and creativity arena through the research project Dementia Connect. These guiding principles point to a configuration of open activities that are maximally sensitive to (1) knowledge diversity in innovation work; (2) the consequences of adopting an open-orientation across all stages of innovation programming; (3) the value of deepening and broadening the targets of innovation activity; (4) the role of mediation in supporting cross-sector partnerships; and, (5) the importance of operating in an adaptive and sustainable manner in the long-term. In exploring the application of these ideas to the dementia and creativity field, Dementia Connect undertook a wide-reaching scoping exercise grounded in an engagement with individuals, organisations, and communities active in this arena. As such, it's overall result—the Hub-led open ecosystem innovation blueprint described in section 5—is tied to insight from knowledgeable partners with an interest in seeing a more collaborative and meaningful approach to cross-sector work. This is a blueprint that now needs to be tested in practice.

In thinking to this real-world application, we can ask what an effective vehicle for this Hub-led innovation programme might be, one that respects the ecosystem thinking that underlies it. The cross-sector innovation leadership role proposed for the Hub is dependent on it becoming fully ecosystem-embedded whilst attaining the degree of autonomy needed to hold a critical and functional distance from individuals sectors, i.e., establish a position that can help forge a shared trajectory amongst different sector partners united by common underlying interests (see principle 5, section 2). One approach would be to align it with an existing programme of community-embedded dementia support that carries with it a similar ethos around open innovation. The Meeting Centres Support programme (MCSP) developed in the Netherlands in the 1990s, and now emerging in the UK, offers one such alignment (Brooker et al., 2017). The MCSP enables communities (typically of around 5,000 inhabitants over the age of 65) to design and operate a centre for the support of people living with dementia and their families. Open to contributions from all interested parties, centres are configured to the needs and opportunities of their locality, operating out of existing community sites. They serve as a social club, offer evidence-based post-diagnostic psychosocial interventions (physical, social, creative, and cognitive activities), "Understanding Dementia" meetings, and make regular opportunities available for people living dementia and their care partners to meet up with staff and talk through the changes happening to their lives. The programme now supports 144 centres in the Netherlands, with national infrastructure in place for local groups to bring new centres on stream, develop a business plan, and secure staff positions (Brooker et al., 2017, p. 8). Two UK centres are now in operation, one in Droitwich spa (Worcestershire) and Leominster (Herefordshire) (Brooker et al., 2017).

Once in place, Meeting Centres act to strengthen local networks of dementia-aware partners across a variety of different sectors, from the creative arts to retail. What the MCSP establishes is the community foundation on which an innovation Hub might be built—indeed, the foundation without which a Hub simply could not operate. With the demand for its services established, a Meeting Centre might then support an innovation Hub as a second developmental phase to its work. For example, run as a community interest company (an autonomous enterprise with broad fund-raising powers that enshrines a social mission consistent with the open innovation ethos proposed here), a Hub entity could work to open up access to different sector funding streams or lay the foundation for more bespoke forms of support. Targeting (and aggregating) external funding sources may enable key elements of the innovation cycle to be delivered (Stages 3-to-5 of the cycle, for example, find parallel in many current models of research and innovation support). An equity share in projects or the development of Hub spin-outs (e.g., focusing on innovation brokerage and consultancy) may generate additional income streams in the long-term, one route to a sustainable future. Returning to the example of health commissioning in England given as a case study in section 4.2, such a Hub could deliver the horizon-scanning activities that commissioners are currently hard-pressed to undertake; deliver the operational activities that link on-the-ground dementia realities with targeted innovation activity best suited to commissioning interests; and broker contact with innovative new partners. In corollary, project teams would be supported in developing and testing innovative new work, so building the evidence base needed to boost their visibility/credibility in the commissioning process.

Working with a variety of partners in the ecosystem, the establishment of a small, adaptive innovation Hub would signal a shift from delivering innovation activities that focus on "managing the present" to those that can also anticipate challenges and help build the communities of the future. The activities of the Hub would serve to further strengthen and expand the regional network of partners, potentially operating across multiple Meeting Centres in a region or a city to deliver impact more fully. This could be one route to embedding a Hub's work within its

ecosystem and developing a sustainable innovation approach in the long-term, one that could keep responding to the complex reality—now and in the future—of living with a dementia diagnosis.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of UWE's principles on Human Participant Research and the UWE Research Ethics Committee with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the UWE Research Ethics Committee.

AUTHOR CONTRIBUTIONS

TS led on the design and analysis of the Dementia Connect project, writing, and submitting the manuscript.

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REFERENCES

ADI and GCA. Dementia Innovation Readiness Index (2017). *Alzheimer's Disease International and Global Coalition on Ageing*. Available online at: https://globalcoalitiononaging.com/wp-content/uploads/2018/05/gcoa-adi-dementia-index.pdf (Accessed August 28, 2018).

AHRC, (2017). *Creative Exchanges: The AHRC Knowledge Exchange Hubs For The Creative Economy Report*. Swindon: AHRC. Available online at: https://ahrc.ukri.org/documents/project-reports-and-reviews/creative-exchanges-ke-hubs/ (Accessed August 28, 2018).

All-Party Parliamentary Group on Arts Health and Wellbeing (2017). *Inquiry Report: Creative Health: The Arts for Health and Wellbeing*. London: APPG. Available online at: https://www.artshealthandwellbeing.org.uk/appg-inquiry/ (Accessed August 28, 2018).

Alzheimer's Society (2017). *The Dementia Guide: Living Well After Diagnosis*. London: Alzheimer's Society. Available online at: https://www.alzheimers.org.uk/sites/default/files/2018-07/AS_NEW_The%20dementia%20guide_update%203_WEB.pdf (Accessed August 28, 2018).

Amin, A., and Cohendet, P. (2004). *Architectures of Knowledge: Firms, Capabilities, and Communities*. Oxford: Oxford University Press.

Anand, R., Gill, K. D., and Mahdi, A. A. (2014). Therapeutics of Alzheimer's disease: past, present and future. *Neuropharmacology*, 76, 27–50. doi: 10.1016/j.neuropharm.2013.07.004

Arts Council of Wales (2018). *Arts and Health in Wales: A Mapping Study of Current Activity. Vol. 1: Analysis, Findings and Proposals*. Cardiff: Arts Council of Wales. Available online at: http://www.arts.wales/arts-in-wales/celfyddydau-ac-iechyd?diablo.lang=eng (Accessed August 28, 2018).

Bagwell, S., Bull, D., Joy, I., and Svistak, M. (2014). *Opportunities for Alignment: Arts and Cultural Organisations and Public Sector Commissioning*. London: New Philanthropy Capital. Available online at: https://www.ncvo.org.uk/images/documents/practical_support/public_services/cultural-commissioning/full-report-opp-for-alignment-arts-cultural-orgs-public-sector.pdf (Accessed August 28, 2018).

Bartlett, R., and O'Connor, D. (2007). From personhood to citizenship: broadening the lens for dementia practice and research. *J. Aging Studies* 21, 107–118. doi: 10.1016/j.jaging.2006.09.002

Basting, A., Towey, M., and Rose, E. (2016). *The Penelope Project: An Arts-Based Odyssey to Change Elder Care*. Iowa City, IA: University of Iowa Press.

Batsch, N. L., and Mittelman, M. S. (2012). *World Alzheimer Report 2012: Overcoming the Stigma of Dementia*. London: Alzheimer's Disease International. Available online at: https://www.alz.co.uk/research/WorldAlzheimerReport2012.pdf (Accessed August 28, 2018).

Beard, R. L. (2011). Art therapies and dementia care: a systematic review. *Dementia* 11, 1–24. doi: 10.1177/1471301211421090

Boaden, A. (2016). *Fix Dementia Care Hospitals. London: Alzheimer's Society*. Available online at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/fix_dementia_care_-_hospitals.pdf (Accessed August 28, 2018)

Bria, F., and Baeck, P. (2015). *Growing a Digital Social Innovation Ecosystem for Europe*. London: Nesta. Available online at: https://media.nesta.org.uk/documents/dsireport.pdf (Accessed August 28, 2018).

Brooker, D., Evans, S., Evans, S., Watts, M., and Dröes, R.-M. (2017). *Meeting Centres Support Programme UK: Overview, Evidence and Getting Started*. Worcester:Association for Dementia Studies. Available online at: https://www.worcester.ac.uk/documents/Meeting_Centres_Support_Progamme_Overview_evidence_and_getting_started_Conference_booklet.pdf (Accessed August 28, 2018).

Bullinger, A. C., Rass, M., Adamczyk, S., Moeslein, K. M., and Sohn, S. (2012). Open innovation in health care: analysis of an open health platform. *Health Policy*. 105, 165–175. doi: 10.1016/j.healthpol.2012.02.009

Camic, P. M., and Chatterjee, H. J. (2013). Museums and art galleries as partners for public health interventions. *Perspect. Public Health* 133, 66–71. doi: 10.1177/1757913912468523

Chesbrough, H. W. (2003). *Open Innovation: the New Imperative for Creating and Profiting from Technology*. Boston, MA: Harvard Business Press.

Chesbrough, H. W., Vanhaverbeke, W., and West, J. (2006). *Open Innovation: Researching a New Paradigm*. New York, NY: Oxford University press.

Coulson, S., and Woods, M. (2016). "Scoping: exploring a collective R&D process for entrepreneurs, microenterprises, and SMEs," in *The 20th DMI: Academic Design Management Conference Proceedings*. (Boston, MA), 435–459.

Creativeworks London (2016). *Creativeworks London Evaluation Report: A Knowledge Exchange Hub for the Creative Economy*. eds B. I Matheson-Pollock, E. Jubb, M. Morretto, J. Riedel, E. Roberts, M. Shiach et al. Available at http://www.creativeworkslondon.org.uk/cw-news/creativeworks-london-evaluation-report-a-knowledge-exchange-hub-for-the-creative-economy/

Crossick, G., and Kaszynska, P. (2016). *Understanding the Value of Arts and Culture The AHRC Cultural Value Project*. Swindon: AHRC. Available online at: https://ahrc.ukri.org/research/fundedthemesandprogrammes/culturalvalueproject/ (Accessed August 28, 2018).

DEEP (2017a). *Guidelines for Meaningful Participation of People With Lived Experience of Dementia*. Available online at: https://dementiaconnect.dcrc.org.uk/wp-content/uploads/sites/9/2018/08/DEEP-FINAL.pdf (Accessed January 30, 2019).

DEEP (2017b). *DEEP Grants 2017 – England, Wales and Northern Ireland*. Available online at: http://dementiavoices.org.uk/2017/05/deep-grants-2017-england-wales-and-northern-ireland/ (Accessed August 28, 2018).

Dementia Action Alliance (2019). *DAA: Dementia Action Alliance*. Available online at: https://www.dementiaaction.org.uk/ (Accessed February 12, 2019).

Dementia Connect (2018). *Dementia Connect: Working Together to Build a Dementia Innovation Cluster*. Available online at: https://dementiaconnect.dcrc.org.uk/ (Accessed January 30, 2019).

Dementia Friends (2017). *Dementia Friends: An Alzheimer's Society Initiative*. Available online at: https://www.dementiafriends.org.uk/ (Accessed August 28, 2018).

Department of Health and Social Care (2016). *Prime Minister's Challenge on Dementia 2020 Implementation Plan*. London: Department of Health. Available online at: https://www.gov.uk/government/publications/challenge-on-dementia-2020-implementation-plan (Accessed August 28, 2018).

Design in Action (2016). *Design in Action: A New Economy of Knowledge Exchange*. Dundee University: Design in Action. Available online at: http://www.designinaction.com/wp-content/uploads/2016/12/DiA-Final-Report.pdf (Accessed August 28, 2018).

Dixon-Woods, M., Amalberti, R., Goodman, S., Bergman, B., and Glasziou, P. (2011). Problems and promises of innovation: why healthcare needs to rethink its love/hate relationship with the new. *BMJ Qual. Saf. 20 (Suppl.* 1), 47–51. doi: 10.1136/bmjqs.2010.046227

Dovey, J., Moreton, S., Sparke, S., and Sharpe, B. (2014). *Curating Connectivity – REACT Working Paper No.3*. Bristol: REACT Hub. Available online at: http://www.react-hub.org.uk/sites/default/files/publications/WORKING%20PAPER%203%20Curating%20Connectivity.pdf (Accessed August 28, 2018).

Dovey, J., Pratt, A. C., Moreton, S., Virani, T., Merkel, J., and Lansdowne, J. (2016). *Creative Hubs: Understanding the New Economy*. London: British council. Available online at: https://creativeconomy.britishcouncil.org/media/uploads/files/HubsReport.pdf (Accessed August 28, 2018).

Dowlen, R., Keady, J., Milligan, C., Swarbrick, C., Ponsillo, N., Geddes, L., et al. (2017). The personal benefits of musicking for people living with dementia: a thematic synthesis of the qualitative literature. *Arts Health*. 10, 197–212. doi: 10.1080/17533015.2017.1370718

Dowling, A. (2015). *The Dowling Review of Business-University Research Collaborations*. London: BIS. Available online at: https://www.gov.uk/government/publications/business-university-research-collaborations-dowling-review-final-report (Accessed August 28, 2018).

East Dunbartonshire Council (2014). *Co-production With People Living With Dementia*. Glasgow: East Dunbartonshire Council. Available online at http://www.govint.org/fileadmin/user_upload/publications/Present_Project_Report_2014.pdf (Accessed August 28, 2018).

Equality and Human Rights Commission (2011). *Close to Home An Inquiry into Older People and Human Rights in Home Care*. Equality and Human Rights Commission. Available online at: https://www.equalityhumanrights.com/en/publication-download/close-home-inquiry-older-people-and-human-rights-home-care (Accessed August 28, 2018).

Facer, K., and Enright, B. (2016). *Creating Living Knowledge: The Connected Communities Programme, Community-University Relationships and the Participatory Turn in the Production of Knowledge*. Bristol: University of Bristol/AHRC. Available online at https://connected-communities.org/wp-content/uploads/2016/04/Creating-Living-Knowledge.Final_.pdf (Accessed August 28, 2018).

Fuller, M. (2005). *Media Ecologies: Materialist Energies in Art and Technoculture*. Cambridge, MA: The MIT Press.

Gabriel, M., Stanley, I., and Saunders, T. (2017). *Open Innovation in Health: A Guide to Transforming Healthcare Through Collaboration*. London: Nesta. Available online at https://media.nesta.org.uk/documents/open_innovation_in_health_0.pdf (Accessed August 28, 2018).

Gould, V. F. (2013). *Reawakening the Mind: Evaluation of Arts4Dementia's London Arts Challenge in 2012*. London: Arts4Dementia. Available online at https://www.museumsassociation.org/download?id=1062531 (Accessed August 28, 2018).

Gray, K., Evans, S. C., Griffiths, A., and Schneider, J. (2017). Critical reflections on methodological challenge in arts and dementia evaluation and research. *Dementia* 17, 775–784. doi: 10.1177/1471301217734478

Harris, J., and Rowley, L. (2017). *Working With Public Service Commissioners: A Quick Guide for the Arts and Cultural Sector*. London: NCVO. Available online at https://knowhownonprofit.org/funding/commissioning/cultural-commissioning/resources-developed-by-the-cultural-commissioning-programme/WorkingWithCommissioners.pdf (Accessed August 28, 2018).

Herholz, S. C., Herholz, R. S., and Herholz, K. (2013). Non-pharmacological interventions and neuroplasticity in early stage Alzheimer's disease. *Expert Rev. Neurother.* 13, 1235–1245. doi: 10.1586/14737175.2013.845086

Hippel, E. V. (2005). *Democratizing Innovation*. Cambridge, MA; London: MIT Press. doi: 10.7551/mitpress/2333.001.0001

Innovate Dementia (2019). *Innovate Dementia: Innovative Care for Persons With Dementia*. Available online at: http://www.innovatedementia.com/en (Accessed January 25, 2019).

International Futures Forum (2019). *Three Horizons. iffpraxis.com*. Available online at http://www.iffpraxis.com/three-horizons (Accessed January 25, 2019).

Kane, M., and Cook, L. (2013). *Dementia 2013: The Hidden Voice of Loneliness*. London: Alzheimer's Society. Available online at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/dementia_2013_the_hidden_voice_of_loneliness.pdf (Accessed August 28, 2018).

Khoury, R., Patel, K., Gold, J., Hinds, S., and Grossberg, G. T. (2017). Recent Progress in the pharmacotherapy of Alzheimer's Disease. *Drugs Aging* 34, 811–820. doi: 10.1007/s40266-017-0499-x

Kontos, P., Miller, K. L., and Kontos, A. P. (2017). Relational citizenship: supporting embodied selfhood and relationality in dementia care. *Soc Health Illn*. 39, 182–198. doi: 10.1111/1467-9566.12453

Lakey, L., Chandaria, K., Quince, C., Kane, M., and Saunders, T. (2012). *Dementia 2012: A National Challenge*. London: Alzheimer's Society, Available online at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/alzheimers_society_dementia_2012-_full_report.pdf (Accessed August 28, 2018).

Lester, R. K., and Piore, M. J. (2004). *Innovation–the Missing Dimension*. Cambridge, MA: Harvard University Press.

Malmberg, K., and Vaittinen, I. (Eds) (2017). *Living Lab Methodology Handbook. U4IoT Consortium*. Available online at: https://u4iot.eu/pdf/U4IoT_LivingLabMethodology_Handbook.pdf (Accessed August 28, 2018).

Markusen, A., Gadwa, A., Barbour, E., and Beyers, W. (2011). *California's Arts and Cultural Ecology*. San Francisco, CA: James Irvine Foundation. Available online at: http://annmarkusen.com/wp-content/uploads/2013/01/ca-arts-culture.pdf (Accessed February 12, 2019).

McNeil, C., and Hunter, J. (2014). *The Generation Strain Collective Solutions to Care in an Ageing Society*. London: Institute for Public Policy Research. Available online at: https://www.ippr.org/files/publications/pdf/generation-strain_Apr2014.pdf (Accessed August 28, 2018).

Moreton, S., and Dovey, D. (2013). *Curating Collaboration: The Experience of Collaborative Innovation in REACT – REACT Working Paper No.2*. Bristol: REACT Hub. Available online at: http://www.react-hub.org.uk/sites/default/files/publications/curating%20collaboration_final.pdf

Mukadam, N., Livingston, G., Rantell, K., and Rickman, S. (2014). Diagnostic rates and treatment of dementia before and after launch of a national dementia policy: an observational study using English national databases. *BMJ Open* 4:e004119. doi: 10.1136/bmjopen-2013-004119

Pratt, A. C. (2014). *Putting Knowledge in (its) Place: Knowledge Exchange/Transfer and Clustering – Creativeworks London Working Paper No.5*. London: City University London. Available online at: http://www.creativeworkslondon.org.uk/wp-content/uploads/2013/11/PWK-Working-Paper-5.pdf (Accessed August 28, 2018).

Prince, M., Comas-Herrera, A., Knapp, M., Guerchet, M., and Karagiannidou, M. (2016). *World Alzheimer Report 2016: Summary Sheet*. London: Alzheimer's Disease International, 2016. Available online at: https://www.alz.co.uk/research/WorldAlzheimerReport2016.pdf

Prince, M., Knapp, M., Guerchet, M., McCrone, P., Prina, M., Comas-Herrera, A., et al. (2014). *Dementia UK Update 2014*. London: Alzheimer's Society. Available online at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/dementia_uk_update.pdf (Accessed August 28, 2018).

REACT (2016). *REACT Report 2012–2016*. Bristol: REACT Hub. Available online at: http://www.react-hub.org.uk/publications/react-report/ (Accessed August 28, 2018).

Robles, A. G., Hirvikoski, T., and Schuu, D. (2015). *Introducing ENoLL and its Living Lab Community*. Brussels: European Network of Living Labs. Available online at: https://issuu.com/enoll/docs/enoll-print (Accessed August 28, 2018).

Sargsyan, G., Meijer, G., Janssen, W., van Buuren, R., Husmann, E., Ali-Vehmas, T., et al. (2011). (Editor) *Socio-Economic Impact of Open Service Innovation*. Brussels: European Commission Information Society and Media. Available online at: https://ec.europa.eu/digital-single-market/en/news/socio-economic-impact-open-service-innovation-smart-20090077 (Accessed August 28, 2018).

Senior, T. J. (2016). *Connecting to Innovate: A Preliminary Report on the Achievements of the AHRC Knowledge Exchange Hubs for the Creative Economy*. Bristol: University of the West of England. Available online at: http://www.react-hub.org.uk/sites/default/files/publications/Connecting-to-Innovate-Final.pdf (Accessed August 28, 2018).

Senior, T. J. (2018a). *Report 1: The Arts and Humanities in the Creative Economy: Core Learning from the AHRC Creative Economy Hubs Programme*. Bristol: University of the West of England. Available online at: https://dementiaconnect.dcrc.org.uk/reports-media/ (Accessed August 28, 2018).

Senior, T. J. (2018b). *Report 2: A Framework for University-led Creative Economy Innovation: Core Learning from the AHRC Creative Economy Hubs programme*. Bristol: University of the West of England. Available online at: https://dementiaconnect.dcrc.org.uk/reports-media/ (Accessed August 28, 2018).

Senior, T. J. (2018c). *Report 3: The Hub as Organisational Model in the Creative Economy: Core Learning from the AHRC Creative Economy Hubs Programme*. Bristol: University of the West of England. Available online at: https://dementiaconnect.dcrc.org.uk/reports-media/ (Accessed August 28, 2018).

Senior, T. J., Moreton, S., and Dovey, J. (2015). *The Arts and Humanities in the Internet of Things – REACT Working Paper*. Bristol: REACT Hub. Available online at: http://www.react-hub.org.uk/sites/default/files/publications/AH%20in%20IoT.pdf (Accessed February 12, 2019)

Sharpe, B. (2010). *Economies of Life: Patterns of Health and Wealth*. Charmouth: Triarchy Press.

Shiach, M., Nakano, D., Virani, T., and Poli, K. (2017). *Report on Creative Hubs and Urban Development Goals (UK/Brazil)*. London: Queen Mary University. Available online at: http://www.networkcentre.uk/wp-content/uploads/2018/02/Creative-Hubs-and-Urban-Development-Goals-UK-Brazil_Published.pdf (Accessed August 28, 2018).

The Creative Exchange (2016). *The Creative Exchange Final Report to the AHRC*. Lancaster: Lancaster University. Available online at: http://thecreativeexchange.org/activity/creative-exchange-final-report-published (Accessed August 28, 2018)

The King's Fund (2017). *The NHS: How Providers are Regulated and Commissioned*. London: The King's Fund. Available online at: https://www.kingsfund.org.uk/audio-video/how-new-nhs-structured (Accessed August 28, 2018).

Thomas, G. E. C., Crutch, S. J., and Camic, P. M. (2018). Measuring physiological responses to the arts in people with a dementia. *Int. J. Psychophysiol.* 123, 64–73. doi: 10.1016/j.ijpsycho.2017.11.008

Transform Ageing (2018). *Delivering a Better Experience for Later Life*. London: Transform Ageing Consortium. Available online at: https://www.unltd.org.uk/uploads/general_uploads/TA_Innovation_Briefs_Brochure_180518u.pdf (Accessed August 28, 2018).

Tsekleves, E., Bingley, A., Escalante, M. L., and Gradinar, A. (2015). *Ageing Playfully Design Report*. Lancaster: Lancaster University. Available online at: http://imagination.lancs.ac.uk/outcomes/Ageing_Playfully_Design_Report (Accessed August 28, 2018).

UWE Bristol (2018). *Creative Producing. Courses.uwe.ac.uk*. Available online at: https://courses.uwe.ac.uk/P3101/creative-producing (Accessed August 28, 2018)

Virani, T. E. (2015a). *Mechanisms of Collaboration Between Creative Small, Medium and Micro-Sized Enterprises and Higher Education Institutions: Reflections on the Creativeworks London CV Scheme (Creativework London Working Paper No. 4)*. London: Queen Mary University. Available online at: http://www.creativeworkslondon.org.uk/wp-content/uploads/2013/11/PWK-Working-Paper-4-SEO.pdf (Accessed August 28, 2018).

Virani, T. E. (2015b). *Do Voucher Schemes Matter in the Long Run? A Brief Comparison of Nesta's Creative Credits and Creativeworks London's CV schemes (Creativework London Working Paper No. 10)*. London: Queen Mary University. Available online at: http://www.creativeworkslondon.org.uk/wp-content/uploads/2013/11/Working-Paper-10.pdf (Accessed August 28, 2018).

Virani, T. E. (2018). *Dementia Connect: CVs Scheme Evaluation Report*. Bristol: Dementia Connect. Available online at: https://dementiaconnect.dcrc.org.uk/reports-media/ (Accessed August 28, 2018).

Ward, J. (2016). *Social Prescribing at a Glance. North West England: A Scoping Report of Activity for the North West*. Leeds: Health Education England. Available online at: https://www.hee.nhs.uk/sites/default/files/documents/Social%20Prescribing%20at%20a%20glance.pdf (Accessed August 28, 2018).

Wass, S., and Vimarlund, V. (2016). Healthcare in the age of open innovation—a literature review. *Health Inf. Manage. J.* 45, 121–133. doi: 10.1177/1833358316639458

West, J., Salter, A., Vanhaverbekec, W., and Chesbrough, H. (2014). Open innovation: the next decade. *Res. Policy* 43, 805–811. doi: 10.1016/j.respol.2014.03.001

WHO (2017). *Global Action Plan on the Public Health Response to Dementia 2017-2025*. Geneva: World Health Organisation. Available online at: https://www.who.int/mental_health/neurology/dementia/action_plan_2017_2025/en/ (Accessed August 28, 2018).

Windle, G. (2018). Exploring the theoretical foundations of visual art programmes for people living with dementia. *Dementia* 17, 702–727. doi: 10.1177/1471301217726613

Windle, G., Gregory, S., Newman, A., Goulding, A., O'Brien, D., and Parkinson, C. (2014). Understanding the impact of visual arts interventions for people living with dementia: a realist review protocol. *Syst. Rev.* 3:91. doi: 10.1186/2046-4053-3-91

Windle, G., Joling, K. J., Howson-Griffiths, T., and Woods, B. (2018). The impact of a visual arts program on quality of life, communication, and well-being of people living with dementia: a mixed-methods longitudinal investigation. *Int. Psychogeriatr.* 30, 409–423. doi: 10.1017/S1041610217002162

Windle, G., Newman, A., Burholt, V., Woods, B., O'Brien, D., and Baber, M., et al. (2016). Dementia and Imagination: a mixed-methods protocol for arts and science research. *BMJ Open* 6, 1–11. doi: 10.1136/bmjopen-2016-011634

Woods, L., Pendleton, J., Smith, G. M., and Parker, P. (2015). *Working Collaboratively to Support People Living with Dementia*. Liverpool: Liverpool John Moores University. http://researchonline.ljmu.ac.uk/4149/ (Accessed August 28, 2018).

Woods, L., Smith, G. M., Pendleton, J., and Parker, A. D. (2013). *Innovate Dementia Baseline Report: Shaping the Future for People Living with Dementia*. Liverpool: Liverpool John Moores University. Available online at: http://researchonline.ljmu.ac.uk/4152/1/Innovate%20Dementia%20Baseline%20report.pdf (Accessed August 28, 2018).

Woods, M., Marra, M., and Coulson, S. (2015). *Design in Action Knowledge Exchange Process Model*. Dundee: University of Dundee. Available online at: https://discovery.dundee.ac.uk/ws/portalfiles/portal/7754918/Woods_Marra_Coulson_2015.pdf (Accessed August 28, 2018).

Woodward, M., Arthur, A., Darlington, N., Buckner, S., Killett, A., Thurman, J., et al. (2018). The place for dementia-friendly communities in England and its relationship with epidemiological need. *Int. J. Geriatr. Psychiatry* 34, 67–71. doi: 10.1002/gps.4987

Wootten, J., Chandaria, K., Graty, C., Newby, C., Harkin, S., and Gascoigne, A. (2016). *Becoming a Dementia-Friendly Retailer: A Practical Guide*. London: Alzheimer's Society. Available online at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/dementia_friendly_retail_guide.pdf (Accessed August 28, 2018).

Young, R., Camic, P. M., and Tischler, V. (2016). The impact of community-based arts and health interventions on cognition in people with dementia: a systematic literature review. *Aging Ment. Health* 20, 337–351. doi: 10.1080/13607863.2015.1011080

Zeilig, H., West, J., and van der Byl Williams, M. (2018). Co-creativity: possibilities for using the arts with people with a dementia. *Q. Ageing Older Adults* 19, 135–145. doi: 10.1108/QAOA-02-2018-0008

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Growth Through Education: The Narratives of Older Adults

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The focus of Narrative Gerontology is placed on stories about the aging process. In the present paper, the learning of older adults in a Senior University context is captured by means of stories written by the participants themselves. The examination of older adults' stories, as they look back on life or any narrative that connected to a specific area of life, can contribute to our understanding of growth later in life. The aim of the study is to examine how growth manifests itself later in life. Participants at Senior University were asked to share their experiences of education later in life. Participation was voluntary and the identity of each participant was kept anonymous for the purpose of the research project. Fifty-three stories written by Senior University participants (n = 38 women and 15 men) were analyzed according to: (i) an inductive analysis of the stories that resulted in a description of the main topics addressed in the stories, and (ii) a deductive analysis that invoked a theoretical framework concerning the existential aspects of older adults' learning, including "corporeality," "relationality," "spatiality," "temporality," and "materiality." The two analyses were compared, and it was noted that "relationality" and "spatiality" corresponded to the educational experiences in the stories. "Relationality" was observed to be concerned with the social dimensions of life; but in the context of Senior University, "relationality" was strongly intertwined with the learning process. "Spatiality" addressed how older adults relate to physical- and mental space. Participation at Senior University entailed an expansion of both physical- and mental space for the participants. A number of tensions were identified in the stories. One the one hand, the stories can be interpreted as illustrations of moving forward and embracing continued growth and development. On the other hand, the stories can be interpreted as illustrations of resistance toward aging and decline. Since life is complex and contradictory, multiple, and even contradictory plots, co-exist in life stories.

Keywords: narrative gerontology, narrative, story, older adults, older adults' learning, the aging process, Senior University, university studies

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INTRODUCTION

The story of old age used to be characterized by themes of decline—resulting in the end of the story and the end of a person's life. However, since the proportion of older people is on the increase in many countries, we observe many people who have reinvented their lives, even in the later stages of life: "I know a woman who found a new love and got married when she was 80 years of age" or "I knew a man who, at 96, said that you have to keep moving forward." Anecdotal, perhaps, but these

stories resonate with a phenomenon that we can currently see in society; namely that "old age," as a stage in life, is being extended. People are spending this stage of life in different ways. This new situation calls for alternative frameworks for the conceptualization of "old age," and in response to this call, narrative gerontology is introduced in this paper so as to provide new perspectives on learning later in life. The aim is to explore and interrogate how growth manifests itself later in life and ask: *What do stories about participation in education provided by older adults reveal about the aging process?*

NARRATIVE GERONTOLOGY

Narrative Gerontology is a research approach that embraces storied dimensions in studies of aging. The metaphor, "life as story," can be exploited so as to gain insights into the aging process itself, as well as how this process can be studied (Ruth and Kenyon, 1996; Kenyon and Randall, 1999). The life story, compared to fiction, does not necessarily follow a traditional dramatic structure. Although a life story can be framed within a grand narrative, it is more common that life stories are constituted of fragments and parts of memories. The presentation of a person's life by means of a narrative includes events of that person's "raw existence," which are embedded in contexts and connected to the individual's perception of identity (Randall and Kenyon, 2004). How we tell stories about our lives has impact on what we learn, and, in turn, what we learn influences how we live our lives. "But the relationship between life, self, story, and learning is a complicated one." (Goodson et al., 2010, p. 2).

Recognizing the transformative effects of stories, means that a narrative can be thus understood as a reflection of an internal view of development and aging. However, the story is also involved in the process itself. The examination of different narratives, for example, the narratives connected to work, family, religion, or the self, can provide a new understanding of the aging process (Kenyon and Randall, 1999). To narrate one's life story, or just a part of one's life story, is to engage in a process of becoming. To be encouraged to tell a story, and to move beyond the initial "this is the story-of-my-life," holds the potential to strengthen an individual's resilience (Randall et al., 2015). It has been suggested that a person's willingness to share their life story later in life is indicative of their desire to live (Bruner, 1999). Independent of whether an older adult tells a story about what was or what is to become, the very act of creating a life story is indirectly saying that there is a life worth living. A life story emerges in the interplay between internal representations and the individual's social context (Kenyon and Randall, 1999) and is based on memory and an intention to re-present the past (Randall and Kenyon, 2004).

A story, like learning, is often triggered by an imbalance or tension of some sort (Bruner, 1999; Jarvis, 2004) and this imbalance provides the impetus for movement and potential transformation for the individual. According to the theory of gerotranscendence, the aging individual moves through a series of changes that imply redefinition of the self, as well as the individual's relationships to others. Gerotranscendence shifts the aging individual's perspective from a materialistic and rationalistic perspective to a metaperspective. This metaperspective is characterized by a more cosmic and transcendent view of the world. Tornstam (2011) claims an understanding of personal development later in life that is based on three dimensions of maturation: (i) the cosmic dimension, (ii) the self, and (iii) social and personal relationships. In this theory, the cosmic dimension addresses shifts in broad, existential perspectives where individuals connect their perceptions of the past, the present, and the future. The dimension of the self addresses how individuals view themselves and their experiences. The social and personal relationship dimension addresses how relationships with others are experienced and contextualized. The inclusion of existential aspects in studies of narratives about education can be worth pursuing because this approach is sensitive to the notions of "growth through education" and "growth through aging." In one study of older adults' learning experiences, five existential aspects were identified (Narushima et al., 2018). These five existential aspects are:

1. *Corporeality*. Assurance for the dissonant body and mind. Learning as a means of dealing with the changing body.
2. *Relationality*. A circle of camaraderie. Creating social relationships and networks.
3. *Spatiality*. A balance between physical and mental spaces. Narrowing or expanding physical and mental spaces.
4. *Temporality*. Integration of the past, present, and future. Themes involving temporality are "the past" (time directed inward), "the present" (time is free to fill), and "the future" (time left to grow).
5. *Materiality*. Beyond knowledge and skills, "things," tangible and intangible materiality, as extensions of our bodies and mind.

In the interrogation of the process of "becoming" in later life, narrative gerontology provides us with a useful framework which we can employ to understand gerotranscendence through the close examination older adults' stories. The analysis of these stories which constitute the empirical material in the present study was performed in two steps. First an inductive reading of the stories was performed, and then the stories were analyzed in the light of the five existential aspects suggested by Narushima et al. (2018) above. This approach allowed the researcher to connect the participants' voices (as present in the stories that they provided) to a theoretical framework that can be invoked in explaining certain existential aspects of gerotranscendence.

METHODS AND SETTING

The changing demographics of many countries reveal that their respective populations are expected to live long and relatively healthy lives after retirement. This is a new situation that needs to be examined closely because of the consequences it holds for these population groups. The role of education and learning, both in late working life and during retirement, is one area where we need more knowledge about the new situation.

Studying Learning That Takes Place Later in Life

In their review of how older adult learners are portrayed in the literature, Chen et al. (2008) criticize the normative descriptions found there, where older adults are presented as "able-bodied" and "free from cognitive decline." This portrayal of older adult learners "paints a picture of healthy, active retirees engaged in formal learning at universities and in Elderhostel, second careers, international travel, and so on." (Chen et al., 2008, p. 10–11) Today, researchers now address the diversity and variety that exists in the population group; "older adults." For example, Golding's (2015) research on the Men's Shed movement includes learning among older, poorly-educated men. Other studies have taken particular note of socio-demographic differences; including gender, age, and educational level (see Bjursell et al., 2017). The current paper does, however, address a somewhat privileged group; namely, older adults who are active and are able to retire comfortably. In many instances, this group represents white middle class retirees in Sweden. This group of people is of interest because: (i) they are used to participating in formal educational activities and, as a consequence of this experience, might hold different expectations when compared with people who have not had such experience, or perhaps they are unused to or have had a negative experience of previous formal education activities, and (ii) this group of people provide us with the opportunity to examine any connections that can be made between social class and old age, as we explore social change throughout life. The inclusion of 'social class' as a dimension is necessary if one wishes to understand the heterogeneity displayed by the group older adults, as well as the changes that are triggered by age (Formosa and Higgs, 2015; Higgs and Formosa, 2015). The examination of how older people view themselves in terms of "social class" may provide us with insight into what constitutes sources of "identity" and "changes in identity" later in life (Hyde and Jones, 2015). As suggested in the theoretical framework used in this paper, narratives provide us with access to sense-making processes, and therefore, participants at Senior University were asked to share their stories about participation in education.

Stories About Participation at Senior University

Senior University represents the University of the Third Age movement in Sweden (U3A). This social movement consist of a number of non-profit, volunteer associations which offer courses and activities to their members. In Sweden, there are currently 34 Senior Universities, with an enrolment of 25,000 members (participants) in total. Senior Universities are organized as associations which are formally linked to the Swedish Folkuniversitet system, one of 10 educational associations that exist in the Swedish folkbildning system (a general-level education system for adults). Senior Universities are historically linked to the higher education system, but also in the sense that the content of the activities that take place under the auspices of Senior University are of a somewhat high academic level. Consequently, Senior University in Sweden resonates more with the Francophone U3A model than with the Anglophone model (see Formosa, 2014).

The empirical material that was used in this paper is based on Senior University participants' stories about their experiences of learning later in life. Part of this study will be presented in an forthcoming book chapter (Bjursell, 2019), but note that the empirical material that is presented in this paper has not been discussed earlier. Participants at Senior University were contacted by a letter which was sent to the governing board of each of the 34 Senior Universities. Most boards responded by stating that they did not wish to forward the letter to their participants; but 5 boards did forward the letter. In the letter, the researcher asked the participants to share their stories about participating in education later in life. The letter stated that any forthcoming materials were to be used for research purposes, participation was voluntary, and, if they chose to submit their story, their identity would be kept anonymous. Fifty-three letters with personal stories about their experience of education in later life were received. These letters contained a range of types of responses; from a few short comments to one response of five pages in length. The 53 letters were written by 38 women and 15 men. The excerpts from the letters that are found in the Results section below are anonymous, but the gender of the participant is shared (indicated by "f" for female participants, and "m" for male participants) and each letter was assigned with a unique number so as to indicate to the reader when multiple excerpts or quotations are made from the same letter. The majority of the respondents who shared their thoughts and experiences were between 70 and 80 years old. The oldest respondent was 93 years of age. It should be pointed out that the collection of narratives and reflections that was shared with the author does not constitute a systematic investigation, but, rather, it establishes an exploratory effort to come to an understanding of why one might choose to participate in the Senior University movement. The stories are not presented as single stories in the result section. Instead, they are grouped thematically so as to illustrate a collective understanding of what participation at Senior University entails. The Results section remains close to the original narratives and many quotes are included so as to allow the reader to take note of the participants' own words and thoughts. As such, they are to be understood as narratives, rather than as a life story. Notwithstanding this caveat, the reader should note that they are narratives that represent an important part of each participant's life story: the part that education plays in the participants' lives.

This study was carried out in accordance with the recommendations of Good Research Practice provided by the Swedish Research Council. All of the participants in this study provided informed consent, in writing, in accordance with the Helsinki Declaration.

Strengths and Limitations

One strength of the narrative approach is that it allows for the analysis of the complexity and contradictions that occur in life. The use of the participants' written stories, rather than oral interviews, is another strength of the study, since this approach enables the participants to construct their story in the

way that they prefer. The analysis of the stories, however, was performed by the researcher; something of both a strength and a limitation. This method is a strength since the researcher is not emotionally invested in, or identifies with, the stories. It is a limitation since there is always the danger of presenting a mis-interpretation of the story, which could have been avoided if the participants were involved in the analysis. A suggestion for future studies is to involve the participants in the analysis in a way that combines distance (objectivity) and closeness (subjectivity). Another limitation of the study concerns the group of participants. The participants are from a single country (Sweden), they chose to participate themselves, and they attend Senior University. These factors usually entails that the participants are middle-class professionals. Although the results of the study may be generalized to describing personal growth later in life, the results of this paper should be understood as being representative for only the group under investigation.

RESULTS FROM THE INDUCTIVE ANALYSIS: VOICES ABOUT OLDER ADULTS' LEARNING

When one asks participants at Senior University why they are involved in the association's activities, two main points are raised: (i) participants wish to further their education by acquiring new knowledge, and (ii) they wish to be part of a social community with other, like-minded people. In some cases, the social aspect was a requirement for learning, since it provided a secure forum where the participants felt comfortable enough with each other to engage in dialogue.

Studies Aimed at *Bildung*

In addition to being a forum for an active life in general, the participants reported that Senior University provided them with opportunities for further study and continual education. Retirement can be a period in one's life when one can fulfill a life-long dream of continued studies or further reading on a subject which does not necessarily have a practical application. One female respondent wrote that she "greedily enrolled in a large number of courses, right from the start":

> *For the first term, I enrolled in ten courses, a beginners course in Italian, water color painting, Art History, and many others. But my main interest was, and remains, in the Writer's Workshop. I love to write, but like so many other people, my work was left at the back of the drawer. Already at my first Writer's Workshop, I dreamt of being the leader of a writer's circle—and, after some time, I became one. (2018, p. f19)*

It is not uncommon for women to suppress their desire for further studies during their careers and while they are raising their families, but when they retire, new opportunities for self-actualization are opened up to them:

> *So you ask, why should one wait? Duty, duty. Marking assignments on the weekends. Any free time was spent helping my dyslexic son and maintaining contact with my friends. Doing exercise. And, of course, the household chores. […] When I retired, I thought: Eventually! Now I can study whatever I like. I can write and study interesting subjects. After my retirement, I thus studied at university, some courses at Linköping, Stockholm, and most recently at Gothenburg, since it was only there that one can read for an International Master of Art with an emphasis on the theory of art. Whilst employed as a high school teacher, I taught the history of culture and philosophy and I am interested in art, but I never read Art History at university before. (2018, p. f07)*

Among the participants' narratives, there were also examples of individuals who wished to continue with their studies after retirement even though they had worked for a living and were engaged in further studies at the same time.

> *I had a full-time job, taught courses at night, and also attended courses, so it was a natural choice for me. (2018, p. f49)*

There are several directions that the participants' learning took. Some participants wished to engage in advanced studies where they continued to study an area which they had already mastered. Others wished to learn about a subject which they had not had previous opportunity to study. One aspect of further study after retirement that was observable in the narratives was the appreciation of the fact that it is important to keep one's brain active, especially in old age. For some participants, the study circle's open format did not suit them and, consequently, they enrolled at university. Finally, there were many participants who viewed Senior University as a forum for further discussion in a number of *different* areas. This view was maintained because they wished to satisfy their sense of curiosity, and to deal with existential questions in open discourse. With respect to different approaches to studying, the participants' reports were divided across three general approaches: (i) further studies after retirement, (ii) moving from Senior University to university studies, and (iii) broadened enlightenment.

Further Studies After Retirement

One reason why an individual might choose to participate in an activity at Senior University was that doing so provides stimulation and a context for learning activities.

> *In connextion with my retirement, I really thought about what I was going to spend my time and energy with, but also [I thought] about a context which I could be part of. when my children were young, I took some night courses in French for several years, but I stopped going to these classes when I was accepted as a doctoral student and realized that I would not have time for both my language studies and my doctoral studies. But when I retired, the dream to continue my French studies reappeared. I chose Senior University because I thought that their courses were serious but without the demand of obtaining university credits. (2018, p. f31)*

Many Senior University participants had previously achieved high levels of educational attainment and were used to being active in further education during their careers. In contrast to the professional development courses that they may have taken

during their working careers, language studies was a popular area that participants engaged in.

> *When I retired, I thought that I had the time to improve my German, which I used to some degree previously, but by then had become a bit rusty. The course is nice and rewarding, which is why I enrolled on the English course, a language which I am quite good at. For the second course, I was not looking to improve my language skills that much, but we do have interesting discussions and read enjoyable literature. (2018, p. m52)*

> *I am on a French course which is given once a week. On top of this, I spend some time doing homework, perhaps 3 to 5 hours per week, depending on the difficulty of the text and the grammar. I have also come into contact with L'Alliance Française via this course, an association which works to spread and support the French language and culture to anyone who is interested in this. This has provided me with an additional context where I can be part of with interesting talks and a pleasant fellowship. (2018, p. f31)*

Learning a language through conversational courses seemed to be a popular activity amongst the participants and whilst some people attended these courses for their social aspects and to keep their brains active, there were also some attendees who were interested in the practical use of advanced language skills.

> *I would really like to keep my knowledge of English alive. I have a daughter in the USA and frequently travel there, so I enrolled and I have continued [with my English studies] for several years now. (2018, p. f23)*

> *I am part of a group of people who are reading Modern English Literature at Senior University. We thus read newly published literature in English and discuss them in English in the group which meets every 3 weeks. Because I have read a great deal my whole life (I am 74 years old now), I consider it to be a natural and an important part of my life. Reading in English is not about learning about something new, but, rather, it is about trying to retain my previous knowledge. Because I travel a great deal, it is important for me to maintain my level of English as best as I can. (2018, p. f21)*

By immersing oneself in an already well-known area, one may keep one's existing knowledge alive, but it is also a way of further developing one's knowledge. Another effect of this is the experience that doing so "gives you self-confidence and increased status." (2018, p. f32) Connecting to the theory of gerotranscendence, studies at the Senior University could be interpreted both (i) as a way to self fulfillment, pursuing studies for their own sake, and (ii) as resistance to aging, since participation was also described as a way of upholding one's status and position in society. In the narratives, the study groups were described as including like-minded individuals.

> *The homogeneity [of the group] gives one a certain comfort, I think. In my French group, we talk in French about something, what we did during the week. For example, about a book one has read, a film one has watched. This reveals a great deal about oneself as a person, even one's social status! This might be an obstacle for someone who does not "belong to the group." The same applies to a seminar group which I participate in, an art appreciation association, a type of study group. This group is also a group of "attuned" women, retirees with good education and, in many cases, with husbands who have done well for themselves. Culture vultures, you might say. (2018, p. f07)*

The majority of the participants who chose to write about their participation at Senior University seem to be people with a large amount of cultural capital. It is possible that this is not representative of all Senior University participants, but within this group there seemed to be a further dimension of wanting to retain, or even increase, one's cultural capital. Situations can thus arise where the level of the courses and activities do not fulfill the participant's expectations. Some people who were not met with the challenge or level which they expected moved on to study at university instead.

From Senior University to University Studies

The courses at Senior University are provided by pensioners, for pensioners. Thus, the course lecturer and the participants of the study group decide on the content and level of the course together. Consequently, levels can vary a great deal. Amongst those who sent in their reflections over their participation in Senior University, some were of the opinion that Senior University did not offer a sufficiently advanced level of study.

> *I believe that Senior University, at least in my home town, is not aware that we are pensioners who are well-educated and, during our careers, received good further training which has lead to a passion for learning. (2018, p. f26)*

Participants who possessed a university degree usually had higher expectations and consequently placed higher demands on the course leaders. This included how they presented the subject, if they could respond to the needs of the mature participants, and if they could evaluate and adjust the level of a course that was presented to a specific group. Participation in Senior University activities could also be a gateway to enrolling onto a course as a pensioner. Some people then discovered that they were searching for greater challenges and then moved on to university studies.

> *I thought that once I had turned 65 I would lie in bed reading books and eating chocolate. But then I enrolled at Senior University and took some courses. After some years I realized that these courses were at a level that was too low for me. I needed more to keep my brain active. So then I enrolled on a 15 point credit course in economics. It was great fun. I was able to learn so much and just enjoy myself. I was worried that the young students might not accept me but there has never been a problem. That is how it is. I feel at home there. (2018, p. f26)*

> *I have been a pensioner for almost five years. Soon after retirement, I started with a French course at Senior University, the most advanced level. I have continued with it since then, but I don't attend any more Senior University courses. If there was a similar course for German which did not clash with the French schedule, I am sure I would have attended that course too. Instead, I enrolled on a quarter-paced course in German at university. (2018, p. f42)*

I have discovered another way to satisfy [my desire for] knowledge and learning, namely individual university courses. [. . .] These are interesting but demanding courses, which are taken with students between 20 and 30 years of age, and a few older students. This allows for exciting perspectives and exchanges by socializing across the different generations, something which I find appealing. (2018, p. m16)

The degree of formality and the educational level is different when one compares Senior University with traditional university courses, but if the individual has the prerequisite knowledge, interest, and enthusiasm, then university studies can be an alternative for people who are looking for a certain type of intellectual challenge. From the perspective of gerotranscendence, the descriptions in the narratives about going to a traditional university were similar and expressed a resistance to aging by the participant maintaining the same level intellectual level as before. Furthermore, university attendance also held a relational dimension for the older students, who were able to interact with likeminded peers and the younger generation. In other words, the growth process seemed to be the same across these two different institutions, although the level of studies was, of course, different.

Broadened Enlightenment

Whilst some individuals may have chosen to deepen their knowledge of a "school subject," there were others who were searching for a broader understanding of life's various aspects. The mere act of studying had value in itself, besides the subject content that was studied.

Learning is part of the meaning of life. I think this is particularly relevant. I am curious, I like to feel competent in new areas; I like to share learning and knowledge with others. (2018, p. f15)

I believe that Senior University suit us who are always curious. Perhaps we have had an intellectual career or, in our old age, have discovered that there is so much around us which we wished we could know about and understand; languages, about other cultures, about art, about the environment. (2018, p. f19)

The study of culture (in its various manifestations) was popular and the pensioners took on the roles of both observer and practitioner. One person described that his participation on a course on jazz was a highlight, especially since the study circle was lead by Nisse Sandström, a prominent figure in Swedish jazz.

The jazz circle was in a class of its own. [. . .] We attended two smash hits at the Nalen [concert hall] in Stockholm where we got to listen to some noble jazz including Nisse Sandström who played solo and we got to dance to the tones of a big band. (2018, p. m30)

The same person described himself as a "technology nerd" and was especially interested in study visits at industrial plants and buildings, but he also thought that visits to senior cinema were rewarding. Some of the women described themselves as "culture vultures," a term which is sometimes used to refer to older women because they tend to be a dominant force among consumers of culture.

I am quite the culture vulture who attends concerts and the theater. I addition to what you can learn as an older person (as long as your mind can keep up) the social fellowship you have with others is also valuable. I have made new friends at my French studies at Senior University and I am happy about that! (2018, p. f42)

An interest in culture, as mentioned previously, can also include oneself being part of a creative process and meeting others from whom one can learn and be inspired by. This may be appealing to someone who does not desire to continue with learning in a more theoretical area.

I don't attend courses. This might be because I live outside town. It is too complicated to journey in to town. It has to be a very interesting thing if I am going to make the journey. I have no desire to participate in theoretical courses. I finished with that at school. I am a creative person and I keep myself busy at home with embroidery, sleeping, and the garden. If any courses that were interesting were offered in my village, then I would participate. I participate in Senior University's trips, group lunches, the cinema, and certain field trips. Then I get out and about and get inspiration. (2018, p. f48)

"Broadened enlightenment" may be the result of studying the content of a course, but it also may emerge when meeting other people where one might be challenged in various ways. The desire to know more and to reflect over one's thoughts together with others drives people to look for contexts where there is room for discussion.

We believe that many older people view Senior University as a particularly appealing opportunity to broaden one's knowledge and to discuss issues that are of concern to us. (2018, p. f53)

What makes the difference is, of course, the multifaceted range of experience which is present in groups of old people and which often gives rise to more existential questions being put on the agenda. (2018, p. m27)

Being willing to enter into a dialogue with other people who also possess a great deal of life experience provides the conditions where one can speak about things in a way which is perhaps more difficult with young people, who find themselves in a different stage of life. Conversations with others allows one to broaden one's horizons and one's sense of enlightenment about life in general; not just knowledge of specific facts. This could be an indication of a shift toward a more cosmic and transcendent view of the world, which is a sign of maturation as we age, according to the theory of gerotranscendence.

The Fellowship Experienced During the Courses

As mentioned previously, Senior University provides participants with a forum for learning and for social fellowship. The participants reported that there was time for social interaction before, during, and after the activities that took place.

I plan to continue with my language courses, because I want to be more proficient, but also for social reasons. (2018, p. m52)

I attend senior cinema with my childhood friend. We meet up at least one hour before the viewing for a cup of coffee or lunch. Most of all, we get to talk with each other. At the cinema, I meet old friends and ex-work colleagues and we chat together. (2018, p. f08)

One of the participants reported that, when he moved to a new town as a pensioner, Senior University became an important channel for him in finding new social contacts. One person who is on the managing board of one Senior University claimed that many members go on trips and attend courses for reasons associated with social interaction. This was especially the case for people who live alone; the association is important for maintaining social contacts.

I am most interested in the lectures, trips, and field trips. You also get to meet very nice people and there is a good social spirit. All these things are very positive. (2018, p. f50)

The social dimension of participating in Senior University activities is not just about meeting other people and preventing social isolation. By keeping oneself up-to-date in different fields, one is also able to follow social developments and one can feel that one can still contribute to society as an active citizen.

It is both rewarding and stimulating to be able to be engaged in social debates using recent research and this entails that any sense of isolation is kept at bay, which is something that can easily happen if one isolates oneself [from society] after one retires. (2018, p. f05)

We thus note how intellectual and social stimulation can go hand-in-hand. Meeting together, around a common area of interest, can offer greater opportunities for learning since one is able to hear of other people's experiences and their knowledge; something which is considered positive.

I am happy that, as a pensioner, I had the opportunity to study and obtain knowledge in an area that has always interested me, but, because of different reasons, I was not able to pursue this earlier. Of course, it is always possible to read and study on your own, but it is more rewarding to do this in the company of other people, since we can share our experiences and knowledge with each other in a small group. (2018, p. f33)

The social fellowship that can be enjoyed within a study group is thus particularly important; it even contributes to the intellectual stimulus felt by the participants. Belonging to a group where the participants share certain characteristics was described to further the social interaction that took place.

So then I think that one should choose the association that fits in with your personality. "Birds of a feather" is an expression which I think applies to one's whole life. (2018, p. f05)

The participants knew each other; they seemed to keep track of each other. This differentiated this group from others. The older members were happy to talk with each other, they weren't so stressed out and neither were they inhibited. They didn't have to put on a [false] show. (2018, p. f07)

In the autumn of 2016, I started to learn Spanish together with 10 older ladies with various levels of [Spanish] proficiency. We were a nice group together, who accepted each other's different levels of knowledge, hearing problems, and so on. (2018, p. f51)

The similarities shared across the participants created a spirit of acceptance and security. Being part of an environment that was solely made up of older participants was said to support the interaction between the participants, since they shared the same pace of life and had empathy for each other concerning certain ailments, for example, being hard of hearing. The notion of "status" may also play a role in being able to identify with the others in the group; as a reflection of one's own identity. The search for a context or environment which is characterized by a spirit of acceptance or where one can maintain one's previous status in life and one's identity are manifestations of different aspects of the aging process. There are actually courses and lectures at Senior University which explicitly deal with the subject of old age and the aging process, but a number of the participants that sent in their stories reported on actively avoiding this issue.

I consistently refrain from attending any lecture about old age and all the terrible things that can arise. (2018, p. f37)

The avoidance of "old age" as a theme may well be a priority for certain individuals, but it may also be the realization of some form of resistance to being involuntarily assigned to this demographic category, because old age is stigmatized to some degree in Swedish society. A recurring question is what one should call older people. One participant put it thus:

It should be noted that I don't like to be called "old", like in this questionnaire. It's a form of age discrimination! In newspaper articles and in many other contexts, a large proportion of the population are bundled together and called "the elderly". For example, I read in the newspaper "older woman robbed"—she was 58 years of age. At Senior University, physically- and mentally healthy and youthful people between 65 and 95 years of age get together. Save the term "the elderly" for questionnaires that concern care for the elderly and retirement homes, and so on. Why don't you use the word senior? (2018, p. f03)

There are others who do not like the term *senior*, and one respondent had a problem with the word *pensioner*. Irrespective of how one chooses to label groups of people and even individual people, we are faced with a situation in Sweden where the group, "older adults," is a large and heterogeneous group of people. If we note that the lower age limit for Senior University is 55 years of age and that many people now live up to a 100 years of age, this entails that the participants at Senior University actually represent several generations. There is, however, one thing that most people in this group have in common—they prefer activities that are voluntary and flexible. In terms of their learning, they enjoy the study circle form of education because it is based on a dialogical approach were experience plays an

important role. "Social- and personal relationships" is one of the three dimensions of the maturation process later in life (Tornstam, 2011), and to engage in dialogue is relevant to the process of gerotranscendence.

RESULTS FROM THE THEMATIC ANALYSIS: EXISTENTIAL ASPECTS OF EDUCATION LATER IN LIFE

This section presents the results from the deductive analysis that invoked the theoretical framework concerning the existential aspects of older adults' learning: "corporeality," "relationality," "spatiality," "temporality," and "materiality."

Corporeality: Assurance for the Dissonant Body and Mind

Assurance for the dissonant body and mind refers to how participants talk about the bodily changes that occur in conjunction with the aging process and how they deal with these changes. Narushima et al. (2018) report on how participants were sometimes frustrated and anxious about their physical decline and the illnesses that they sometimes suffered from, but also how participants can overcome physical decline by using different strategies, such as forcing themselves to go to places even though, for example, their knees were painful. This has been described as "Mind over matter." A difference between the present study and Narushima et al.'s study is that their study included participants who were vulnerable older adults. In the present study, the participants described themselves as "active" and "healthy." The presentation of one's self as "active" and "healthy" is further supported by comments made by the participants that they do not belong to the category, "the old people." For example, "It should be noted that I don't like to be called "old."" To be called "old" was considered tantamount to discrimination by the same respondent; thereby implying that "being old" is derogatory. There is thus a silent resistance against being identified with "aging" and "physical decline," which may also signal a resistance against gerotranscendence and positive aging. In some of the stories, physical decline is hinted at: "We were a nice group together, who accepted each other's different levels of knowledge, hearing problems, and so on." The context of being together with older adults can thus provide a safe and comfortable environment where physical changes are recognized as something natural. An acceptance of the aging process is not a sufficient and necessary condition for gerotranscendence, however. Notwithstanding this, one physical issue that openly recurs in the narratives is the issue of keeping the brain active. The participants recognized that it is necessary to lead an active life, and in the context of education, there was a focus on retaining the same cognitive level or even interest in further developing one's cognitive capacity. Participation in educational activities can thus be understood as a means of dealing with aspects of corporeality.

Relationality: A Circle of Camaraderie

A circle of camaraderie refers to how people create social relationships and networks. With increased age, there is an increased risk for the loss of social networks and a concomitant risk of social isolation. Narushima et al. (2018) describe how participants gained a sense of belonging to a community and built informal networks because of their participation in educational activities. This observation is congruent with what was found in the present study, where a number of participants remarked on the importance of the social dimension in connection with their studies at Senior University. In fact, for the participants included in this study, it was one of the two main reasons why they attend courses at Senior University. One difference, however, can be found in how Narushima's et al. (2018) participants spoke about "older people as role models" and "the important role of the instructor." The narratives included in the present study, instead, contained stories about wanting to be the instructor or contained complaints about the instructors not offering sufficiently advanced levels of study. The social dimension found in the stories in the present paper included the community within Senior University and other communities, such as L'Alliance Française, and being a student at traditional universities and being an active citizen in society at large: "It is both rewarding and stimulating to be able to be engaged in social debates using recent research." The stories also link the intellectual and the social dimensions, as can be seen in the report that: "the multifaceted range of experience which is present in groups of old people and which often gives rise to more existential questions being on the agenda." The link between the intellectual and the social dimensions can, furthermore, be understood as representing gerotranscendence, since it enables the individual to move into a more universal perspective on life. Senior University thus provides a forum where learning and social fellowship are interlinked. Relationality is thus a properly integrated and prominent part of learning and education.

Spatiality: A Balance Between Physical and Mental Spaces

A balance between physical and mental spaces refers to the participants' perceptions of narrowing or expanding physical and mental spaces. Narushima et al. (2018) found that, while the participants' physical space became narrower, their mental space expanded. In the stories from participants at Senior University, it was reported that their physical space as well as their mental space had expanded. Their physical space was broadened in terms of their course attendance, study visits, visits to museums, and trips to other countries for cultural exchange and experience. Only one of the 53 stories contradicted this general trend: "*I don't attend courses. This might be because I live outside town. It is too complicated to journey in to town.*" (2018, p. f48). The participants' stories indicate that their mental space was broadened, both intellectually and culturally. An intellectual broadening took place because the participants were challenged to develop their knowledge of a subject that was already familiar to the person or by taking on a new subject. Language studies were subjects that were referred to in this way in the stories. Cultural endeavors, on the other hand, entailed "performing" culture as well as "consuming" culture, but note that such endeavors also contained the notion of

"a broadened enlightenment" through engaging in discussions about, for example, existential issues. This hints at the process of gerotranscendence described in the theoretical section. Spatiality, expanding one's physical and mental space, is a major theme in the stories about participation at Senior University.

Temporality: Integration of the Past, Present, and Future

Integration of the past, present, and future refers to themes that involve and integrate the past, the present and the future. Narushima et al. (2018) describes how participants enjoyed the freedom of "now" as well as a shared willingness to keep growing and moving forward with time. Although they realized that the future was limited, participation in educational activities provided them with a structure in the present. The stories from Senior University shared these ideas. The participants reported that they could engage in whatever they want to and they had chosen education activities at Senior University to them with tools for growth and with a way of "keeping up with the times." In terms of looking back on one's life, these stories were produced by women who claimed that they did not have the opportunity to study before, but now could realize their life dream: "*Duty, duty. Marking assignments on the weekends. Any free time was spent helping my son with dyslexia and maintaining contact with my friends. Doing exercise. And, of course, the household chores. […] When I retired, I thought: "Eventually! Now I can study whatever I like.*" (2018, p. f07). The stories about participating at Senior University also had a dimension of "keeping up with life, like before," which is associated with the previously-mentioned claims concerning an active life and a stimulated brain. One notes a certain tension when one analyses the theme of "temporality" in the stories. On the one hand, the stories can be interpreted as "moving forward" and "embracing continued growth and development." On the other hand, however, the stories can be interpreted as statements of "resistance against aging," and "resistance against physical decline." Because life is often complex and contradictory, I claim that both interpretations exist simultaneously.

Materiality: Beyond Knowledge and Skills

Beyond knowledge and skills refers to tangible and intangible materiality, which is seen as extensions of our bodies and mind. As in Narushima et al. (2018), the stories from Senior University do not focus on tangible materiality. Instead, it is intangible materiality that is of interest to the participants. Their focus on the intangible may be a function of the context on which the narratives reported, namely education, or as an expression of the aging process. This issue should be discussed further in future studies. In the stories about participation at Senior University, there was less focus on "self-esteem" and "confidence" than that in Narushima et al. (2018), where these issues emerged as central issues. Instead, "social position," and "the maintenance of the position the person held prior to retirement" were frequently described in the stories. Several stories emphasized the importance of remaining within a homogenous group of people who share a similar life situation: "*So then I think that one should choose the association that fits in with your personality. "Birds of a feather" is an expression which I think applies to one's whole life.*" (2018, p. f05). In some stories, the idea of enrolling at Senior University is dismissed because certain participants were of the opinion that the studies that were on offer to them were not intellectually challenging enough: *"[…] I realized that these courses were at a level that was too low for me. I needed more to keep my brain active. So then I enrolled on a 15 point credit course in economics.*" (2018,p. f26). In other stories, the level of cultural attainment and content is decisive for social positioning: "*For example, about a book one has read, a film one has watched. This reveals a great deal about oneself as a person, even one's social status!*" (2018, p. f07). Since attendance at Senior University has connotations with "higher education," this implies that one holds a social position. This corresponds to the dimension of "self" in gerotranscendence and the process of reflecting on the differences between "identity," "social position," and "self." It should, however, be emphasized that many stories describe an interest in continued growth, independent of the participant's social position. If education, and learning in general, represent intangible materiality as a process for growth later in life, Senior University could be said to represent a context where social positioning can take place as well. In other words, the process of learning (in a formal educational setting, or elsewhere) should be regarded as a process of growth, no matter at what stage in life a person finds herself.

COMPARING THE RESULTS OF DEDUCTIVE AND INDUCTIVE ANALYSES

This paper began by introducing narrative gerontology as a theoretical framework within which one can conceptualize the personal growth that takes place later in life to explore the process of gerotranscendence. As suggested in the theoretical framework of this paper, the stories told by participants provided access to various sense-making processes that revealed different dimensions that are relevant to learning later in life. The group of older adults that shared their stories about their participation in educational activities at Senior University is a privileged group in many ways; including their educational background and social position. We also note that the individuals who submitted their stories for analysis were of good health (as far as the stories reveal). The examination of the participants' stories included two steps: an inductive analysis which resulted in a presentation of the material that was based on what was said in the stories and a deductive analysis of the stories that was based on the existential aspects presented by Narushima et al. (2018). The first analysis provided a rich understanding of the content of the stories. We noted two general arguments why a person might engage in studies later in life: (i) the participants wanted to acquire new knowledge and (ii) they valued being part of the social community that the Senior University offered. The second analysis treated five existential aspects: "corporeality," "relationality," "spatiality," "temporality," and "materiality." When we compare both analyses, we note that the "social" dimension corresponded to the existential aspect of "relationality," something which should be understood as

an integrated and prominent part of learning and education, and to "spatiality," suggesting that participation at Senior University is a means for the participants to expand their physical and mental space. In the inductive analysis, a tension was identified within the existential aspect of "temporality," namely between maintaining the idea of being the same person, "as one had always been," and engaging in continued growth and development. Based on the narratives, it is not immediately apparent whether "looking back" is a sign of resistance ("staying the same") or whether it is a sign of acceptance ("embracing the "now" as a positive development of the past"). This tension occurs in the other existential aspects as well.

CONCLUSION: MATURATION THROUGH EDUCATION IN LATER LIFE

The major insight that is offered by the present study is that *multiple and contradictory plots co-exist in stories about participating in education later in life*. This corresponds to the notion that life itself can be complex and contradictory. Different plots in these participants' life stories are embraced, suggesting that different plots exist simultaneously and represent the aging process as a combination of "holding back" and "moving forward." When the movement of personal development is perceived as positive, this is often referred to as *maturation*. The theory of gerotranscendence explains this movement. Tornstam (2011) identified three dimensions of maturation that takes place later in life: the "cosmic" dimension, the "self," and "social and personal relationships." In the narratives received from the participants at Senior University, development of the "self" and of the "social and personal relationships" was a recurrent theme, thus indicating that education and learning can play a valuable role in gerotranscendence. The "cosmic" dimension was not immediately obvious in the stories; which does not mean that it is absent from the narratives. It may be the case that the participants were more at ease talking about the "self" and "social and personal relationships" compared to the "cosmic" dimension of maturation. In fact, the "cosmic" dimension was touched upon with mention of "broadened enlightenment" and the notions of "being an active citizen" and "participating in society." But most narratives were about development in terms of "self-realization" and individual goals. Is it that the participants at Senior University, a group consisting of older adults who are relatively healthy, active and well-educated, find themselves at the early stages of the gerotranscendence process? They may even be in denial of the aging process? Or it may well be the case that Senior University constitutes a forum for education were the focus is placed on the individual' and the social dimensions, instead of on the "cosmic" dimension? The answer to these and many other questions, remain for future research to address.

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The author confirms being the sole contributor of this work and has approved it for publication.

REFERENCES

Bjursell, C. (2019). "Sweden's Senior University: Bildung and fellowship," in *The University of the Third Age and Active Ageing: European and Asian-Pacific Perspectives*, eds M. Formosa (Springer).

Bjursell, C., Nystedt, P., Björklund, A., and Sternäng, O. (2017). Education level explains participation in work and education later in life. *Educ. Gerontol.* 43, 511–521. doi: 10.1080/03601277.2017.1357397

Bruner, J. (1999). Narratives of aging. *J. Aging Stud*. 13, 7–9.

Chen, L. -K., Kim, Y. S., Moon, P, and Merriam, S. B. (2008). A review and critique of the portrayal of older adult learners in adult education journals, 1980-2006. *Adult Educ. Q.* 59, 3–21. doi: 10.1177/0741713608325169

Formosa, M. (2014). Four decades of Universities of the Third Age: past, present, future. *Ageing Soc.* 34, 42–66. doi: 10.1017/S0144686X12000797

Formosa, M., and Higgs, P. (2015). "Introduction," in *Social Class in Later Life: Power, Identity, and Lifestyle,* eds M. Formosa and P. Higgs (Bristol: The Policy Press), 1–14.

Golding, B. (ed.) (2015). *The Men's Shed Movement: The Company of Men*. Champaign, IL: Common Ground Publishing.

Goodson, I. F., Biesta, G. J. J., Tedder,. M., and Adair, N. (2010). *Narrative Learning*. London: Routledge.

Higgs, P., and Formosa, M. (2015). "The changing significance of class in later life," in *Social Class in Later Life: Power, Identity and Lifestyle,* eds M. Formosa and P. Higgs (Bristol: The Policy Press), 169–181.

Hyde, M., and Jones, I. R. (2015). "Social class, age, and identity in later life," in *Social Class in Later Life: Power, Identity and Lifestyle,* eds M. Formosa and P. Higgs (Bristol: The Policy Press), 73–94.

Jarvis, P. (2004). *Adult Education and Lifelong Learning. Theory and Practice, 3rd Edn*. London: Routledge Falmer.

Kenyon, G. M., and Randall, W. (1999). Introduction: narrative gerontology. *J. Aging Stud.* 13, 1–5.

Narushima, M., Liu, J., and Diestelkamp, N. (2018). I Learn, Therefore I am: a phenomenological analysis of meanings of lifelong learning for vulnerable older adults. *Gerontologist* 58, 696–705. doi: 10.1093/geront/gnx044

Randall, W., Baldwin, C., McKenzie-Mohr, S., McKim, E., and Furlong, D. (2015). Narrative and resilience: a comparative analysis of how older adults story their lives. *J. Aging Stud.* 34, 155–161. doi: 10.1016/j.jaging.2015.02.010

Randall, W. L., and Kenyon, G. M. (2004). Time, story, and wisdom: emerging themes in narrative gerontology. *Can. J. Aging* 23, 333–346. doi: 10.1353/cja.2005.0027

Ruth, J.-E., and Kenyon, G. M. (1996). Introduction: special issue on ageing, biography and practice. *Ageing Soc.* 16, 653–657.

Tornstam, L. (2011). Maturing into gerotranscendence. *J. Transpers. Psychol.* 43, 166–180.

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Older People in the Platform Economy

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Since the platform economies have emerged, there are many new ways how people can perform earning activities. These new opportunities concern older people too. However, some authors write that the actors of the platform economy are mainly younger people and it is not typical that older people work through platforms. We cite the opposite case of Oszkar (Hungarian On-line Passenger Intermediary System) where the ratio of older (55+) drivers to the total number of chauffeurs increased in time. At the same time, 30–40% of all drivers do not declare their age. In our paper, we analyse why older people do not declare their age. Using the results of our online survey and a Bayesian game theoretic model we prove that in the equilibrium state older people are frequently against letting others know their real age when they apply to work through a platform. We think that the cause is still existing age discrimination

Keywords: older workers, platform, online survey, Bayesian game, age discrimination

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INTRODUCTION

Increased longevity, and at the same time, greater healthy life expectancy makes it possible to work for a longer time as well. However, in the majority of European welfare states up until the mid-1980s older generations could enjoy the comfort and relative material well-being of retirement at a comparatively early age. It was generally accepted that it was the "duty" of older people to retire and make room in the workplace for young people.

An extreme example is the "Walmart effect," described by Ilmakunnas and Maliranta (2007), whereby management sought to replace even the middle-aged by more efficient younger workforce. Starting from the end of the 1980s retirement age in most European countries began to rise, and governments tried to popularize the value of older people's labor. PwC (2018) using their famous Golden Age Index—which calculates the percentage of 55–64 year old active in the labor market—estimated that in the year 2017 the Gross Domestic Product (GDP) of the Organization for Economic Co-operation and Development (OECD) countries would have been higher by $3.5 trillion if they had managed to keep all older adults on the labor market until they reached retirement age. The government's intent, however, is frustrated not only by older people's lack of ambition but also by beliefs ingrained in society, as well as corporate level strategies.

In our paper, we examine a particular manifestation of societal beliefs. Our first hypothesis states that older people suffer—or at least they feel that they suffer—negative discrimination not only when applying for traditional jobs, but also when they seek work using online platforms. Our second hypothesis states that older people adapt to these conditions and either misrepresent or do not declare their age.

The beginning of the whole story was when we saw the data analysis from the Hungarian carpooling platform Oszkar[1] in Berde and Tokes (2018), which shows that on average 30–40% of the chauffeurs using the service do not enter their age on their profile. Of course, this does not mean that only older people omit their age. It is likely that others, especially the very young, do the same. Also, Berde and Tokes (2018) show that contrary to the claim of Huws et al. (2017) older adults do like to use online platforms to look for work. At least in the case of Oszkar, the ratio of drivers aged 55 years or more has increased while the total number of drivers was increasing as well. Thus, how older people behave while they seek work on online platforms may be a question of particular importance.

We prove our hypothesis, concerning the omission of age on profiles, by way of an online survey. The description of the survey is in the second part of our article, where we present its results as well. In the third part, we use a well-known game-theoretic model to support further our argument that older adults may feel the need not to disclose their age. Finally, we conclude our findings.

THE ONLINE SURVEY

Our online survey consists of five questions. The full text of the survey can be found in the Appendix. Respondents were first asked their year of birth and gender. Then we inquired if they believed when someone was thinking about using the services they offered through an online platform (e.g., chauffeuring services, tutoring, cleaning) the prospective clients would take their age into consideration. The next question asked whether respondents would enter their age on the platform if it was possible, but not mandatory. Lastly, if they chose to enter age, we asked what it would be.

We propagated the online survey on special mailing lists and Facebook groups where most participants were more than 50 years old, sometimes significantly older. Links to the survey were distributed in June 2018 and responses were collected until the end of August 2018. We got 140 responses. The youngest responder was 24-year-old, the oldest 78-year-old. For the sake of uniformity, we removed those under the age of 50 from the sample, thereby retaining 131 responses for evaluation. The distribution of the answers in the remaining sample is shown in **Table 1** below.

From the figures of **Table 1**, it is important to highlight that in our sample 45% of people older than 50 would not voluntarily declare their true age on their profile. It is also interesting to note that 19% of respondents think their age would not matter when someone is considering engaging their services. All such respondents would declare their real age on their profile.

Only five of the respondents said that they would declare an age lower than their true age—albeit only by a few years—in order to seem younger. They represent merely 3.82% of the sample. Therefore, we decided not to put these people into a separate category for our analysis, but instead group them with the people who declared their real age. Using the survey results we rejected our previous belief that older adults will try to misrepresent their age when offering services[2].

TABLE 1 | Distribution of answers in the 131 responses submitted by people over the age of 50.

Gender	**Female: 59.54%**	**Male: 40.46%**
Displayed age would affect the number of clients who order your service	Yes: 80.92%	No: 19.08%
Declare true age on profile	Declare: 54.96%	Do not declare: 45.04%
Among those who do not think age matters with respect to the number of clients, declare true age on the profile	Declare: 100%	
Among those who think age matters with respect to the number of clients, declare true age on the profile	Declare: 44.34%	Do not declare: 55.66%

Our online survey cannot be considered representative since it was disseminated in a particular way. Belonging to an online mailing list or a Facebook group constitutes self-screening. Our survey does show however that older adults do think age is a significant factor in whether their offered services are engaged or not. In the next part of our study, we use the results of our survey to show that in a Bayesian game such as the one presented by Cho and Kreps (1987) and Kreps (1990) older adults may similarly attempt to hide their age.

THE MODEL

The Background of Our Model

Our model uses two theoretical game concepts, both classic by present day standards. The first one is job market signaling, the second is the transformation of games of incomplete information into games of imperfect information. The concept of job market signaling was first introduced by Spence (1978). In this concept, the employer offers a contract, wherein the wage paid is conditional on the level of education the employee can certify. However, the employee's level of competence is only known to them, and is not necessarily reflected by their qualifications. A less competent person with a college degree may garner a higher salary than a similarly competent person without a college degree. Though signaling was applied to the job market directly in Spence (1978), similar ideas are formulated in Arrow (1973), Mincer (1974), and Stiglitz (1975). Since the seminal work of Spence, signaling is one of the most frequently used tools when studying employee contracts. Some frequently cited applications are Lazear and Rosen (1981), Hanushek (1986), Heckman et al. (2006), and Slee (2017). Of these, Slee (2017) offers the conclusions most relevant to our subject. Slee points out that the rating systems of gig economy jobs performed through online platforms make it seem as though the people performing

[1]Upon its founding in 2007 Oszkar was basically a carpooling service. Based on Oszkar.hu's present day data Berde and Tokes (2018) have concluded that commercial postings have become an ever-increasing majority.

[2]We did not consider how likely it is that someone who would lie would also admit that they would lie. Maybe they wish to hide their mistrustful behavior.

the job have been rated objectively, based on the quality of their work. However, in real life these ratings may contain even more prejudice than conventional ratings given by supervisors. Workers in the gig economy are compelled to send signals that counter this prejudice, so they get better ratings (e.g., they may try to hide the fact that they belong to a local ethnic minority).

Information sets can be used in situations when some players are aware of a specific piece of information but others are not. This piece of information is sometimes referred to as the type of player who is aware of it. This may be their age, level of competence, etc. Harsanyi (1967; 1968a; 1968b) has shown how to transform games of incomplete information into games of imperfect information, by introducing "Chance" as the first mover. "Chance" has no payoffs, but it determines the types of the players. Players may signal their type via actions. e.g., in the Spence (1978) model the more competent people may complete their university education with less effort, and are therefore more likely to get a degree. However, a player may try to signal a type different from their own, and this may increase their payoff, as with the less competent person with a degree in the previous example. The other player can only form a belief about the type based on the signal received, so all types with the same signal fall into the same information set. The job market is modeled using this technique in Roth and Sotomayor (1992). Osborne and Rubinstein (1994) also contains applications of the Harsanyi transformation, where in addition they emphasize the role of outside circumstances. They also say that the circumstances depend on the behavior of the players, and conversely the behavior of the players depends on the circumstances too. Our own model, introduced below, is built upon the same principles.

The Structure of the Model and Its Results

In our model, there are two types of older adults' chauffeurs for hire. The first type thinks his age does not matter; the clients will engage his services regardless of his age. We denote this type by R, short for "Regardless." The second type believes that age matters to the clients and older chauffeurs get fewer engagements. We denote this type by M, short for "Matters." In order to offer their services, both types register on an online platform, where they fill out a data sheet. It is not required to answer all questions. Specifically, it is not mandatory to declare their age. In reality, this is not verified by the platform, hence misrepresentation is also possible, but in our model, we do not consider this possibility. The only options are declaring their real age or not declaring any age at all.

Of course, passengers are more likely to meet young chauffeurs than old chauffeurs, but we restrict ourselves to this latter case. When the potential passenger encounters a posting by the chauffeur, they either engage their services, or they do not. One piece of information used by the passenger to make this decision is the age of the chauffeur. However, this may be missing. In this case, the passenger does not know why the chauffeur did not declare their age; it may be because they are too old, or they may have simply glossed over it when they filled out the data sheet.

The payoffs are similar to the ones in the game presented by Cho and Kreps (1987). Passengers receive a payoff of 1 if they interact with the old chauffeur according to their type. In our model, this means engaging the services of those who think they will be hired regardless of their age, and not engaging the services of those who think their age matters. If passengers choose the wrong action, they receive a payoff of 0. We summarize passengers' payoffs below:

Engage services of type *R*: 1.
Do not engage services of type R: 0.
Engage services of type M: 0.
Do not engage services of type M: 1.

However, the passenger cannot directly observe the type of the chauffeur. They can only observe if they have declared their age or if they have not. Declaring their age is a signal sent by the chauffeur, which yields a type dependent direct payoff, and it may influence the passenger's decision as well. We summarize the direct payoffs of drivers from their signal: Type *R* and declares age: 1.

Type *M* and declares age: 0.
Type *R* and does not declare age: 0.
Type *M* and does not declare age: 1.

The chauffeurs' payoff depends more on whether or not the passengers engage their services. The chauffeurs' payoffs resulting from the passenger's decision are given below:

Services are engaged:
Services are not engaged: 0.

Based on the previous payoffs, the payoff of the type *R* chauffeurs, if they declare their age and their services are engaged by the passenger, is 3. If they declare their age, but their services are not engaged, their payoff is 1. If they do not declare their age, but their services are engaged, they receive a payoff of 2. If they do not declare their age and their services are not engaged their payoff is 0. The payoff of the type *M* chauffeur is similarly addictive. If type *M* drivers declare their age and their services are engaged, they get a payoff of 2. However, if they do not declare their age and their services are not engaged, they get a lower payoff, 1. Therefore, if declaring their age can move the passenger to engage their services, it is worthwhile to do so, even though this goes against the character of the type *M* chauffeur.

Now we proceed to determine the equilibrium of our Bayesian game based on Cho and Kreps (1987) using the reasoning presented in Binmore (1992). The starting player is Chance, who decides the type of the chauffeur with exogenously given probabilities. Based on the results of our survey, in our game, the probability of type *R* will be 19.8%. The game has no pure strategy equilibrium [For a detailed proof see Binmore (1992) page 464, figure 10.11. In that example, the probabilities differ from ours, but the same calculations prove that in our game there is no pure strategy equilibrium either]. Since we are dealing with a game of incomplete information, we will use the Harsanyi transformation to make it into a game of imperfect information and solve that. This is why we introduce Chance as the starting player. We denote the probability that type *R* drivers do not declare their age by *NG* (None Given), and we denote the probability that they declare their age by *D* (Declare). Of course, NG+D = 1.

In the case of type *M,* the same probabilities are denoted by *ng* and *d,* respectively.

The passenger, as we have already stated, can only observe the signal sent by the chauffeur, that is whether or not the chauffeur has declared their age. Both in the "Declare" and the "None Given" information sets the passengers will only engage the chauffeur's services if they believe the chauffeur has a higher probability of being type *R* than of being type *M*.

In the "None Given" information set services are engaged i

$$\frac{0.198NG}{0.198NG + 0.802ng} > \frac{0.802ng}{0.198NG + 0.802ng} \tag{1}$$

that is if $NG > 4.05ng$.

$$\text{Services are not engaged if NG} < 4.05\text{ng} \tag{2}$$

In order for the passenger to randomize we must have

$$NG = 4.05ng \tag{3}$$

Therefore

$$1 - D = 4.05 - 4.05d \tag{4}$$

which yields

$$4.05d = 3.05 + D \tag{5}$$

In the "Declare" information set services are engaged if

$$\frac{0.198D}{0.198D + 0.802d} > \frac{0.802d}{0.198D + 0.802d} \tag{6}$$

that is if

$$D > 4.05d \tag{7}$$

Services are not engaged if

$$D < 4.05d. \tag{8}$$

Based on (5, 8) if the passenger randomizes in the "None Given" information set, they will not engage services in the "Declare" information set. Thus, type *M* will not declare their age, as that would mean $ng = 1$, and together with (3) it would imply $NG = 4.05$, which is impossible.

This means that the only mixed equilibrium is such that the passenger randomizes in the "Declare" information set.

$$D = 4.05d \tag{9}$$

This means that

$$1 - NG = 4.05 - 4.05ng \tag{10}$$

$$NG = 4.05ng - 3.05 \tag{11}$$

$$NG < 4.05ng \tag{12}$$

thus services are not engaged in the "None Given" information set. Therefore, type *R* will always declare their age, so $D = 1$ and based on (9) $d = 0.2469$. This shows that type *M* will randomize between the "None given" and "Declare" behavioral strategies. In case of "None given," type *M* receives a payoff of 1, and his expected payoff must be the same when he chooses "Declare." Let us denote the probability that services are engaged in the "None given" information set by θ. Type *M* will randomize if

$$1 = 0 + 2\theta \tag{13}$$

which yields

$$\theta = \frac{1}{2} \tag{14}$$

Thus, type *R* chauffeurs will always declare their age, while type *M* chauffeurs will declare their age with probability 0.2469. In the "None Given" information set the passengers will never engage the chauffeur's services, while in the "Declare" information set they will do so with probability 0.5.

According to our survey, less than half of the *M* type chauffeurs would declare their age. Our game theoretical model based on Cho and Kreps (1987) yields an even lower ratio, although this clearly depends on the exact numerical values in the payoff function. The order of these values is essential: If a type *M* chauffeur does not declare their age, they get a lower payoff than if they do declare their age and as a result, their services are engaged. This is in accordance with the results of our survey even though 81% of the respondents thought that age matters, 44% of them would still declare their age despite their misgivings.

CONCLUSIONS

Due to the small number of observations and to the self-screening in the online groups used to propagate our questions, the survey cannot be considered representative, but it does provide clear guidance about whether people think age matters. The high ratio of affirmative answers allows us to conclude that most old people feel that there is age discrimination in the labor market of the platforms. This result is further supported by our model based on Cho and Kreps (1987). We also demonstrated both by the survey and the model, that people recognize society's attitude toward older adults, and in order to be successful in the platform, they adjust their behavior accordingly.

All this confirms that the situation is similar to the one described in Osborne and Rubinstein (1994). The behavior of older chauffeurs is affected by their environment. Those who think their age matters when considering to offer their services frequently do not reveal their age. These chauffeurs probably formed their beliefs after previous negative experiences. However, by omitting their birth year they decrease the ratio of older chauffeurs who have admitted their real age. This may reaffirm the public's belief that older chauffeurs are less capable drivers, and hence their services should not be engaged.

This creates a vicious cycle. It is very difficult to change underlying attitudes. Our results call attention to the fact that in order to lengthen labor market participation mere governmental intent will not suffice. To be able to retain older adults longer a shift in societal attitude is required as well.

ETHICS STATEMENT

An ethics approval was not required for this study as per Corvinus University of Budapest (Hungary) guidelines, and national regulations and the informed consent of the participants was implied through survey completion.

AUTHOR CONTRIBUTIONS

EB was the only author of the article. She managed the on-line survey and elaborated its results. She described the game theoretic model using the cited literature as well.

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REFERENCES

Arrow, K. J. (1973). Higher education as a filter. *J. Public Econ.* 2, 193–216. doi: 10.1016/0047-2727(73)90013-3

Berde, E., and Tokes, L. (2018). *Platformokon Keresztul Dolgozo Idosebb Munkavallalok. Az Oszkar Utazasmegoszto Peldaja. Demografiai es Gazdasag Kutatokozpont, Budapesti Corvinus Egyetem. (Older Workers Working Through Platforms. The Case of the Journey Sharing Company, Oszkar*, in Press (in Hungarian, Demography and Economics Research Centre, Corvinus University of Budapest).

Binmore, K. (1992). *Fun and Games: A Text on Game Theory*. Lexington, KY: D. C Heath and Company.

Cho, I. K., and Kreps, D. M. (1987). Signalling games and stable equilibria. *Q. J. Econ.* 102, 179–221. doi: 10.2307/1885060

Hanushek, E. A. (1986). The economics of schooling: production and efficiency in public schools. *J. Econ. Literat.* 24, 1141–1177. doi: 10.12691/education-2-5-5

Harsanyi, J. C. (1967). Games with incomplete information played by "Bayesian" players, I–III Part I. The basic model. *Manag. Sci.* 14, 159–182. doi: 10.1287/mnsc.14.3.159

Harsanyi, J. C. (1968a). Games with incomplete information played by "Bayesian" players part II. Bayesian equilibrium points. *Manag. Sci.* 14, 320–334. doi: 10.1287/mnsc.14.5.320

Harsanyi, J. C. (1968b). Games with incomplete information played by 'Bayesian'players, part III. The basic probability distribution of the game. *Manag. Sci.* 14, 486–502. doi: 10.1287/mnsc.14.7.486

Heckman, J. J., Stixrud, J., and Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *J. Labor Econ.* 24, 411–448. doi: 10.1086/504455

Huws, U., Spencer, N., Syrdal, D. S., and Holts, K. (2017): *Work in the European Gig Economy: Research Results from the UK, Sweden, Germany, Austria, The Netherlands, Switzerland and Italy*. Brussels: Foundation for European Progressive Studies. doi: 10.18745/DS.19911

Ilmakunnas, P., and Maliranta, M. (2007): *Aging, Labor Turnover and Firm Performance. ETLA Discussion Paper No. 1092*. Helsinki: The Research Institute of the Finnish Economy (ETLA).

Kreps, D. M. (1990). *A Course in Microeconomic Theory (Vol. 41)*. Princeton, NJ: Princeton University Press.

Lazear, E. P., and Rosen, S. (1981). Rank-order tournaments as optimum labor contracts. *J. Polit. Econ.* 89, 841–864. doi: 10.1086/261010

Mincer, J. (1974). *Schooling, Experience, and Earnings*. Human Behavior and Social Institutions No. 2.

Osborne, M. J., and Rubinstein, A. (1994). *A Course in Game Theory*. Cambridge, MA; London, UK: MIT Press.

PwC (2018): *PwC Golden Age Index. Unlocking a Potential $3.5 Trillion Prize From Longer Working Lives.* United Kingdom: PricewaterhouseCoopers LLP.

Roth, A. E., and Sotomayor, M. (1992). Two-sided matching. *Handbook Game Theory Econom. Appl.* 1, 485–541. doi: 10.1016/S1574-0005(05)80019-0

Slee, T. (2017). *What's Yours Is Mine: Against the Sharing Economy*. New York, NY; London: OR Books.

Spence, M. (1978). Job market signaling. *Uncertain. Econom.* 1978, 281–306. doi: 10.2307/1882010

Stiglitz, J. E. (1975). The theory of "screening," education, and the distribution of income. *Am. Econ. Rev.* 65, 283–300. doi: 10.7916/D8PG22PM

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APPENDIX

Questions of the online survey (translated from Hungarian)

1. What is your gender?
   - Female
   - Male
2. Year of birth
3. The image that you are advertising service through an online platform. E.g., tutoring, chauffeuring services, cleaning, etc. When you register on the platform you may enter your age, but this is not verified by anyone so that you can omit this declaration. Do you think your age will affect the number of your clients?
   - It will
   - It will not
4. Would you enter (any) year of birth?
   - I would probably not.
   - I probably would
5. What year of birth would you enter? In case you answered, "I would probably not." in the previous question, write zero (0) now. Don't forget; you are not obliged to enter your genuine year of birth. ……

frontiers in Sociology

BOOK REVIEW
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Book Review: Age-Friendly Cities and Communities in International Comparison: Political Lessons, Scientific Avenues, and Democratic Issues

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Keywords: aging, age-friendly cities and communities, active aging, healthy aging, book review

A Book Review on

Age-Friendly Cities and Communities in International Comparison: Political Lessons, Scientific Avenues and Democratic Issues

Thibauld Moulaert and Suzanne Garon, (Cham: Springer), 2016, 337 pages, ISBN: 9783319240312.

The world's population is rapidly aging. This process poses great challenges particularly for cities and communities, which have to reshape their development policies that so far have been focused on younger population groups. One of the answers to these challenges on a global scale is the initiative of the Global Network of Age-Friendly Cities and Communities (GNAFCC) founded in 2010 by the World Health Organization. The network is expanding at a high rate. Initially, it consisted of 33 cities, while when writing these words (at the end of the year 2018) the network has already expanded to over 700 cities and communities worldwide.

Among numerous publications on the topic, one of the first that thoroughly discusses this initiative was "Age-Friendly Cities and Communities in International Comparison: Political Lessons, Scientific Avenues and Democratic Issues" published in 2016 and edited by Thibauld Moulaert and Suzanne Garon with contributions by a number of renowned experts and scholars. According to editors, the book objective is to investigate the origins of the AFCC movement, present its development worldwide and focus on future challenges. The book is divided into three parts and 17 papers. The structure is well reflecting the purpose.

The first part is about the origins and contemporary developments of AFCC in the light of the active aging concept. A critical remark was made by the editors who pointed out that researchers are not just experts anymore but tend to be mobilized actors, whose engagement in the implementation of AFCC initiatives is indispensable. This is supported by the attitude of Alexandre Kalache who is not only a key figure in creating the active aging concept but also actively standing behind some of the initiatives of the age-friendly cities that are described in the second part of the book. The chapters in the first part are a very valuable source of information on the active aging concept and on how it was later operationalised by the age-friendly cities movement. The authors also present some controversies that emerged around the discussion on age-friendliness. For example, Alan Walker draws attention to the fact that "age-friendly" often refers to the "old age-friendly" instead of "aging-friendly." In this way when thinking of age-friendly solutions, they are too often focused on just the needs of older adults and not the needs of people throughout their whole life course. The use of checklists of age-friendly cities domains is also critically discussed. It is being pointed out that

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they have not been used entirely in the same way by various cities or communities which instead can adopt different diagnostic approaches. This flexibility is a great value of the AFCC network which includes cities and communities from various parts of the world.

The second part of the book focuses on the implementation of the AFCC idea. It presents nine experimental AFCC programs which refer to various locations worldwide and are in different scales, ranging from a city and community level, through national programs to international developments. The chapters present examples from Australia, South and North America, Western Europe, and China (Hong Kong). It remains unanswered why such a selection of examples was provided. It is being remarked that Africa was excluded. However, other areas were not elaborated in-depth as well. For example, it would be prudent to complete the presented examples by at least one from the former Soviet bloc. The countries from this area face a much quicker aging process than the Western ones, and it would be highly interesting also to learn from their experiences. It is essential because—as the authors of the Hong Kong chapter remark—the guidelines and checklists for age-friendly cities are so far mainly dedicated to cities and communities in developed countries. It is vital for the future development of the GNAFCC to adopt different approaches that would also fit other parts of the world.

Although the presented initiatives differ a lot (both in scale and location), they have one thing in common. Those which managed to be very successful (e.g., the case study of New York City, USA) were from the start supported by the authorities. Those cases of initiatives where such support was missing, despite great engagement of older people and scholars, did not succeed that much. Therefore, the role of the authorities both on local and state level is significant in creating effective age-friendly policies. Equally important is also know-how and general commitment of city/community officials to introduce the age-friendly concepts as the example of region Wallonia, Belgium proves. Growing know-how on age-friendly environments is increasingly important. This issue was underlined by Anne-Sophie Parent and Julia Wadoux from Age Platform Europe, a network that is highly active in promoting the idea of age-friendly environments among the European policymakers on all policy levels.

The editors did not force the authors of the chapters to follow the same evaluation rules in the described programs as they argued that providing a one evaluation model is one of the main difficulties regarding the AFCC research field. It is understandable when referring to presented national or international programs. However, cities examples should have the same content structure that could help to understand the peculiarities of a given case study better.

The third part of the book discusses future and current challenges of the AFCC, including the issue of "aging active" vs. "healthy aging" that seems to be the most pronounced. The stress on active aging is evident. While the authors of the described papers still value active aging, nowadays it is rather healthy aging which seems to be a more critical approach. Age-friendly movement is considered to be so far overly focused on active aging which, for example, excludes interventions toward people with dementia or physical disability. Thus, nowadays healthy aging with health promotion and early detection of health risk conditions is being supported.

Rapid growth in the number of GNAFCC members and a transition from active aging to healthy aging is a proof for a great dynamic of the discussion. Despite this fact, the book is a highly recommendable publication. The contributions referring to the origins AFCC give valuable insights. The others show state of the art for the year 2015 and are also an essential source of information on how the age-friendly movement emerged. AFCC movement flourishes in areas where experts in this field, dedicated officials, and policymakers are present. That is why it is a must-read for every scholar investigating the age-friendly movement. Although this book rather cannot be regarded as a handbook, it is recommendable for all dealing with the AFCC topic.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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BOOK REVIEW
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Book Review: The Longevity Economy: Unlocking the World's Fastest-Growing, Most Misunderstood Market

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Keywords: book review, old age, economy, older adults, aging

A Book Review on

The Longevity Economy: Unlocking the World's Fastest-Growing, Most Misunderstood Market

Joseph F. Coughlin, (New York, NY: PublicAffairs), 2017, 352 pages, ISBN: 9781610396639.

We are witnessing unprecedented changes in global demography. The population of older adults is growing rapidly and this process is believed to pose considerable challenges for governments and societies worldwide. Public health, pension strains, and slower economic growth, are the most commonly cited negative effects of population aging. This gloomy scenario, however, neglects the opportunities, which do arise from the aging society, such as a growing pool of professionals willing to share their expertise and talents.

A number of books and articles have been already published with regard to the implications of the demographic shift. However, Joseph F. Coughlin's book "The Longevity Economy: Unlocking the World's Fastest-growing, Most Misunderstood Market," takes a different approach when looking at the baby boom cohort. Coughlin perceives the increasing number of older adults as an opportunity rather than a burden. The author starts his work with a very interesting, yet provoking statement–"old age is made up." What he means is that our understanding of old age is socially constructed. The definition of being old is too strictly based on biological processes and may lead to a harmful image of old age. Due to stereotypes, older adults can be perceived as incapable of work, unhealthy, sick, weak, and being afraid of technology. Unfortunately, this stereotypical view has shaped and strongly affects the society and economy.

The primary focus of the book is older adult population as a growing sector of customers. Coughlin, as the founder and director of the MIT AgeLab, owns substantial experience in aging and technology. The AgeLab is a multidisciplinary research program created to gain more knowledge about the role of technology in older adults' lives and how it can improve their everyday functioning. Throughout the book Coughlin juxtaposes interesting examples of companies that embraced or failed the aging demographics. For example, certain drugstores reorganized products in a way that they can be easily accessible for older adults with vision or mobility impairments. Other businesses failed by introducing products with a confusing operating system. Coughlin emphasizes that many firms are not prepared for such a demographic transition, do not realize that older adults are dominant spenders, and criticizes them for not responding to the growing needs of the aging population.

"The Longevity Economy" is broken into two parts and 8 chapters. The first part of the book addresses a new way of thinking of old age. In the introduction, the author provides the reader

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with an overview of the current situation of older adults in the United States and explains why the population of older adults is growing. In the first chapter Coughlin describes how old age was historically formed and how the notion of being old changed throughout the nineteenth and twentieth centuries. This chapter also summarizes the origin of Social Security, its rules as well as controversies surrounding the program. The second chapter discusses the most common, widely accepted myths regarding the aging population. In addition, Coughlin presents examples of businesses' failures to meet older adults' needs. The next chapter is dedicated to women, as not only women comprise a significant majority of older adults, but also because they control the majority of household spending (among all age groups, women influence 64% of consumer purchases). The first part ends with a discussion of "The Villages" and other age segregated communities. The author elaborates on their origins and factors influencing older adults' lifestyles.

The second part of the book focuses on coping with misconceptions of old age and creating products that will empower older adults. The author draws upon his experience and outlines solutions that could strengthen the power of the senior market. In each chapter he presents vivid examples of what strategies work and what could be improved. Coughlin argues that it is important to stop treating older adults as patients and start looking at them as customers. Unfortunately, the idea that older adults are weak and have no aspirations is reinforced in the culture and in turn, is very costly to businesses which produce mainly health-related products. The author goes on to share insights on how to use older adults' potential and encourage them to do meaningful activities.

Coughlin concludes that many firms should study the longevity market to test their assumptions about older adults' behaviors. The needs of older adults are yet to be discovered, as the older adults often times don't know what they need until the product is offered to them. Just like other consumer products, these should also be appealing, exciting and easy to use. Equally important is to realize that older adults are not afraid of technology. The author also advises not to trust your intuition but rather study lead users, which will allow the companies to gain a better understanding of how the products can be received by wider target group.

One aspect that I wish was scrutinized more in this book is a more in-depth discussion on how the usage of technology could encourage older adults to take preventative steps to enjoy independent lives longer.

Coughlin's main message lies in the importance of overcoming the myths related to aging. It is important to recognize that consumer demands are shifting and older adults are a diverse group of consumers. With an increasing number of older adults, health-and-safety products are needed, but older adults also want to purchase things and use services that improve their quality of life. This book captivates one's attention with thoughtful message supported by real world examples. Anyone interested in aging and needs of the aging population would find a great value in this book.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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POLICY AND PRACTICE REVIEWS
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Creating a Culture of Health in Planning and Implementing Innovative Strategies Addressing Non-communicable Chronic Diseases

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Ongoing demographic changes are challenging health systems worldwide especially in relation to increasing longevity and the resultant rise of non-communicable diseases (NCDs). To meet these challenges, a paradigm shift to a more proactive approach to health promotion, and maintenance is needed. This new paradigm focuses on creating and implementing an ecological model of Culture of Health. The conceptualization of the Culture of Health is defined as one where good health and well-being flourish across geographic, demographic, and social sectors; fostering healthy equitable communities where citizens have the opportunity to make choices and be co-producers of healthy lifestyles. Based on Antonovsky's Salutogenesis model which asserts that the experience of health moves along a continuum across the lifespan, we will identify the key drivers for achieving a Culture of Health. These include mindset/expectations, sense of community,

and civic engagement. The present article discusses these drivers and identifies areas where policy and research actions are needed to advance positive change on population health and well-being. We highlight empirical evidence of drivers within the EU guided by the activities within the thematic Action Groups of the European Innovation Partnership on Active and Healthy Aging (EIP on AHA), focusing on Lifespan Health Promotion and Prevention of Age-Related Frailty and Disease (A3 Action Group). We will specifically focus on the effect of Culture on Health, highlighting cross-cutting drivers across domains such as innovations at the individual and community level, and in synergies with business, policy, and research entities. We will present examples of drivers for creating a Culture of Health, the barriers, the remaining gaps, and areas of future research to achieve an inclusive and sustainable asset-based community.

Keywords: culture of health, active and healthy aging, inclusive health care, salutogenesis, health innovation

BACKGROUND

We are currently facing exceptional demographic changes, as longevity increases while falling fertility rates create labor shortages. New waves of urbanization and the rise of NCDs in aging populations have been eliciting complex challenges in social and health systems worldwide, particularly in western countries. Although urbanization is generally associated with improvements in income levels and health outcomes, pressure from these demographic changes is inducing social and health inequalities in cities and in rural areas that undergo a depopulation phenomenon. Worldwide, non-communicable chronic diseases (NCCD) are on the rise because of unhealthy urban lifestyles and inadequate service provisions. According to the World Health Organization (WHO), 86% of the deaths and 77% of the loss of healthy life years in Europe are caused by chronic diseases (cardiovascular disease, cancer, diabetes mellitus, chronic respiratory disease, mental health problems, and skeletal muscle disorders). Approximately €700 billion are spent every year on the treatment of chronic diseases across the EU which has the highest burden of NCCD worldwide. Cardiovascular disease and cancer cause nearly three-quarters of mortality in the region, where three major groups of diseases—cardiovascular disease, cancer, and mental disorders including cognitive decline/dementia. An impressive percentage of health care resources are spent on their treatment. To face these challenges, a new culture of health is required, which takes into account disease prevention and health promotion activities aimed at strengthening individual, environmental and social resources. Such improved well-being integrates mental health and physical health and results in holistic approaches to disease prevention and health promotion across the lifespan. Individuals with high levels of well-being are more productive at work and more likely to contribute to their communities. In this context, measures of subjective well-being are key political issues compared to Gross Domestic Product (GDP), since subjective well-being better captures the quality of life of a nation's citizens, and lead to policies that are more effective and equitable. In this new paradigm, health crosses the road of well-being beyond the traditional boundaries of health care delivery systems. Existing health care systems are fragmented, reactive, and costly. Attempts to change this model started in 1998, when "Improving Chronic Illness Care" created the Chronic Care Model (CCM) (Alleyne et al., 2010; Gee et al., 2015; World Health Organization, 2018). The CCM identifies the essential elements of a health care system that encourages high-quality chronic disease care: the community, an integrated health system, empowerment and self-management of active and informed patients and providers, delivery system design, decision support, and clinical information systems. The CCM, however, does not adequately addresses the proactive approach toward well-being even in persons who have NCD (Diez Roux, 2001; Krieger, 2001; McMichael, 2002; Trujillo and Plow, 2016; Acosta et al., 2018). Well-being can be referred to the complex array of physical, psychological, social, economic, geographical, cultural factors that exert a powerful influence on our lives and our health, not just "absence of illness." In exploring a more ecological model of addressing well-being across the lifespan even in the presence of NCD, we will explore the general principles and evolution of the Salutogenesis as it applies to well-being. Antonovsky's Salutogenesis theory assumes that the ecosystem works as a whole since its focus is on creating a "new higher state of health than the one is currently experienced" by the individual or the system (Antonovsky, 1979, 1996). The Salutogenesis theory can be applied at a societal level, but also at the individual and a group level. The key concept of the theory is the sense of coherence (SOC) which means the ability to comprehend the whole situation and the capacity to use available resources. This capacity is a combination of peoples'/organizations/ability to assess and understand the situation they are, to find a meaning to move in a health promoting direction, as well as the capacity to act. The three dimensions of sense of coherence are: comprehensibility, meaningfulness, and manageability (Lindström and Eriksson, 2005).

It is becoming increasingly clear that to improve population health, it is necessary to engage all sectors toward well-being, equity, and multiple domains as depicted in **Figure 1**. These synergies are not simply linear (cause-effect) but rather impact and are impacted along multidirectional domains and are essential to creating a Culture of Health based on the

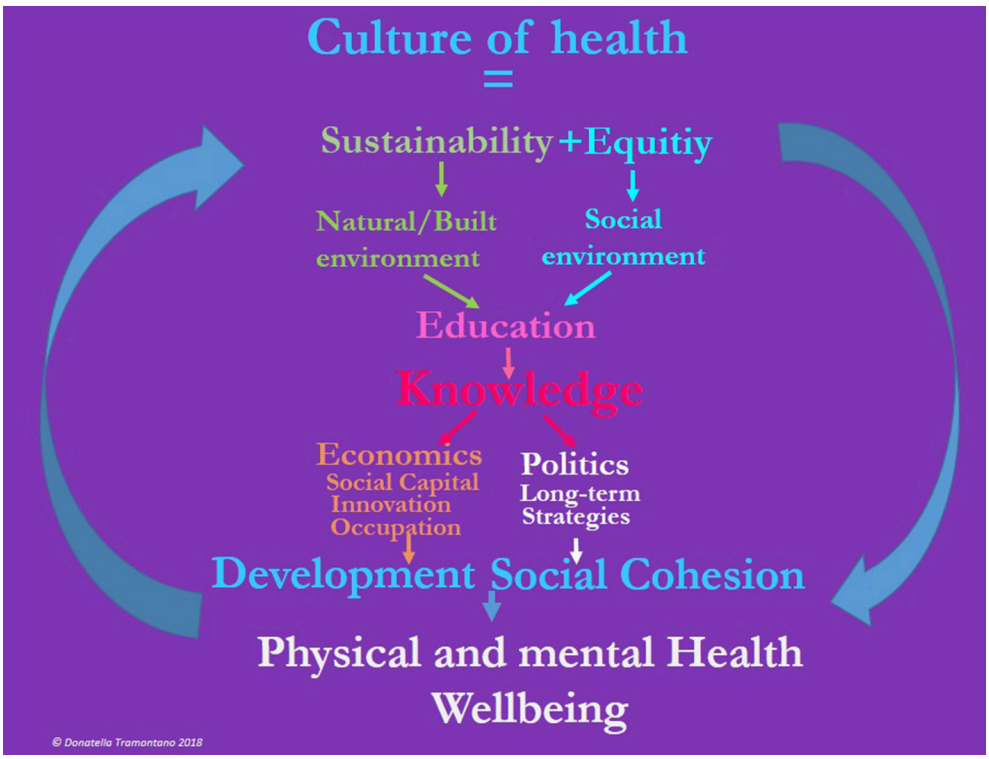

FIGURE 1 | The determinants of health according to the CSDH.

concepts of the Social Cohesiveness Salutogenesis theory, as depicted in **Table 1**. Although. the Salutogenesis theory with its multidimensional components has yet to be applied at a large scale and across various entities, there are signs that this is happening. A growing number of communities, regions, and states are redefining what it means to get and stay healthy by addressing the multiple determinants of health, among diverse sets of stakeholders. These developments in health and society present a chance to catalyze a grassroots cross-border movement demanding and supporting a widely shared, multifaceted vision for a Culture of Health (Huber et al., 2011; Lavizzo-Mourey, 2017). One's notion about what it means to be healthy is influenced by their own culture (Maoz et al., 1977, 1978), therefore making health a shared value is central to building a culture of health. In this article, we define a new action framework—a culture of health, as a conceptually important construct to spur faster progress toward equitable health outcomes across borders and regions (Chandra et al., 2016).

Our aim is to create a proactive agenda for immediate action toward creating a "culture of health" as part of a shared cultural value across the European Union (EU), as expressed in Lisbon Treaty, in the EU Health Strategy and the European Innovation Partnership on Active and Healthy Aging (EIP on AHA) (Lagiewka, 2012; García, 2013; Bousquet et al., 2015, 2017; Malva and Bousquet, 2016; Illario et al., 2017; Liotta et al., 2018a; Malva et al., 2018).

The study led by the Commission on Social Determinants of Health (CSDH) set up by WHO summarizes the evidence on how the structure of societies, through multiple social interactions, norms, and institutions, influences population health and provides an overview of what governments and public health can achieve (WHO, 2010a). The CSDH framework departs from many previous models by conceptualizing the health system itself as a social determinant of health (SDH), especially in reference to service accessibility and sustainability, to differences in exposure and vulnerability, and through inter-sectoral actions led from within the health sector (**Figure 1**).

The building blocks for creating a culture of health include, first and foremost, health education at all levels of society, training programs, and policies that support and encourage person-centered care of well-informed citizens and community/policy leaders. Large-scale adoption of digital solutions can support prevention, healthy lifestyles, and integrated care as the new drivers to improve the quality of life throughout the lifespan (CSDH, 2008).

The determinants of health and SDH, such as biological, physical, behavioral, environmental, and social factors, are associated with the individual perception of illness or health. Yet, the health level and perceived quality of life of individuals are determined by several factors, policies, and conditions that lay mainly outside the control of individual concerns. Therefore, efforts to improve population health should be centered not

TABLE 1 | The three dimensions of sense of coherence according to the Social Cohesiveness Salutogenesis theory.

Key concepts of sense of coherence (SOC)	Content
Comprehensibility	The extent to which person/entity perceive the stimuli that confront them, deriving from the internal and external environments, as making cognitive sense as information that is ordered, consistent, structured, and clear. It is the way of perceiving and understanding the world and own place in it. e.g., health perceptions, body image, self-health, comprehension, therapeutic patient education. e.g., health perceptions, body image, self-health, comprehension, therapeutic patient education. The cognitive component of the SOC. The cognitive component of the SOC.
Meaningfulness	Refers to the extent to which a person feels that life makes sense emotionally, that problems and demands are worth investing energy in, are worthy of commitment and engagement, seen as challenges rather than burdens. Relates to the emotional side of the overall attitude to life and its events, e.g., instrumental value of health, the absolute value of health, counseling and support. The emotional component of the SOC.
Manageability	The extent to which an individual entity assesses the resources and abilities readily available to meet the needs, e.g., external sources such as professional support, family coherence, work and leisure time, social support, self-management skills, and minimizing the discomfort of change. Internal support: self-imagine, self-help, attitude. The instrumental/behavioral component of the SOC.

only in the health care system but also on the conditions where individuals are born, live, work, and age (Lock, 2000).

The determinants of health especially referred to social factors can be associated with health inequalities, that have been targeted by national and international efforts (Goldblatt et al., 2015). Chandra et al. (2016) propose 3 drivers of health (e.g., priorities or focus areas) to develop new shared values to drive health promotion and improve individual and population health. The first one is mindset and expectations, that is related to the way individuals and communities view health and well-being, and to their responsibility to advocate for improvements in policies, environments, and services promoting health. The second driver is the sense of community that fosters identity of individuals based on feelings of membership, belonging and shared experiences. The last driver is civic engagement, a process combining individual knowledge, skills, values, and motivation to make a difference in the civic life of the community.

In the same perspective and aiming to improve health equity through action across the life course, the European "DRIVERS for Health Equity" project (Grant number #278350); project was created, establishing recommendations to improve health inequalities at 3 actions areas (Goldblatt et al., 2015). The first one is early child development because adversity at this stage of life has profound effects and outcomes on cognitive domain affecting communication and language, social and emotional skills. The second driver is fair employment, as employment and working conditions impact directly and indirectly on the health of individuals. The third driver is income and social protection, as income and living conditions influence an individual's health and variations between social groups. Social protection can mitigate the consequences of income loss.

Drivers and shared values influence health policies through decisions, plans and/or actions that are undertaken to achieve specific health care goals in society. Drivers also set strategies that proportionate universalism in health, through the prioritization of investments, sharing responsibilities, and providing equitable health opportunities.

Efforts to improve population health traditionally center on the healthcare system as the key driver, orienting the search for drivers of health toward the healthcare systems, despite the evidence that the effects of medical care are limited in determining who becomes sick or injured. Accordingly, medical care accounts for 10%, similarly to biology and genetics, while social factors and healthy behaviors account for 70%. Thus, improving population health requires broader approaches that address social, economic, and environmental factors, since to cure is the responsibility of the healthcare system, whereas to care is a responsibility of the whole society. Mounting evidence supports causal relationships between many social—including socioeconomic—factors and health outcomes, not only through direct relationships but also through more complex pathways often involving bio-psycho-social processes. In modern society, we undergo a daily array of low-level chronic stress, and our body is continuously in the stress response mode causing insufficient recovery, recognized as an increasing public health concern because of its long-term effects on health and on NCD (Sluiter et al., 2000; Nilsson et al., 2011; McEwen). Social stressors jeopardize the health, quality of life and overall well-being, lowering physical, and mental well-being. The molecular mechanisms relating stress and health are being clearly identified: chronic stress impairs the immune system, increases the production of molecular mediators of stress such as free oxygen radicals, and induces a chronic level of inflammation, which in turn is a key factor in the onset, progression, and outcomes of most common NCD. Tawakol et al. (2017) state that psychosocial stress resulting from adversity is a precipitant of morbidity, as it is associated with an increased risk of cardiovascular disease.

An unequal social context harms health directly, also driving individuals into detrimental coping mechanisms and behaviors, such as drug and alcohol abuse, compulsive eating, gambling, and violence. Moreover, inequality harms health

indirectly eroding societal trust and destabilizing communities, endangering social cohesion. Emerging drivers of a new "Culture of health" are represented by equity, social cohesion, solidarity, social justice, and sustainability. **Figure 1**, dramatically depicts the rather complex and multidirectional impact of the social/biological/environmental domains that can produce a "Culture of Health" model for the whole lifespan and across cultural and geographic contexts.

DEFINING THE *CULTURE OF HEALTH* IN THE FRAMEWORK OF SOCIETAL CHALLENGES

The WHO in 1946 defined health as a state of physical, mental, and social well-being and not simply the absence of disease or infirmity (WHO, 1946), viewing health holistically. During the first international health promotion conference in Ottawa in 1986 (WHO, 1986) health started to be seen as a process enabling people to develop through their assets, achieving well-being despite the presence of disease.

This new concept of health and well-being contrasts the pathogenesis model, which has a biomedical focus, missing the holistic goals of health and well-being in the prevention and care of chronic and lifestyle-related diseases (Povlsen and Borup, 2015). Opposite to pathogenesis, the Salutogenesis model (Antonovsky, 1979) focuses on factors that promote, increase and maintain well-being (Antonovsky, 1996). Salutogenesis does not view health only as a biological asset, rather as a psychosocial concept and a resource. This means that not just body, mind, and the close environment but also society, and how the individual manages to act and live in it, influence health (Olivius et al., 2004).

Health becomes a positive concept emphasizing social and personal resources, as well as physical capacities. According to the Ottawa Charter, improvements in health need three basic prerequisites: advocacy for health, enabling (taking action in partnership with individuals or groups to empower them) and mediation (different interests of individuals and communities, and different sectors are reconciled to promote and protect health). Health promotion is concerned with action and advocacy to address the full range of potentially modifiable determinants of health—not only those related to the actions of individuals, such as health behaviors and lifestyles, but also factors such as income and social status, education, employment and working conditions, access to appropriate health services, and the physical environments. Achieving change in lifestyles and living conditions that influence health status represents intermediate health outcomes (WHO, 1998).

In this framework, it is relevant considering the changing patterns of diseases, where infectious diseases as the major cause of morbidity and mortality have been replaced by diseases related to individual lifestyle and environmental factors, by cancer, mental diseases and autoimmune and metabolic disorders (Povlsen and Borup, 2015). Some authors referred to this phenomenon as "waves" of diseases and referred to NCDs as "civilization diseases" (Hjort, 1993). In 2008, according to the WHO (Malva et al., 2018), NCDs accounted for two-thirds of global deaths. These diseases are costly for society and the economy, hence the importance of reorganizing the healthcare system to improve their management (Povlsen and Borup, 2015), taking into account knowledge and practical skills, as well as the psychological and social support required to enable individuals and family to adapt and acknowledge the disease (Povlsen and Borup, 2015).

Investing in prevention and control of NCDs reduces premature deaths, preventable morbidity, and disability. At least 86% of deaths and 77% of the disease burden in the WHO European Region are caused by this large group of disorders that have in common determinants (social, economic, etc.), modifiable risk factors and prevention strategies (**Figure 1**). Action must be directed not only at the individual but also at the social and living conditions, that interact to produce and maintain these behavioral patterns. There is no "optimal" lifestyle to be prescribed for all people: culture, income, family structure, age, physical ability, home, and work environment make certain ways and conditions of living more attractive, feasible and appropriate (WHO, 1998). All these variables have been extensively studied and reviewed in the newly published Salutogenesis handbook (Pelikan, 2017).

EVIDENCE-BASED EMERGING DOMAINS FOR BUILDING A *CULTURE OF HEALTH*

Multilevel and Multidomain Well-being Assessment

Well-being is a comprehensive concept including individual health, as objective status and subjective perception. Quality of life (QoL) is the more appropriate approach to measure individuals' well-being because of its capacity to capture both the individual expectations and the objective health status. These questionnaires are mainly used to compare the QoL of individuals before and after an event or an intervention more than to evaluate the population health status, due to the subjective component of the assessment (Lins and Carvalho, 2016). The health status of a population is difficult to measure because it is hard to define among individuals, populations, cultures, or even across periods. The Healthy Life Years (HLY) expectancy is an indicator attempting to estimate the health status of the population in a country and is related to factors that also include prevention programs. The measure of HLY expectancy is based on self-reported data, affected by respondents' subjective perception as well as by their social and cultural background (European Union, 2018). However, it can be considered an indicator of the prevention programs impact on the population, and of the trend of this impact during the years. Life Expectancy (LE) can also be considered an objective indicator of the population health status, influenced by prevention programs as well as by clinical activities, reflecting the change of mortality at all ages over the years. The combination of HLY and LE is an effective way of depicting population health status, comparable to Infant Mortality Rate as an indicator of social and economic condition at the country level. However, the need for more specific information at the population level to

plan health and social care is emerging (Rijken et al., 2017). The increasing prevalence of chronic diseases pushes the carers community (professionals and informal caregivers) to move the aim of their interventions from pursuing a cure to taking care, including patient-relevant outcomes such as frequency of hospital admission or institutionalization and clinical outcomes (Rijken et al., 2017). Bio-psycho-social frailty is a multidimensional measurement of the risk implied by worsening of quality of life: it is characterized by a loss of physiological reserve, often in the setting of limited socioeconomic resources that results in increased vulnerability to adverse healthcare outcomes (Liotta et al., 2016b). Bio-psycho-social frailty is a comprehensive assessment of the risk of functional decline affected by social and economic domains as well as by functional status and psycho-physical impairment. Many evaluation tools of frailty at community level take the hospital admission, institutionalization, and mortality as indicators of frailty as well as of health and social care service performance (Gilardi et al., 2018). The combination of individual assessment of frailty with big data information stemming from standardized data flow could represent in the future the appropriate approach to assess well-being at both population and individual level and plan effective social and health care services.

Community Based Synergies for a Sustainable Healthy, Active Lifestyle, and Social Connectivity: The Challenges of an Aging Population

The Case for Older Adults

The heat wave that hit Southern Europe during the summer of 2003 caused a relative increase of unexpected deaths in older adults (García-Herrera et al., 2010) especially among the +75 individuals living alone, revealing the deadly impact of the combination between social isolation and psycho-physical impairment. Social isolation is a well-known risk factor for mortality, with maximum impact among older adults, where it is more important than smoking (Holt-Lunstad et al., 2015). However, a systematic preventive approach aimed at reducing social isolation is not pursued by the health systems, although a program aimed at identifying isolated and/or sick individuals, supporting social interventions, might show the same protective impact as a "natural" network of relationships.

Social connections at the population level are weakening, where the most popular living arrangements are living alone, and older age is associated with higher risk of unexpected adverse events. The percentage of people declaring they cannot count on someone in case need is about 19% in Italy, close to 28% among the +75 individuals. Heat-related mortality, as an extreme climate event, hitting mainly the frail part of the population tests the resilience capacity at the population level, related to the Salutogenesis theory and the multidomain cross factors as depicted in **Figure 1**. However, a similar impact of the heat-waves occurred in Italy in 2003 and 2015, when older adults' mortality showed the limits of the preventive action in the field (Cho et al., 2017).

The experience of "*Viva gli Anziani!*" (Long live older adults) program (Comunità di Sant'Egidio, 2010), running in several Italian cities for 14 years by the Community of Sant'Egidio, shows the potential impact of a social program aimed at protecting socially isolated individuals and increasing the social capital at the community level. The "*Viva gli Anziani!*" program promotes a proactive approach to reach the whole targeted population. According to the risk of a negative event, as assessed by the multidimensional evaluation of frailty offered to all participants, an individual care plan is drafted, and the client is included on the list for periodical phone calls: the higher the risk of adverse events, the more frequently the person will be called, with a maximum frequency of once every 2 weeks. The activities of the program are intensified when a heat wave occurs: individuals +75 are traced by phone, and if necessary, the staff intervenes with a home visit, bringing food and/or medicines as necessary, or involving the client's network of relationships. Over the years, the operators act as a liaison between older adults assisted by the program and the community, in order to increase the social capital of both. The impact of such a program is the limitation of the mortality increase during heat waves (in 2015 in Rome the mortality rate increase was halved among the participants compared with the non-participants who lived in the adjacent urban areas) with 10% annual reduction of hospitalization rate and halving of the annual institutionalization rate (ISTAT, 2018; Liotta et al., 2018b).

Case Studies of Salutogenesis Model in NCD

A series of papers from Finland addressed the health promotion and management of metabolic syndrome and type 2 diabetes, utilizing the Salutogenesis model (Halkoaho et al., 2014; Miettola and Vilanen, 2014; Voseckova et al., 2017). In the case of diabetes, counseling was highly traditional, including nutrition, exercise, and medication. The counseling was disease-centered and focused on medication instead of individual everyday life or health-promoting and empowering aspects, such as meaningfulness and manageability. The study showed that health-promoting recourses are not easy to recognize or quantify. Therefore, more teamwork between different stakeholders is needed. In practice, responding to the patients' needs, and especially with regard to health-promoting recourses in counseling, requires more education.

In addition to diabetes, cancer is now the second most common NCD and the WHO recommended approaching patients and their caregivers as a "unit of care," focusing on the overall well-being of the patient-caregiver dyad rather than just on the patient. An approach most easily addressed within the Salutogenesis theory and the complex multidimensional aspects of well-being as shown in **Figure 1**.

Family caregivers are the supporting column of any long-term care system and are essential health team members: they play a key role in the management of patients with cancer and provide caregiving activities once provided only by professionals. Often, they are not adequately trained or prepared, and it is well-known that caregiving to a family member with cancer has health implications. Those caring for individuals with chronic diseases are more likely to experience insufficient time for sleep,

self-care, and exercise and to face social isolation (Grov et al., 2006; Robison et al., 2009). Caregivers show high levels of stress, depression, greater use of prescription drugs and alcohol use and show a higher mortality rate (Zavagli et al., 2012, 2016). Therefore, supporting informal caregivers effectively is beneficial for the patient-carer dyad and public finances.

The impact of caregiving on caregivers' life depends more on personal psychological resources than on objective caregiving demands or social resources. According to the Salutogenesis Model, the Sense of Coherence (SOC) has a key role in this process. SOC is similar to a coping disposition (Winger et al., 2016) and reflects a person's view of life and capacity to respond to stressful situations, a global orientation to see the world as comprehensible, manageable and meaningful.

Thus, it becomes important to integrate caregivers into formal healthcare settings, that *Associazione Nazionale Tumori* (ANT) Foundation does in Italy at a community level. ANT is an Italian non-profit organization providing critical support in home settings to the patient-caregiver dyad throughout the cancer trajectory, from diagnosis through survivorship, palliative care or bereavement. It does this both from a clinical and research viewpoint (Casadio et al., 2010). Health promotion efforts benefit from strengthening SOC (Super et al., 2015), as learning to cope effectively and developing resilience is beneficial in oncology, and palliative care and people may be "trained" to resilience. Patient and family empowerment is important to strengthen existing general resistance resources (GRRs), create new ones and make them available for people to be aware of, identify and benefit from them. Only in this way, empowerment strategies can increase patients' abilities to manage their disease, adopt healthier behaviors, and use health services more effectively, while also increasing the coping skills and efficacy of their caregivers.

This Salutogenic concept is applicable at different levels: interventions and treatment of groups and individuals (e.g., meaning-centered interventions, mindfulness-based stress reduction) and public health policies (societal level).

Co-development of Technological Innovations With End-Users

Despite the advancement of technological solutions to sustain independence and well-being of the aging population, the number of the innovations moving from the research field to the clinical scenario or to the market is a single digit fraction. There are many reasons for this peculiarity, and some are summarized below.

(1) The idea behind a technological solution is immature or not appropriately developed. This is the case that occurs when the reasoning behind technological advancement, although academically sound, does not correspond to a true issue for the user foreseen for that technology. This situation might occur when the analysis of the end-user needs is not appropriately carried out.

(2) The technological solution, although appropriate, is not user-friendly, and therefore difficult to be picked up. This scenario might occur when the final end-user is not skilled enough to use that technology, or that technology implies a long learning curve that cannot be completed.

(3) The technology is appealing, the end user picks it up fast and then loses interest, returning to their usual behavior, dismissing the technology. This phenomenon, which is referred to as the "Pokémon-Go Effect" (Wong et al., 2017; Visco et al., 2018), occurs when the real usefulness of the technology is not very well-understood by the end-user, does not change her/his daily life and therefore it is no longer used.

The underlying common feature in the failure of technology innovation uptake is the lack of end-user participation in the development of the technology itself. This issue is so impelling that the approach of the European Commission for digital health innovation suggest to set up a "System for Change," establishing multi-stakeholders collaboration (including end-users), identifying the real needs the innovations will address and building a strategy on that basis (European Commission, 2014).

The construction of the cultural ecosystem for innovation of health and care should be based on multidisciplinary and multi-actor collaborations. "Living labs" are active laboratories where it is possible to assess "creative" ways to improve health and well-being in the local context while facilitating implementation of innovations and the use of good practices and experiences gained at local, national and international level. The logic of these ecosystems is "user-driven," and focuses on the involvement of users of services in the planning, experimentation, and implementation of innovative approaches aimed at improving health and well-being, with an "iterative" modality, to scale-up on the basis of experience. This approach stimulates collaboration among the stakeholders of the healthcare innovation process, such as patients, professionals, researchers, social service providers, education system, industry (Kujala, 2003; Bodker et al., 2004; Niitamo et al., 2006; Omachonu and Einspruch, 2010; van Velsen et al., 2015; Vollenbroek-Hutten et al., 2015; Liotta et al., 2016a).

Creating Synergies Among all Stakeholders to Strengthen Well-being in the Workplace: The Contribution of Business/Companies and Health Care Facilities

Work, health and community are related. Work influences employees mental and physical health (Burton, 2010). On the other hand, the physical and the mental health of workers affects the enterprise: when sick, employees' productivity at work decreases, medical cost as well as absenteeism and presenteeism related cost increase, the quality of work and overall participation become compromised (Cockburn et al., 1999; Goetzel et al., 2004; World Health Organization Regional Office for Europe, 2005; Ulrich et al., 2016). In the sixth European Work Conditions Survey (Eurofound, 2017) almost one in every five workers in the EU28 (18%) reported an illness or health problem lasting more than 6 months. More than half (54%) of those reporting chronic disease also stated that their daily activities are limited because of their health problem, and only 21% said that their workplace or work activity changed to accommodate their health condition.

As workplaces exist in communities and societies, they also have a significant impact on workers' health and enterprise outputs. Today organizations recognize the vital role they play in the development and well-being of society, and that their duties go beyond their financial obligations and legal requirements (Krainz, 2015; Litchfield et al., 2015). They assume social, ethical, and environmental commitments that incorporate in their daily practice, to meet stakeholders' expectations and boost their competitiveness. The organizations committed to corporate social responsibility (CSR) significantly impact their employees' health and well-being (Krainz, 2015).

In the actual context of an aging workforce with NCD, there is a need maintain or improve workers' physical, mental and social well-being and ensure high levels of work engagement, by addressing a number of factors at individual, job and team, organizational but also non-work and societal levels (Yaldiz et al., 2017; Zacher et al., 2018) and by implementing effective measures in this regards, such as work design, health, and performance management and transitions to retirement and bridge employment are particularly important (Zacher et al., 2018).

Health, cognitive abilities, and work motives change with age. Therefore, workplaces need to be designed and adapted to account for age-related changes in physical and mental abilities, maintain and uphold workers' well-being and prevent health challenges and disabilities (Zacher et al., 2018). Flexible working arrangements may benefit the physical and mental well-being of older workers as they allow workers to disengage from stressful activities and develop an identity outside work that can help ease their transition to retirement (Zacher et al., 2018). Workers suffering from an NCD will find it easier and less challenging to accommodate medical treatments, rehabilitation sessions, and episodes of tiredness and weakness related to their illness. Moreover, worksites are important places for promoting health among adults, as a great part of the adult population of a country is usually in the labor market and many employed people spend a significant part of their time at work (Riekert et al., 2014).

The discussion so far stresses the need for complex, multilevel approaches involving a variety of stakeholders from within the companies and the society. In Europe, a number of government and social partners measures aimed at keeping older workers in the labor market have been identified (Eurofound, 2013), including: comprehensive initiatives (national strategies and programs as well as social partner agreements), employment and skills developments, health and work environment improvement, working organization, working time and changing attitudes. Examples addressing health and work environment include: compulsory bargaining on health and safety for companies with at least 50 employees, where a majority of workers are exposed to difficult working conditions, in France; increasing the number of inspections focusing on the working conditions of older workers, in Portugal. A few examples addressing preventive and health promotion measures were identified, especially in northern Europe: the MASTO project, overseen by the Finnish Ministry of Social Affairs and Health from 2008 to 2011, promoted practices to increase wellness at work, such as the new centers for well-being at work, to prevent the onset of depression, provide treatment and rehabilitation to cope at work or to return to employment, and reduce cases of work disability due to depression; periodic health checks (Pago) in Netherlands; information initiatives directed to workers and managers in Germany, to make them more aware of health issues and responsible for the state of their own health.

The concept of a "culture of health" could not be identified in scientific literature or even gray literature reporting initiatives in Europe, especially involving companies and with an explicitly objective of lowering the burden of NCD and improving the health and well-being of a workforce. However, programs sponsored by global companies also based in the EU have initiated "drivers" based on the Salutogenesis theory. A report from Optum (2017), a division of United Health Group, involved a research survey of 273 multinational employers (3,000 or more employees) located in Asia-Pacific (APAC); the United Kingdom, Europe and United Arab Emirates (EMEA); or Latin America that offer two or more health and well-being programs. Findings show that the top five well-being and health programs offered in EMEA region were: relationship with near-site clinic; gym membership discounts; onsite/worksite fitness center; health risk assessments; weight management program. The bottom five well-being and health programs offered in EMEA region were: biometric health screenings; case management programs; access to onsite health specialist; health advocacy service; onsite medical clinics/worksite clinics, tobacco cessation program and flu vaccines. When questioned, about half of the employers believed that their employees' well-being was outstanding. Half of the employers surveyed believed that their company has a firmly established culture of health ownership and that culture is important or even extremely important. The private sector, particularly large corporations, has a tremendous influence on culture and is integral to achieving high social and health standards for all stakeholders, including employees. Increasingly, shareholders, investors, boards, and executives are prioritizing business values and citizenship, as well as financial measures, knowing that these affect public perception, brand, and long-term sustainability.

A growing number of companies recognize their ability to contribute to a Culture of Health and have been using their reach and influence to improve the health and well-being of employees, families, and the communities where they operate. By recognizing the importance of health and well-being across the value chain, businesses can reap the rewards with greater productivity and higher retention. Measures, metrics, and indicators play a key role in supporting corporate efforts. They promote an understanding of the concept, inform strategic thinking and planning, and provide a basis for assessing progress, gaps, and opportunities (Whitmore et al., 2018).

Novo Nordisk, known for its work in diabetes care, has expanded its focus to include a long-term, sustainable commitment to obesity treatment and prevention. The company has an industry-leading obesity pipeline in development to help those living with excess weight or obesity achieve meaningful and sustainable weight loss, but it recognizes that the bias

and stigma which surround obesity today will hinder the effectiveness and adoption of any medical treatment option. To combat this stigma, Novo Nordisk is partnering with the broad community on education and advocacy, increasing access to care, and advancing medical management. Changing the social norms around obesity will ensure that patients can and do seek out treatment, and more healthcare providers offer affordable, evidence-based, medical care for obesity, both improving the lives of people living with obesity and creating a stronger market for Novo Nordisk's products.

ABInBev, the largest beer producer in the world, has supported many approaches to curbing harmful drinking over the years. This global company supports research and partnership with academics and communities to study further the population impact on such partnerships [for more details see: https://abinbevfoundation.org/leadership].

Each of these cases demonstrates the multidimensional aspects that affect well-being and health promotion, particularly as it relates to the built environment and socioeconomic factors as shown in **Figure 1**.

However, there are barriers that must be overcome in order to establish a successful industry/academia/community collaboration (Kilpatrick et al., 2017).

The Relevance of Education and Training for all End Users: Professionals, Citizens, and Policymakers

Building on the Salutogenesis model, Green and Kreuter explored the complexity of health promotion education and planning in the creation of the PRECEDE-PROCEED model (Green and Kreuter, 1999). This model distinguishes five phases in the planning of health education strategies holistically, considering different levels: individuals, society and healthcare system. The model states that health education should start with a common diagnosis to determine people's perceptions of their own needs or quality of life, and their aspirations for the common good. The second phase is the epidemiological diagnosis and aims to determine which health problems are important. In the behavioral and environmental diagnosis, the third phase, the main determinants of the health problem are analyzed. In the educational and organizational diagnosis, an analysis is made of the predisposing, reinforcing and enabling factors that should be changed to initiate and sustain a process of behavioral and environmental change. These factors are the immediate targets of a health promotion program. The fifth phase is the administrative and policy diagnosis and focuses on developing health education and health regulation actions. These factors are depicted in **Figure 1** which show the multifactorial and interactive antecedents to well-being.

Aging of the population in western societies and the rising cost of health and social care are refocusing health policy on health promotion and disability prevention among older people. However, efforts to identify at-risk groups of older adults and to alter the trajectory of avoidable problems associated with aging by early intervention or multidisciplinary case management have been largely unsuccessful. This failure arises from the dominance in primary care of a managerial perspective on healthcare for older people and proposes instead the adoption of a clinical paradigm based on the concept of "one health" across all policies. On these bases, professionals from the social and health domains should be trained in order to effectively and collaboratively meet the needs arising from the present socio-demographic situation.

Shortcomings have been noted in undergraduate curricula worldwide with regard to content about the multi-domain approach to health (Cano et al., 2018; Windhaber et al., 2018). The challenge for health professionals is to stimulate undergraduate interest in cross-sectoral training where the burden of an increasing prevalence of older people suffering chronic illness and multiple comorbidities can be sustained only with a paradigmatic shift toward a proactive attitude. Efforts to expand the health professional curriculum in the EU countries have begun, for example, nursing education focusing on community-based competencies for aging populations, as reported in the EnHANCE [www.enhance-fcn.eu; Nr 2017-2976_591946-EPP-1-2017-1-IT-EPPKA2- SSA- Ref.17D027253]. Evidence suggests that the management of acute illness associated with hospitalization dominate medical curricula. Managing frailty and multimorbidity mostly regard the geriatrics medical specialty, whereas to promote active and healthy aging there is a need for close collaboration and communication along the entire life-course, across specialties, and between professionals (psychologists, sociologists, communication experts, social workers) and caregivers.

Fostering Compassion in Health Care Systems

While the aging of societies around the world, particularly in the EU (Rechel et al., 2013), is to be celebrated, it is associated with many challenges (Cano et al., 2018), the most important of which is the provision and rationing of appropriate and timely care to the growing number of older adults with frailty, a multi-factorial vulnerability to adverse outcomes associated with disability and co-morbidity (Clegg et al., 2013; Rodríguez-Mañas et al., 2013). Frailty is now recognized for the first time as an emerging public health emergency requiring urgent attention (Cesari et al., 2016). This has led the EU to prioritize policy and research funding targeting preventive strategies that promote active and healthy aging (Bousquet et al., 2014, 2017; Buckinx et al., 2015; O'Caoimh et al., 2015; Michel et al., 2016). An understanding of the epidemiology of frailty is important to develop not only appropriate responses but also effective preventive measures, ideally before the onset of functional decline (Plough, 2015). To support this, the European Commission recently funded the Joint Action on Frailty Prevention, ADVANTAGE (grant number #724099). This aims to develop a holistic and comprehensive strategic framework for the prevention and management of frailty at the European level, bringing together partners from 22 European countries. Public health plays a central role in shaping a shared Culture of Health (O'Caoimh et al., 2018). It is essential to develop a fair and equitable roadmap for frailty prevention toward active and healthy aging, and to embed a public health approach as part of Europe's Culture of Health. This encompasses

a better understanding of the risks associated with developing frailty including the factors that drive frailty transitions from non-frail and pre-frail to frailty and back, some of which are socially determined (Rodríguez-Laso et al., 2018). It will also be important to help establish robust processes and systems for the screening, monitoring, and surveillance of frailty at population-level in order to intervene and prevent the onset of functional decline (Rodríguez-Laso et al., 2018). Preventing and managing the challenge of an aging population requires the strengthening of compassion into our health systems. Compassion centers on the ability to understand the emotions of others combined with a desire to assist and promote their well-being (Perez-Bret et al., 2016; Sinclair et al., 2018). Although it is an important, albeit often overlooked element contributing to our culture of health, providing compassion in busy everyday practice let alone at the policy level is often a challenge in the face of competing for demands and compassion fatigue (Fernando and Consedine, 2017). Many factors contribute to this, but the capacity to deliver compassion in healthcare at the individual level can be enhanced through organizational support and education (Zamanzadeh et al., 2018). Understanding older people and their life experience are also crucial in fostering compassion. In particular, it is necessary to appreciate that an older persons' outlook and perspective on life can impact on their perceived health, quality of life (Zamanzadeh et al., 2018) and ultimate life expectancy (Department of the Premier Cabinet, 2013). These change over time such as a river or hourglass flow over the human lifespan (Antonovsky, 1979; Strough et al., 2016). As we age, many older people perceive the life-span hourglass as being half empty such that they focus more on limited time and less on future opportunities; this affects their ability to initiate preventative strategies to improve their health (Cockburn et al., 1999).

Health Equity Policy and Research Actions to Advance a Shared Culture of Health in EU

The right to health currently finds significant differences between the various social groups, as well as among territorial areas, both with regard to risk factors and to the real access to services and healthcare. The increasing levels of health inequalities in the EU and related growing economic discrepancies result in increased cost of individual well-being and social-health services and coagulate the main determinants of the gap in life expectancy among the different socio-economic groups. The last economic crisis exacerbated these gaps, especially for families, whose composition in Europe has progressively changed, evolving from the traditional family nucleus to forms of de-standardization of the family composition (Brückner and Mayer, 2005; Jokinen and Kuronen, 2011; Huinink and Kohli, 2014). These changes parallel the complex evolution in Europe of social contexts which influence family dynamics (Hobson and Olah, 2006; OECD, 2011). There are substantial differences among European regions in the social services for families, with a north-south gradient in social support and pronounced gender differences in social positions covered (Lewis, 2006; Saraceno, 2008; Olah, 2015), that translates in health inequalities. The recent economic crisis had implications for family stability and birth trends (Sardon, 1993; Philipov and Dorbritz, 2003; Frejka et al., 2008; Hiekel and Castro-Martin, 2014; Olah et al., 2014; Perelli-Harris et al., 2014), with an increase of extended family units in southern Europe. The increase in NCCD entails not only health service demands but also the need for the creation of a Culture of Health as a shared "social good." Individual and collective awareness of health as a common good implicates an active role of citizens, through forms of collective participation in choices and sharing between operators and users, in order to implement programs to promote healthy lifestyles, primary disease prevention, and NCD management. There is a need for a change in the design and management of social, welfare, and healthcare models to become more integrative and synergic across domains. This can be recomposed through the construction of formal and informal collaborative networks between welfare and health that is digitally supported, to make health and social planning accessible to new development models, such as "living labs." Living labs allow the scale-up of new and sustainable approaches to health in the context of health promotion and disease prevention, such as innovative adapted physical activity programs, cognitive training, and primary nutritional interventions.

Empowering citizens for active aging should hence be a priority in all policies. This is stated by WHO (WHO, 2002) specifically relating to actions to reduce risk factors associated with major diseases and increase factors that protect health throughout the life course: promote regular, moderate physical activity and prevent malnutrition ensuring food security and safety, while enhancing social cohesion, as people age. Evidence shows that individuals with higher education are more prone to a positive and durable lifestyle change than those with lower education, for whom achieving a positive change is more difficult (Nilsen et al., 2015). According to the Salutogenesis model, low individual or population education can translate into a significant health problem. Hence it is necessary to intervene in all the components of this model: the ability to understand what happens (cognitive), the ability to manage the situation (behavior) and the ability to find meaning in the situation (motivation) (Benz et al., 2014). It is necessary to give the individual(s) or populations the ability to use their own resources than the resources themselves in adopting a more active lifestyle. It is also necessary to educate people on healthy balanced and safe food intake, personalized upon individual needs and taste and cultural preferences (Di Furia et al., 2016; Vuolo et al., 2016; Di Somma et al., 2017).

The A3 Nutrition Group of the EIP on AHA developed an integrated view on a common nutritional approach to frailty focused on a step-wise approach to malnutrition. This approach links assessment to adequate interventions (primary/secondary/tertiary) and is aimed to implement innovative tools for effective social connectivity, prevention, detection, and treatment measures (Illario et al., 2016).

Several examples exist of such an approach, including the Mediterranean Diet, that is grounded on the sociocultural background of the emblematic communities (Moro, 2016) and

has shown an extraordinary impact on health, including social connectivity (Bonaccio et al., 2018).

European policies on health promotion would benefit from the Salutogenesis model to generate more effective outcomes: for example, promoting health literacy in all populations, and knowledge of the impact of the adoption of healthy lifestyles in all end users (schools, health professionals, urban planning, transportation, sports and recreation, research, etc.). This means increasing the ability to understand what happens in the events of life, as also stated in the first strategic objective—create an active society—building the awareness that it is never too late even when you are older to start being more active under the guidance of trained professionals (health professional, physiotherapist, exercise professional, nutritionist, dietitian, endocrinologist, chef) that collaborate to outline the appropriate intervention, such as the correct level of intensity for the desirable physical activity or food uptake. Specifically, for older adults, a greater concern on avoiding musculoskeletal lesions and falls and enhance coordination and balance should be present, associated with adequate intake of vitamin D to prevent osteoporosis, and of proteins to prevent sarcopenia. In some populations, walking and manual activities are an important component of a community exercise program (Tomás et al., 2018).

The increment in technologies for supporting the empowerment of all citizens, especially older adults, to manage their active lifestyles safely, should increase in all Europe. This will enable, support, or encourage strategies that are effective in preventing or managing NCDs and in maintaining functionality sustainably. When looking for the second component of SOC on the Salutogenesis theory—the ability to manage the situation (behavior), a vast work is a need of active lifestyles and the capability of use all the resources available (WHO, 2010b).

The third component—the ability to find meaning in the situation (motivation)—is often the key to the success of an intervention aiming to decrease inactivity levels or tackle malnutrition. For example, in programs aiming to reduce overweight and adhere to adequate food intake, it is for some participants more critical to work initially on motivation and only afterward focus on the exercise and dietary changes as their social connectivity increases. When translating WHO strategic objectives, the second strategic objective—Create active environments—could also contribute to this component. In fact it states that environment should motivate to be more safely active for all ages, specifically for older adults who frequently have other comorbidities impacting movement, and therefore the built environment should be planned for their safety and pleasure, contributing to healthier lifestyles sustainability (Sallis et al., 2016).

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

As our population is aging, and NCDs are increasing across the globe, we need to set priorities that are based on the Salutogenesis model, and will not only assist individuals with NCD to strife toward a healthier status and higher level of well-being, but also contribute to creating a culture of health that promotes well-being throughout the entire lifespan (Baum et al., 2018). The following key areas should be among the top priorities in maintaining a culture of health: leadership training for change in management models; cross-disciplinary teamwork; citizens engagement as co-founders of a culture of health; personalized approach toward different age groups (children, teens, young adults, adults, older adults); private-public alliances to promote a culture of health; sharing of knowledge, skills and tools available and accessible for a digitally empowered society; and experiential education of policymakers (Stenberg et al., 2017).

Establishing programs that support co-creation leaders is a key driver for creating synergies in domains suffering from polarization, inertia and transforming problems into opportunities for innovation through peer-to-peer interactions (Ackoff, 1989). Indeed, the stakeholders' attitude toward self-empowerment and co-creation of well-being is an important variable in establishing a "culture of health."

Utilizing the framework of the 13 domains identified by the Joint Action "CHRODIS" (Grant number #20132201); we will be able to promote change at the local level (JA-CHRODIS Project Consortium, 2015) to reduce the burden of chronic diseases (FAO, 2013). Research in this field should focus on large studies that allow translating information in policies for promoting health (Reis et al., 2016), as well as to identify predictors of disability and functional decline, and the factors that contribute to increasing adherence to physical activity, to healthy food intake and to an active lifestyle.

Another focus of research should be on interventions that actually produce results for the population they were designed for. The appropriate program for the appropriate intervention in the appropriate cultural setting is needed. The identification of good practices in physical activity promotion and dietary habits, among older adults and also in the youngest should be incremented as well as the analysis of social benefits and impact of those policies.

AUTHOR CONTRIBUTIONS

CT-S, VD, and MI conceived the presented idea, drafted the table of contents, and wrote all the manuscript. SS contributed to the Abstract, Background, and Creating Synergies Among all Stakeholders to Strengthen Wellbeing in the Workplace: the Contribution of Business/Companies and Health Care Facilities sections. PSc, CC, GG, and LCo contributed to Abstract, Background, and Defining the Culture of Health in the Framework of Societal Challenges sections. VZ contributed to Case Studies of Salutogenesis Model in NCD section. GL contributed to Multilevel and Multidomain Wellbeing Assessment and The Case for Older Adults sections. GI contributed to Co-development of Technological Innovations with End-Users section. CG contributed to Background section. DT, RR, and GT contributed to Background, Defining the Culture

of Health in the Framework of Societal Challenges, and Health Equity Policy and Research Actions to Advance a Shared Culture of Health in EU sections. MT, BF, and SM contributed to Health Equity Policy and Research Actions to Advance a Shared Culture of Health in EU section. JA contributed to Abstract, Background, and Defining the Culture of Health in the Framework of Societal Challenges sections. AC and LL-S contributed to Fostering Compassion in Health Care Systems section. A-MP and AH contributed to Creating Synergies Among all Stakeholders to Strengthen Wellbeing in the Workplace: the Contribution of Business/Companies and Health Care Facilities section. RO and WM contributed to Abstract, Background, Defining the Culture of Health in the Framework of Societal Challenges, and Health Equity Policy and Research Actions to Advance a Shared Culture of Health in EU sections and critical reading. LCa contributed to Abstract, Background, and The Relevance of Education and Training for all End Users: Professionals, Citizens, and Policymakers sections. HJ-W contributed to Abstract and Background sections. MT, PSp, and VV contributed to Health Equity Policy and Research Actions to Advance a Shared Culture of Health in EU and Conclusions and Recommendations for Future Research sections and critical reading.

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REFERENCES

Ackoff, R. L. (1989). From data to wisdom. *J. Appl. Syst. Anal*. 16, 3–9.

Acosta, J. D., Shih, R. A., Chen, E. K., Xenakis, L., Carbone, E. G., Burgette, L. F., et al. (2018). *Building Older Adults' Resilience by Bridging Public Health and Aging-in-Place Efforts: Toolkit*. Santa Monica, CA: RAND Corporation.

Alleyne, G., Stuckler, D., and Alwan, A. (2010). The hope and the promise of the UN Resolution on non-communicable diseases. *Global Health* 6:15. doi: 10.1186/1744-8603-6-15

Antonovsky, A. (1979). *Health, Stress and Coping*. San Francisco, CA; London: Jossey-Bass.

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promot. Int*. 11, 11–18. doi: 10.1093/heapro/11.1.11

Baum, F., Popay, J., Delany-Crowe, T., Freeman, T., Musolino, C., Alvarez-Dardet, C., et al. (2018). Punching above their weight: a network to understand broader determinants of increasing life expectancy. *Int. J. Equity Health* 17:117. doi: 10.1186/s12939-018-0832-y

Benz, C., Bull, T., Mittelmark, M., and Vaandrager, L. (2014). Culture in salutogenesis: the scholarship of Aaron Antonovsky. *Glob. Health Promot*. 21, 16–23. doi: 10.1177/1757975914528550

Bodker, K., Kensing, F., and Simonsen, J. (2004). *Participatory IT Design. Designing for Business and Workplace Realities*. Cambridge, MA: MIT Press.

Bonaccio, M., Di Castelnuovo, A., Costanzo, S., Gialluisi, A., Persichillo, M., Cerletti, C., et al. (2018). Mediterranean diet and mortality in the elderly: a prospective cohort study and a meta-analysis. *Br. J. Nutr*. 120, 841–854. doi: 10.1017/S0007114518002179

Bousquet, J., Bewick, M., Cano, A., Eklund, P., Fico, G., Goswami, N., et al. (2017). Building bridges for innovation in ageing: synergies between action groups of the EIP on AHA. *J. Nutr. Health Aging* 21, 92–104. doi: 10.1007/s12603-016-0803-1

Bousquet, J., Kuh, D., Bewick, M., Standberg, T., Farrell, J., Pengelly, R., et al. (2015). Operational definition of Active and Healthy Ageing (AHA): a conceptual framework. *J. Nutr. Health Aging* 19, 955–960. doi: 10.1007/s12603-015-0589-6

Bousquet, J., Michel, J. P., Strandberg, T., Crooks, G., Iakovidis, I., and Iglesia, M. (2014). The European innovation partnership on active and healthy ageing: the European geriatric medicine introduces the EIP on AHA column. *Eur. Geriatr. Med*. 5, 361–434. doi: 10.1016/j.eurger.2014.09.010

Brückner, H., and Mayer, K. U. (2005). The de-standardization of the life course: what it might mean? And whether it means anything, whether it actually took place? *Adv. Life Course Res.* 9, 27–54. doi: 10.1016/S1040-2608(04)09002-1

Buckinx, F., Rolland, Y., Reginster, J. Y., Ricour, C., Petermans, J., and Bruyère, O. (2015). Burden of frailty in the elderly population: perspectives for a public health challenge. *Arch. Public Health* 73:19. doi: 10.1186/s13690-015-0068-x

Burton, J. (2010). "Chapter 4: interrelationships of work, health and community," in *WHO Healthy Workplace Framework and Model: Background Document and Supporting Literature and Practices,* 25–40.

Cano, A., Dargent, G., Carriazo, A., López-Samaniego, L., Apostolo, J., Campos, E., et al. (2018). Tackling frailty and functional decline: background of the action group A3 of the European innovation partnership for active and healthy ageing. *Maturitas* 115, 69–73. doi: 10.1016/j.maturitas.2018.06.009

Casadio, M., Biasco, G., Abernethy, A., Bonazzi, V., Pannuti, R., and Pannuti, F. (2010). The national tumor association fou ndation (ANT): a 30 year old model of home palliative care. *BMC Palliat. Care* 9:12. doi: 10.1186/1472-684X-9-12

Cesari, M., Prince, M., Thiyagarajan, J. A., De Carvalho, I. A., Bernabei, R., Chan, P., et al. (2016). Frailty: an emerging public health priority. *J. Am. Med. Direct. Assoc*. 17, 188–192. doi: 10.1016/j.jamda.2015.12.016

Chandra, A., Miller, C. E., Acosta, J. D., Weilant, S., Trujillo, M., and Plough, A. (2016). Drivers of health as a shared value: mindset, expectations, sense of community, and civic engagement. *Health Aff.* 35, 1959–1963. doi: 10.1377/hlthaff.2016.0603

Cho, J., Lee, I., Park, S. H., Jin, Y., Kim, D., Kong, J. Y., et al. (2017). Socioeconomic status, frailty, and all-cause. Mortality in Korean older adults: a 3-year population-based prospective study. *Biomed. Res. Int*. 2017:1903589. doi: 10.1155/2017/1903589

Clegg, A., Young, J., Iliffe, S., Rikkert, M. O., and Rockwood, K. (2013). Frailty in elderly people. *Lancet* 381, 752–762. doi: 10.1016/S0140-6736(12)62167-9

Cockburn, I. M., Bailit, H. L., Berndt, E. R., and Finkelstein, S. N. (1999). Loss of work productivity due to illness and medical treatment. *J. Occup. Environ. Med*. 41, 948–95. doi: 10.1097/00043764-199911000-00005

Comunità di Sant'Egidio. (2010). *Viva gli Anziani! Un Servizio Innovativo Per i Nuovi Scenari Demografici e Urbani. [Long Live the Older Adults! An Innovative Service for New Demographic and Urban Scenarios] Maggioli Editore.*

CSDH (2008). *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health*. Final Report of the Commission on Social Determinants of Health. Geneva: World Health Organization.

Department of the Premier and Cabinet (2013). *The Longevity Revolution. Creating a Society for all Ages*. Government of South Australia. Available online at: http://www.flinders.edu.au/sabs/fcas-files/Publications/The%20Longevity%20Revolution.pdf

Di Furia, L., Rusciano, M. R., Leonardini, L., Rossi, P., Giammarchi, C., Vittori, E., et al. (2016). A nutritional approach to the prevention of cancer: from assessment to personalized intervention. *Transl. Med. UniSa*. 13, 33–41.

Di Somma, C., Scarano, E., Barrea, L., Zhukouskaya, V. V., Savastano, S., Mele, C., et al. (2017). Vitamin, D., and neurological diseases: an endocrine view. *Int. J. Mol. Sci*. 18:E2482. doi: 10.3390/ijms18112482

Diez Roux, A. V. (2001). Investigating neighborhood and area effects on health. *Am. J. Public Health* 91, 1783–1789. doi: 10.2105/AJPH.91.11.1783

Eurofound (2013). *Role of Governments and Social Partners in Keeping Older Workers in the Labour Market*. Dublin: Eurofound.

Eurofound (2017). *Sixth European Working Conditions Survey*. Overview Report. Publications Office of the European Union.

European Commission (2014). *European Strategy for Scaling-Up in Active and Healthy Ageing*. Brussels: European Commission.

European Union (2018). *Eurostat Regional Yearbook 2018*. Publications Office of the European Union.

FAO (2013). *Good Practices at FAO: Experience Capitalization for Continuous Learning*. Available online at: http://www.fao.org/docrep/017/ap784e/ap784e.pdf (Accessed October 19, 2018).

Fernando, A. T. III., and Consedine, N. S. (2017). Barriers to medical compassion as a function of experience and specialization: psychiatry, pediatrics, internal medicine, surgery, and general practice. *J. Pain Symp. Manag*. 53, 979–987. doi: 10.1016/j.jpainsymman.2016.12.324

Frejka, T., Sobotka, T., Hoem, J. M., and Toulemon, L. (2008). Childbearing trends and policies in Europe. *Demogr. Res. Spe. Collect.* 7, 1–1178. doi: 10.4054/DemRes.2008.19.1

García, L. F. (2013). European innovation partnership on active and healthy aging: moving from policy to action. *Gac. Sanit*. 27, 459–462. doi: 10.1016/j.gaceta.2012.09.005

García-Herrera, R., Díaz, J., Trigo, R. M., Luterbacher, J., and Fischer, E. M. (2010). A review of the European summer heat wave of 2003. *J. Crit. Rev. Environ. Sci. Technol*. 40, 167–306. doi: 10.1080/10643380802238137

Gee, P. M., Greenwood, D. A., Paterniti, D. A., Ward, D., and Miller, L. M. (2015). The eHealth enhanced chronic care model: a theory derivation approach. *J. Med. Internet Res*. 17:e86. doi: 10.2196/jmir.4067

Gilardi, F., Capanna, A., Ferraro, M., Scarcella, P., Marazzi, M. C., Palombi, L., et al. (2018). Frailty screening and assessment tools: a review of characteristics and use in Public Health. *Ann. Ig*. 30, 128–139. doi: 10.7416/ai.2018.2204

Goetzel, R. Z., Long, S. R., Ozminkowski, R. J., Hawkins, K., Wang, S., and Lynch, W. (2004). Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting U.S. employers. *J. Occup. Environ. Med*. 46, 398–412. doi: 10.1097/01.jom.0000121151.40413.bd

Goldblatt, P., Siegrist, J., Lundberg, O., Marinetti, C., Farrer, L., and Costongs, C. (2015). *Improving Health Equity Through Action Across the Life Course: Summary of Evidence and Recommendations From the DRIVERS Project*. Report produced as part of the 'DRIVERS for Health Equity' project. Available online at: http://health-gradient.eu/. Brussels: EuroHealthNet

Green, L., and Kreuter, M. (1999). *The Precede-Proceed Model. Health Promotion Planning: An Educational Approach*. 3rd Edn. Mountain View, CA: Mayfield Publishing Company, 32–43.

Grov, E. K., Dahl, A. A., Fossa, S. D., Wahl, A. K., and Moum, T. (2006). Global quality of life in primary caregivers of patients with cancer in palliative phase staying at home. *Support. Care Cancer* 14, 943–951. doi: 10.1007/s00520-006-0026-9

Halkoaho, A., Kangasniemi, M., Niinimäki, S., and Pietilä, A. M. (2014). Type 2 diabetes patients' perceptions about counselling elicited by interview study: is it time for a more health-oriented approach? *Eur. Diabetes Nurs*. 11, 13–18. doi: 10.1002/edn.240

Hiekel, N., and Castro-Martin, T. (2014). Grasping the diversity of cohabitation: fertility intentions among cohabiters across Europe. *J. Marriage Fam.* 76, 489–505. doi: 10.1111/jomf.12112

Hjort, P. F. (1993). *Forebyggende Og Helsefremmende Arbejde: Mal, Filosofi, Ansvar Og Opgaver [Preventive and Health Promotive Work: Goals, Philosophy, Responsibility and Tasks]*. Dansk Selskab for Social og Administrativ Medicin/Samfundsmedicinsk Forlag.

Hobson, B., and Olah, L. (2006). Birthstrikes? agency and capabilities in the reconciliation of employment and family. *Marriage Fam. Rev.* 39, 197–227. doi: 10.1300/J002v39n03_01

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., and Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: a meta-analytic review. *Perspect. Psychol. Sci*. 10, 227–237. doi: 10.1177/1745691614568352

Huber, M., Knottnerus, J. A., Green, L. W., van der Horst, H. E., and Jadad A. (2011). How should we define health? *BMJ*. 343:d4163. doi: 10.1136/bmj.d4163

Huinink, J., and Kohli, M. (2014). A life-course approach to fertility. *Demogr. Res.* 30, 1293–1326. doi: 10.4054/DemRes.2014.30.45

Illario, M., De Luca, V., Tramontano, G., Menditto, E., Iaccarino, G., Bertorello, L., et al. (2017). Aie Italian reference sites of the European innovation partnership on active and healthy ageing: progetto mattone internazionale as an enabling factor. *Ann. Ist Super Sanita*. 53, 60–69. doi: 10.4415/ANN_17_01_12

Illario, M., Maione, A. S., Rusciano, M. R., Goossens, E., Rauter, A., Braz, N., et al. (2016). NutriLive: an integrated nutritional approach as a sustainable tool to prevent malnutrition in older people and promote active and healthy ageing—the EIP-AHA Nutrition Action Group. *Adv Public Health* 2016:5678782. doi: 10.1155/2016/5678782

ISTAT (2018). *Rapporto Annuale 2018* [Annual Report 2018].

JA-CHRODIS Project Consortium (2015). *Building on JA-CHRODIS: What Can We do to Plan and Implement Practices to Reduce the Burden of Chronic Diseases*. Available online at: http://chrodis.eu/wp-content/uploads/2015/06/ja-chrodis_12steps_final.pdf (Accessed October 19, 2018).

Jokinen, K., and Kuronen, M. (2011). "Chapter 1: Research on families and family policies in europe: major trends," in *Wellbeing of Families in Future Europe. Challenges for Research and Policy. FamilyPlatform - Families in Europe,* Vol. 1, eds U. Uhlendorff, M. Rupp, and M. Euteneuer. 13–118. Available online at: https://eldorado.tu-dortmund.de/bitstream/2003/28914/1/WellbeingOfFamiliesInEurope.pdf (Accessed Feb 8, 2019).

Kilpatrick, M., Blizzard, L., Sanderson, K., Teale, B., Jose, K., and Venn, A. (2017). Barriers and facilitators to participation in workplace health promotion (WHP) activities: results from a cross-sectional survey of public-sector employees in Tasmania, Australia. *Health Promot. J. Aust*. 28, 225–232. doi: 10.1071/HE16052

Krainz, K. (2015). Enhancing wellbeing of employees through Corporate Social Responsibility context. *Megatrend Rev*. 12, 137–154. doi: 10.5937/MegRev1502137D

Krieger, N. (2001). Historical roots of social epidemiology: socioeconomic gradients in health and contextual analysis. *Int. J. Epidemiol*. 30, 899–900. doi: 10.1093/ije/30.4.899

Kujala, S. (2003). User involvement: a review of the benefits and challenges. *Behav. Inform. Technol*. 22, 1–16. doi: 10.1080/01449290301782

Lagiewka, K. (2012). European innovation partnership on active and healthy ageing: triggers of setting the headline target of 2 additional healthy life years at birth at EU average by 2020. *Arch. Public Health* 70:23. doi: 10.1186/0778-7367-70-23

Lavizzo-Mourey, R. (2017). How to build a culture of health. *QJM* 110, 59–60, doi: 10.1093/qjmed/hcw192

Lewis, J. (2006). Work/family reconciliation, equal opportunities and social policies: the interpretation of policy trajectories at the EU level and the meaning of gender equality. *J. Eur. Public Policy* 13, 420–437. doi: 10.1080/13501760600560490

Lindström, B., and Eriksson, M. (2005). Salutogenesis. *J. Epidemiol. Commun. Health* 59, 440–442. doi: 10.1136/jech.2005.034777

Lins, L., and Carvalho, F. M. (2016). SF-36 total score as a single measure of health-related quality of life: scoping review. *SAGE Open Med*. 4:2050312116671725. doi: 10.1177/2050312116671725

Liotta, G., Canhao, H., Cenko, F., Cutini, R., Vellone, E., Illario, M., et al. (2018a). Active ageing in Europe: adding healthy life to years. *Front. Med.* 5:123. doi: 10.3389/fmed.2018.00123

Liotta, G., Inzerilli, M. C., Palombi, L., Madaro, O., Orlando, S., Scarcella, P., et al. (2018b). Social interventions to prevent heat-related mortality in older adult in Rome, Italy: a quasi-experimental study. *Int. J. Environ. Res. Public Health* 15:E715. doi: 10.3390/ijerph15040715

Liotta, G., Orfila, F., Vollenbroek-Hutten, M., Roller-Winsberger, R., Illario, M., Musian, D., et al. (2016a). The European innovation partnership on active and healthy ageing synergies: protocol for a prospective observational study to measure the impact of a community-based program on prevention and

mitigation of frailty (ICP- PMF) in community-dwelling older adults. *Transl. Med. UniSa.* 15, 53–66.

Liotta, G., Palombi, L., Gilardi, F., Scarcella, P., and Marazzi, M. C. (2016b). A new model of prevention and care to improve the quality of life of European older citizens. *Health Policy Non-Commun. Dis.* 3, 47–53.

Litchfield, P., Cooper, C., Hancock, C., and Watt, P. (2015). Work and wellbeing in the 21st century. *Int. J. Environ. Res. Public Health* 13:1065. doi: 10.3390/ijerph13111065

Lock, K. (2000) Health impact assessment. *BMJ* 320:1395–1398. doi: 10.1136/bmj.320.7246.1395

Malva, J. O., Amado, A., Rodrigues, A., Mota-Pinto, A., Cardoso, A. F., Teixeira, A. M., et al. (2018). The Quadruple Helix-based innovation model of reference sites for active and healthy ageing in Europe: the ageing@coimbra case study. *Front. Med.* 5:132. doi: 10.3389/fmed.2018.00132

Malva, J. O., and Bousquet, J. (2016). Operational definition of active and healthy ageing: roadmap from concept to change of management. *Maturitas* 84, 3–4. doi: 10.1016/j.maturitas.2015.11.004

Maoz, B., Antonovsky, A., Apter, A., Datan, N., Hochberg, J., and Salomon, Y. (1978). The effect of outside work on menopausal women. *Maturitas* 1, 43–53. doi: 10.1016/0378-5122(78)90009-9

Maoz, B., Antonovsky, A., Apter, A., Wijsenbeek, H., and Datan, N. (1977). The perception of menopause in five ethnic groups in Israel. *Acta Obstet. Gynecol. Scand.* 65, 69–76. doi: 10.3109/00016347709156344

McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *N. Engl. J. Med.* 338, 171–179. doi: 10.1056/NEJM199801153380307

McMichael, A. J. (2002). Population, environment, disease, and survival: past patterns, uncertain futures. *Lancet* 359, 1145–1148. doi: 10.1016/S0140-6736(02)08164-3

Michel, J. P., Dreux, C., and Vacheron, A. (2016). Healthy ageing: evidence that improvement is possible at every age. *Eur. Geriatr. Med.* 7, 298–305. doi: 10.1016/j.eurger.2016.04.014

Miettola, J., and Vilanen, A. M. (2014). A salutogenic approach to prevention of metabolic syndrome: a mixed methods population study. *Scand. J. Prim. Health Care* 4, 217–225. doi: 10.3109/02813432.2014.982372

Moro, E. (2016). The mediterranean diet from ancel keys to the UNESCO cultural heritage. A pattern of sustainable development between myth and reality. *Procedia Soc. Behav. Sci.* 223, 655–661. doi: 10.1016/j.sbspro.2016.05.380

Niitamo, V. P., Kulkki, S., Eriksson, M., and Hribernik, K. A. (2006). "State-of-the-art and good practice in the field of living labs," in *IEEE International Technology Management Conference (ICE)* (Milan).

Nilsen, V., Bakke, P. S., Rohde, G., and Gallefoss, F. (2015). Is sense of coherence a predictor of lifestyle changes in subjects at risk for type 2 diabetes? *Public Health* 129, 155–161. doi: 10.1016/j.puhe.2014.12.014

Nilsson, K., Sangster, M., and Konijnendijk, C. C. (2011). "Forest, tress and human health and well-being: introduction," in *Forest, Trees and Human Health,* eds K. Nilsson, M. Sangster, C. Gallis, T. Hartig, S. de Vries, K. Seeland, et al. (Frederiksberg: Springer Science Business Media), 1e19.

O'Caoimh, R., Galluzzo, L., Rodriguez-Laso, A., Van der Heyden, J., Ranhoff, A. H., Carcaillon-Bentata, L., et al. (2018). Transitions and trajectories in frailty states over time: a systematic review of the European Joint Action ADVANTAGE. *Ann. Ist Super Sanita.* 54, 246–252. doi: 10.4415/ANN_18_03_12

O'Caoimh, R., Sweeney, C., Hynes, H., McGlade, C., Cornally, N., Daly, E., et al. (2015). COLLaboration on AGEing-COLLAGE: Ireland's three star reference site for the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA). *Eur. Geriatr. Med.* 5, 505–511. doi: 10.1016/j.eurger.2015.04.009

OECD (2011). *Doing Better for Families*. Paris: OECD Publishing.

Olah, L. (2015). *Changing Families in the European Union: Trends and Policy Implications. Family and Societies*. Working Paper Series, N. 44. Available online at: http://www.familiesandsocieties.eu/wp-content/uploads/2015/09/WP44Olah2015.pdf

Olah, L. S., Richter, R., and Kotowska, I. (2014). *State-of-the-Art Report: The New Roles of Men and Women and Implications for Families and Societies. Families and Societies* Working Paper 11. Available online at: http://www.familiesandsocieties.eu/wpcontent/uploads/2014/12/WP11OlahEtAl2014.pdf

Olivius, G., Ostergren, P. O., Hanson, B. S., and Lyttkens, C. H. (2004). Parental economic stress: evidence of an overlooked public health risk among Swedish families. *Eur. J. Public Health* 14, 354–360. doi: 10.1093/eurpub/14.4.354

Omachonu, V. K., and Einspruch, N. G. (2010). Innovation in healthcare delivery systems: a conceptual framework. *Innovat. J.* 15, 1–20.

Optum (2017). *Employee Wellbeing: International Differences and Commonalities*. Available online at: https://cdn-aem.optum.com/content/dam/optum3/optum/en/resources/white-papers/employee-wellbeing_international%20differences%20and%20commonalities-wp.pdf (Accessed September 26, 2018).

Pelikan, J. M. (2017). "The application of salutogenesis in healthcare settings," in *The Handbook of Salutogenesis,* eds M. B. Mittelmark, S. Sagy, M. Eriksson, G. F. Bauer, J. M. Pelikan, B. Lindstrom, and G. A. Espnes (Cham: Springer), 261–266.

Perelli-Harris, B., Mynarska, M., Berrington, A., Berghammer, C., Evans, A., Isupova, O., et al. (2014). Towards a new understanding of cohabitation: insights from focus group research across Europe and Australia. *Demogr. Res.* 31, 1043–1078. doi: 10.4054/DemRes.2014.31.34

Perez-Bret, E., Altisent, R., and Rocafort, J. (2016). Definition of compassion in healthcare: a systematic literature review. *Int. J. Palliat. Nurs.* 22, 599–606. doi: 10.12968/ijpn.2016.22.12.599

Philipov, D., and Dorbritz, J. (2003). *Demographic Consequences of Economic Transition in Countries of Central and Eastern Europe, Population Studies n°39, Council of Europe Publishing.* Warsaw.

Plough, A. L. (2015). Building a culture of health: a critical role for public health services and systems research. *Am. J. Public Health* 105, S150–S152. doi: 10.2105/AJPH.2014.302410

Povlsen, L., and Borup, I. (2015). Health promotion: a developing focus area over the years. *Scand. J. Public Health* 43(Suppl. 16), 46–50. doi: 10.1177/1403494814568595

Rechel, B., Grundy, E., Robine, J. M., Cylus, J., Mackenbach, J. P., Knai, C., et al. (2013). Ageing in the European Union. *Lancet* 381, 1312–1322. doi: 10.1016/S0140-6736(12)62087-X

Reis, R. S., Salvo, D., Ogilvie, D., Lambert, E. V., Goenka, S., and Brownson, R. C. (2016). Physical activity 2016: progress and challenges. scaling up physical activity interventions worldwide: stepping up to larger and smarter approaches to get people moving. *Lancet* 388, 1337–1348. doi: 10.1016/S0140-6736(16)30728-0

Riekert, K. A., Ockene, J. K., and Pbert, L. (2014). *The Handbook of Health Behavior Change*, 4th Edn. New York, NY: Springer.

Rijken, M., Struckmann, V., van der Heide, I., Hujala, A., Barbabella, F., van Ginneken, E., et al. (2017). *How to Improve Care for People With Multimorbidity in Europe?* Copenhagen: European Observatory on Health Systems and Policies.

Robison, J., Fortinsky, R., Kleppinger, A., Shugrue, N., and Porter, M. (2009). A broader view of family caregiving: effects of caregiving and caregiver conditions on depressive symptoms, health, work, and social isolation. *J. Gerontol. Ser B Psychol. Sci. Soc. Sci.* 64, 788–798. doi: 10.1093/geronb/gbp015

Rodríguez-Laso, Á., O'Caoimh, R., Galluzzo, L., Carcaillon-Bentata, L., Beltzer, N., and Macijauskiene, J. (2018). Population screening, monitoring and surveillance for frailty: three systematic reviews and a grey literature review. *Ann. Ist Super Sanita.* 54, 253–262. doi: 10.4415/ANN_18_03_13

Rodríguez-Mañas, L., Féart, C., Mann, G., Viña, J., Chatterji, S., Chodzko-Zajko, W., et al. (2013). FOD-CC group (Appendix 1). Searching for an operational definition of frailty: a Delphi method based consensus statement: the frailty operative definition-consensus conference project. *J. Gerontol. A Biol. Sci. Med. Sci.* 68, 62–67. doi: 10.1093/gerona/gls119

Sallis, J., Bull, F., Guthold, R., Heath, G. W., Inoue, S., Kelly, P., et al. (2016). Physical activity 2016: progress and challenges. progress in physical activity over the olympic quadrennium. *Lancet* 388, 1325–1336. doi: 10.1016/S0140-6736(16)30581-5

Saraceno, C. (2008). Families, *Ageing and Social Policy: Intergenerational Solidarity in European Welfare States*. Cheltenham; Northampton, MA: Edward Elgar Publishing, 336.

Sardon, J. P. (1993). Women's first marriage rates in Europe: elements for a typology. *Popul. English Select.* 5, 119–152.

Sinclair, S., Hack, T. F., Raffin-Bouchal, S., McClement, S., Stajduhar, K., Singh, P., et al. (2018). What are healthcare providers' understandings and experiences of compassion? The healthcare compassion model: a grounded theory study of healthcare providers in Canada. *BMJ Open* 8:e019701. doi: 10.1136/bmjopen-2017-019701

Sluiter, J. K., Frings-Dresen, M. H., Meijman, T. F., and van der Beek, A. J. (2000). Reactivity and recovery from different types of work measured by catecholamines and cortisol: a systematic literature overview. *Occup. Environ. Med*. 57, 298–315. doi: 10.1136/oem.57.5.298

Stenberg, K., Hanssen, O., Edejer, T. T., Bertram, M., Brindley, C., Meshreky, A., et al. (2017). Financing transformative health systems towards achievement of the health sustainable development goals: a model for projected resource needs in 67 low-income and middle-income countries. *Lancet Glob. Health* 5, e875–e887. doi: 10.1016/S2214-109X(17)30263-2

Strough, J., Bruine de Bruin, W., Parker, A. M., Lemaster, P., Pichayayothin, N., and Delaney, R. (2016). Hour glass half full or half empty? Future time perspective and preoccupation with negative events across the life span. *Psychol. Aging* 31:558–573. doi: 10.1037/pag0000097

Super, S., Wagemakers, M. A. E., Picavet, H. S. J., Verkooijen, K. T., and Koelen, M. A. (2015). Strengthening sense of coherence: opportunities for theory building in health promotion. *Health Promot. Int.* 31, 869–878. doi: 10.1093/heapro/dav071

Tawakol, A., Ishai, A., Takx, R. A. P., Figueroa, A. L., Ali, A., Kaiser, Y., et al. (2017). Relation between resting amygdalar activity and cardiovascular events: a longitudinal and cohort study. *Lancet* 389, 834–845. doi: 10.1016/S0140-6736(16)31714-7

Tomás, M. T., Galán-Mercant, A., Carnero, E. A., and Fernandes, B. (2018). Functional capacity and levels of physical activity in aging: a 3-year follow-up. *Front. Med*. 4:244. doi: 10.3389/fmed.2017.00244

Trujillo, M. D., and Plow, A. (2016). Building a culture of health: a new framework and measures for health and health care in America. *Soc. Sci. Med*. 165, 206–213. doi: 10.1016/j.socscimed.2016.06.043

Ulrich, S., Holle, R., Wacker, M., Stark, R., Icks, A., Thorand, B., et al. (2016). Cost burden of type 2 diabetes in Germany: results from the population-based KORA studies. *BMJ Open*. 6:e012527. doi: 10.1136/bmjopen-2016-012527

van Velsen, L., Illario, M., Jansen-Kosterink, S., Crola, C., Di Somma, C., Colao, A., et al. (2015). A community-based, technology-supported health service for detecting and preventing frailty among older adults: a participatory design development process. *J. Aging Res*. 2015:216084. doi: 10.1155/2015/216084

Visco, V., Finelli, R., Pascale, A. V., Mazzeo, P., Ragosa, N., Trimarco, V., et al. (2018). Difficult-to-control hypertension: identification of clinical predictors and use of ICT-based integrated care to facilitate blood pressure control. *J. Hum. Hypertens*. 32, 467–476. doi: 10.1038/s41371-018-0063-0

Vollenbroek-Hutten, M., Pais, S., Ponce, S., Dekker-van Weering, M., Jansen-Kosterink, S., Schena, F., et al. (2015). Rest Rust ! Physical active for active and healthy ageing. *Transl. Med. UniSa.* 13, 19–28.

Voseckova, A., Truhlarova, Z., Levicka, J., Klimova, B., and Kuca, K. (2017). Application of salutogenic concept in social work with diabetic patients. *Soc. Work Health Care* 4, 244–259. doi: 10.1080/00981389.2016.1265635

Vuolo, L., Barrea, L., Savanelli, M. C., Savastano, S., Rubino, M., Scarano, E., et al. (2016). Nutrition and osteoporosis: preliminary data of campania region of European PERsonalised ICT supported service for independent living and active ageing. *Transl. Med. UniSa.* 13, 13–18.

Whitmore, M., Stewart, K., Pollard, J., van Belle, J., Yang, M., and Van Stolk, C. (2018). *Promising Practices for Health and Wellbeing at Work: A Review of the Evidence Landscape*. Public Health England.

WHO (1946). *Constitution of the World Health Organization*. Available online at: http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf?ua=1 (Accessed November 27, 2018).

WHO (1986). *First International Conference on Health Promotion*. Ottawa, ON.

WHO (1998). *The World Health Report 1998 - Life in the 21st Century: A Vision for All.* Available online at: http://www.who.int/whr/1998/en/whr98_en.pdf (Accessed November 27, 2018).

WHO (2002). *Active Ageing A Policy Framework. A Contribution of the World Health Organization to the Second United Nations World Assembly on Ageing*. Madrid. WHO/NMH/NPH/02.8

WHO (2010a). "A conceptual framework for action on the social determinants of health. foreword," in *Discussion Paper Series on Social Determinants of Health 2*. Geneva: World Health Organization.

WHO (2010b). *Global Recommendations on Physical Activity for Health*. Geneva.

Windhaber, T., Koula, M. L., Ntzani, E., Velivasi, A., Rizos, E., Doumas, M. T., et al. (2018). ADVANTAGE JA WP8 group. Educational strategies to train health care professionals across the education continuum on the process of frailty prevention and frailty management: a systematic review. *Aging Clin. Exp. Res*. 30, 1409–1415. doi: 10.1007/s40520-018-0918-9

Winger, J. G., Adams, R. N., and Mosher, C. E. (2016). Relations of meaning in life and sense of coherence to distress in cancer patients: a meta-analysis. *Psychooncology* 25, 2–10.

Wong, M. C., Turner, P., MacIntyre, K., and Yee, K. C. (2017). Pokemon-Go: why augmented reality games offer insights for enhancing public health interventions on obesity-related diseases. *Stud Health Technol. Inform.* 241, 128–133. doi: 10.3233/978-1-61499-794-8-128

World Health Organization (2018). *Health Impact Assessment (HIA) – Determinants of Health*. Available online at: http://www.who.int/hia/evidence/doh/en/ (Accessed January 08, 2019).

World Health Organization Regional Office for Europe (2005). *Mental Health: Facing the Challenges, Building Solutions*. Report from the WHO European Ministerial Conference 2005. Copenhagen.

Yaldiz, L. M., Fraccaroli, F., and Truxillo, D. M. (2017). *Aging Workforce Issues from a Multilevel Approach, Oxford Research Encyclopedia of Psychology.* Portland, OR.

Zacher, H., Kooij, D., and Beier, M. (2018). Active aging at work: contributing factors and implications for organizations. *Organ. Dynamics* 47, 37–45. doi: 10.1016/j.orgdyn.2017.08.001

Zamanzadeh, V., Valizadeh, L., Rahmani, A., van der Cingel, M., and Ghafourifard, M. (2018). Factors facilitating nurses to deliver compassionate care: a qualitative study. *Scand. J. Caring Sci*. 32, 92–97. doi: 10.1111/scs.12434

Zavagli, V., Miglietta, E., Varani, S., Pannuti, R., Brighetti, G., and Pannuti, F. (2016). Associations between caregiving worries and psychophysical well-being. An investigation on home-cared cancer patients family caregivers. *Support. Care Cancer* 24, 857–863. doi: 10.1007/s00520-015-2854-y

Zavagli, V., Varani, S., Samolsky-Dekel, A. R., Brighetti, G., and Pannuti, F. (2012). Worry as a risk factor for mental and somatic diseases. A research on home-cared cancer patients family caregivers. *Giornale Italiano di Med. Lavoro ed Ergonomia, Suppl. B Psicol.* 34, B17–B22.

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Creation Process of the Digital Platform to Foster Healthy and Active Aging: *enbuenaedad*

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Andalusia is a region in the south of Spain with 8,4 million inhabitants of which 1,3 million are over 65 years old. Andalusia has been recognized as Reference Site by the European Commission within the European Innovation Partnership on Active and Healthy Aging. The Regional Ministry of Health of Andalusia has put in place strategies to promote healthy and active aging. One of these strategies is *enbuenaedad*, a digital platform which main aim is to foster active and healthy aging. The target audience is people over 55 years old, caregivers of older adults, as well as health and other key professionals who work with this population. Content sections are inspired in the three pillars of the World Health Organization (WHO) policy framework for active and healthy aging: health, participation, and security, but introducing an additional one which is lifelong learning. One of the strengths of this platform is the creation process. Using a co-thinking design, all target groups get voice under the umbrella of empathy and are empowered by providing support, training, knowledge, and best practices. For its development, dissemination, maintenance, and improvement, the project advocates the unavoidable participation of key stakeholders representing all sectors involved: The Senior Council of Andalusia; Primary Health Care professionals; local authorities; *Guadalinfo* agents; Permanent Adult Education; and Active Participation Centers. Quantitative and qualitative data obtained within the process support this project. Since its launching, 10,779 users have registered to the platform with more than 157,000 visits. Focusing on WHO four pillars on active and healthy aging *Enbuenaedad* is based on, preliminary results show effectiveness regarding participation and social interaction. Furthermore, achieving high participation coverage is a necessary but not sufficient input to the provision of adequate approach to older people. More comprehensive evaluation of the four pillars must be taken to ensure a holistic approach. A challenge is a cooperation between three traditionally independent sectors, cooperative work between health, social services, and education is crucial for the future sustainability of this intervention.

Keywords: public health, active and healthy aging, co-thinking, ICT, health promotion

INTRODUCTION

Andalusia is a region in the south of Spain with 8.4 million inhabitants. With 1.3 million people over 65 years old. Spain's aging rate is one of the highest among advanced economies and continues to increase steadily. By 2040, Spain will have the longest life expectancy in the world, according to global statistics (1).

This longevity revolution demands effective political action. It is essential to research and innovate to develop public health policies that empower older people (2–4). In the last decade, Andalusia has put in its agenda many initiatives to promote active and healthy aging. The European Innovation Partnership for Innovation on Active and Healthy Aging (EIPonAHA) of the European Commission (5) has awarded Andalusia as reference site on active and healthy aging. All reference sites follow the Quadruple Helix-Based Model for Active Aging. This model involves government authorities, civil society, academia, and business for the development of policies on active and healthy aging (6).

BACKGROUND AND RATIONALE

Longevity implications on the lifespan of the heterogeneity population of Andalusia are the starting point of this project (7).

Based on the literature review, the community needs and previous theoretical frameworks, we have developed a conceptual framework. It maps out the potential role of information and communications technologies (ICTs) as resources to empower older people so that they can manage their health condition and well-being (8–10), as well as to facilitate healthy decision-making and connect older people with healthcare networks (11). Usefulness of ICTs depends, to a large extent, on its capacity to adapt to the functional, social, and behavioral features of the users, as well as to their needs and preferences (8–11). Older people have the lowest level of ICT adoption (12). The success of e-inclusion in this population group seems to rely on both the digital literacy policies and the development of suitable devices and software (13).

The methodology used for the design, implementation, and evaluation of this study is based on the Quadruple Helix-Based Innovation Model for Active Aging, and on a method that enables effective participation of all agents involved in the process (14).

ESSENTIAL ELEMENTS OF THE INTERVENTION

This section identifies the essential elements of the intervention. These are not mutually exclusive categories; indeed, more effective intervention is likely to result when a holistic approach is addressed across all these dimensions.

Identifying the Target Population

A survey on ICT usage was carried out by the research team in collaboration with the University of Seville. In public health evaluations, the units of analyses are usually population groups, rather than individuals. In this project units are two groups: one group of people between 55 to 64 years old; and another one aged between 65 and 74. Main results were that 57% of people between 55 to 64 years old use the Internet on a weekly basis, while there was a significant reduction in the prevalence of the second group. **Figure 1** shows the population segmentation of internet users. These findings contributed to people between 55 to 64 years be included as the target population, and to ensure a strategy oriented to reduce the disparities observed by income or habitat.

Older Adults-Centered Approach

In-depth interviews, focal groups, and community forums provided key elements to take into consideration their vision to the development of digital solutions (15, 16). Heterogeneity in ICT adoption was a fact, and so was their interests on the opportunities they demanded and prioritized regarding healthy and active aging. A permanent testing strategy was established by the National Confederation for Active Older Adults and the En Activo Association to ensure that developed prototypes met the expectations and preferences of older adults.

Effective Participation of the Stakeholders

Figure 2 lists the different stakeholders -aligned with the four Quadruple Helix-Based Innovation Model on Active Aging.

Cooperative Design

The first year of the project was devoted to the creation of the website and the development of the first digital content. The method used was the collaborative design known as design thinking (17). Literature review and synthesis techniques, qualitative research techniques for data collection and analysis and consensus group techniques were used, both for the design and the testing of the products (15). Contents and format of the web platform and the digital solutions were determined upon the expectations expressed by older people involved in the design process (16). The collaborative constructions of these products contributed to the rapid acceptance of the platform by the target population. **Figure 3** shows "the citizen participation ladder," a step-by-step approach to the decision-making process.

Combating Inequality

Gender, age, ethnicity, socio-economic status, functional capacity, and habitat are, among others, factors that can be significant in how ICTs are accessed, owned, or used (18). The intervention developed here presents specific strategies to address these factors.

METHODS

Intervention Design

Action research approach using qualitative and quantitative research techniques (14, 15).

Target Population

Women and men, aged 55 and over, caregivers, association representatives, healthcare, education, and social care professionals, authorities from public institutions and administrations, private companies, entities from the economic

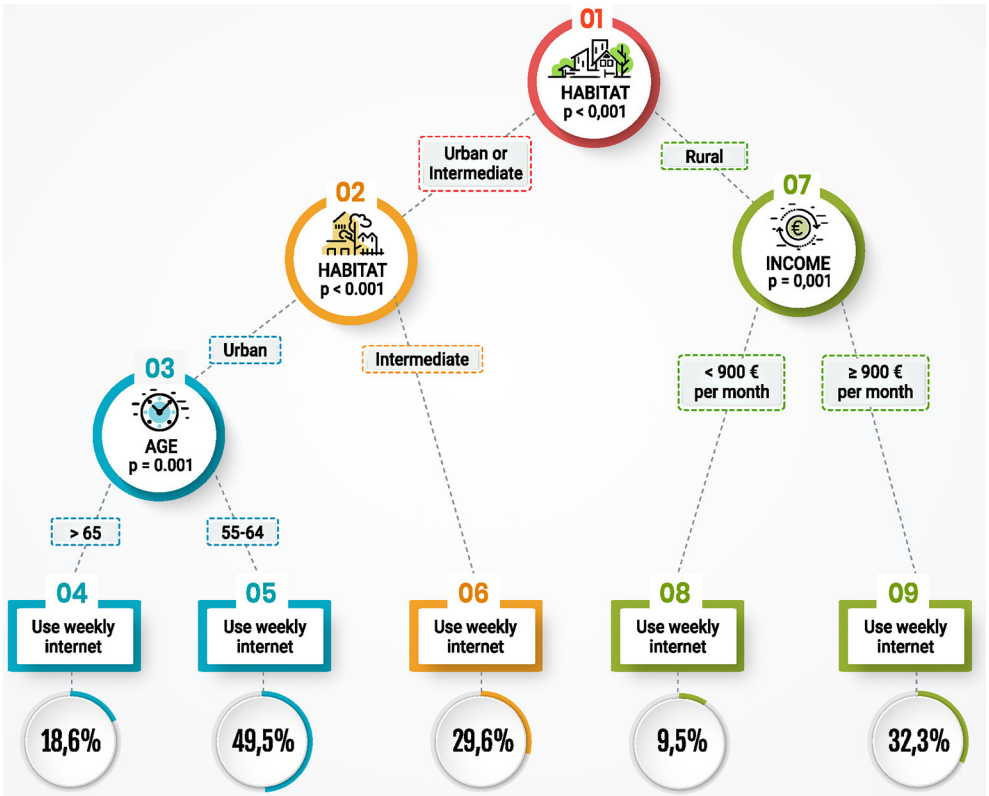

FIGURE 1 | Older people' segments according to weekly Internet use.

sector and other stakeholders involved in the promotion of active and healthy aging in Andalusia.

Methodology

The design thinking method was used as an essential tool to simplify and humanize the process of designing the digital solutions that are the object of the project and achieve their adoption by the target population (16).

DESCRIPTION OF THE CASE

Step 1: Develop the digital platform.

The functional architecture of the platform was designed by the target population themselves. In this case, we use community and professional forums to design content and formats. Needs and expectations became technical requirements. A card-sorting technique was used to determine the functional architecture of the portal. A prototype was developed and tested with the user population. Contents are organized in the four pillars of active aging: health, security, participation, and lifelong learning. Each section incorporates audio-visual content produced under a collaborative design framework. All platform users can share resources, experiences, activities, etc. The name "Enbuenaedad" which translated into English would be "in a good age," is also the result of a consensual agreement. The platform incorporates an instant messaging service. There is a specific space for health professionals. Easy-to-follow tutorials are available to facilitate navigation and interaction with the platform. Also, there are links to connect to social networks. More than 157,000 visits during the first 6 months.

Step 2: Develop the instant messaging service.

Personalized messaging service for the promotion of healthy aging. These messages, designed by health professionals and tested by older people, aim to encourage the acquisition of healthy habits. The system incorporates tools to assess the effectiveness of the messages and their contribution to autonomy in decision-making. By now 8,089 older adults (4,003 female and 4,086 male) are registered. More than 77,000 thousand messages about healthy and active aging have been sent.

Step 3: Determine the dissemination plan.

In 2017, the corporate image of the project was developed, a slogan was designed, and the key ideas for all communication actions were determined. In 2018, 20 forums were undertaken; 5 scientific publications were produced; 10 communications were presented to scientific conferences; a Facebook page was launched (with around 20,000 thousand interactions during the first semester). This is an ongoing process over time and requires sustained efforts.

The success of the dissemination of the platform will be maximized if older people is reached at a variety of locations (**Figure 4**).

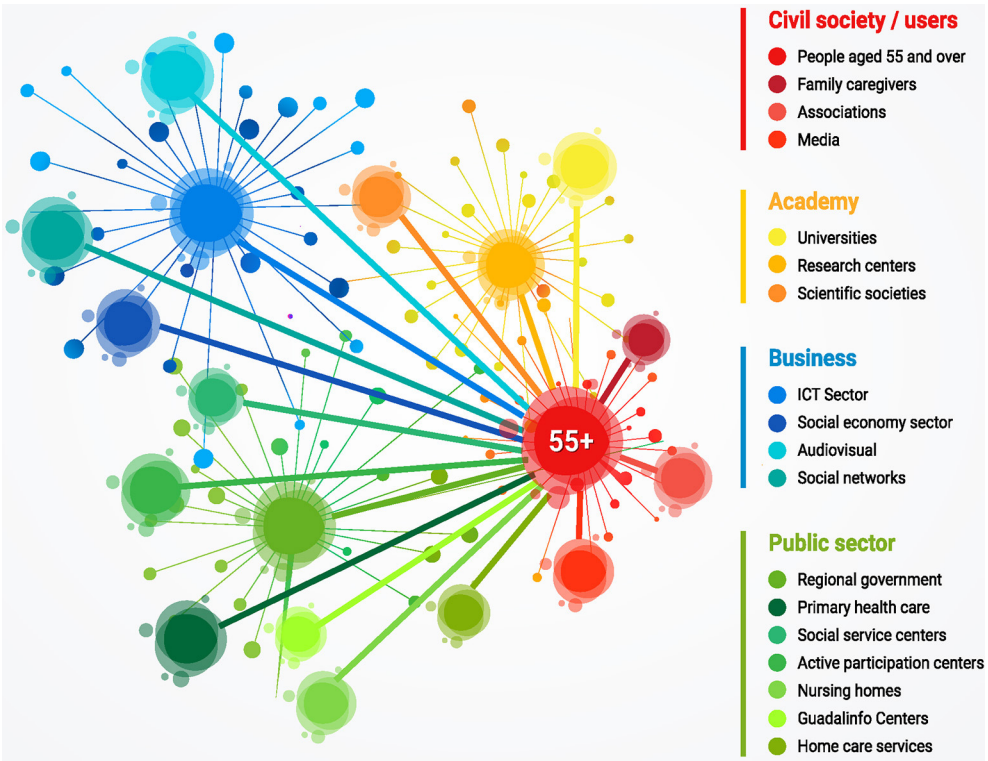

FIGURE 2 | Stakeholders involved in the promotion of active and healthy aging.

Primary Care Centers

The program Health Examination for People over 65 years was updated in 2017. It was initially implemented in Primary Care in 2006. 839,019 patients were registered by 2015: 61% autonomous, 24% frail, and 18% dependent. This update aimed to include promotion and prevention interventions related to active and healthy aging; the early detection of frailty and risk of falls; develop interventions aiming at the recovery of functional capacities; and the optimization of residual capacities of dependent people. To implement the new programme in the 1,517 primary care centers of the public health system of Andalusia a communication and training strategy was designed. Six thousand Three Hundred and Seventy-Nine doctors and 6,146 nurses are responsible for the healthcare of 1.3 million adults over 65 in Andalusia. The design thinking methodology was used to develop the digital contents. Audio-visual production companies and primary care medical and nursing professionals worked on the creation of the program. Three training itineraries were designed and 10 online continuing education activities. All these contents are currently at the pilot testing phase. Once this phase is over, the next step would be conducting massive online open courses (MOOC) in an attempt to reach the entire group of primary care professionals. 18,414 men and 24,072 women over 65 enrolled during the first 4 months of the program. The program is included as part of the content of the platform *Enbuenaedad*.

Local Health Action Networks

The strategy for identification and mapping the resources and assets for health has been led by the Andalusia Local Network Strategy for Action in Health (RELAS). This network covers 20.4% of the town councils, and 43.2% of the Andalusian population, through conventions signed between the Regional Ministry of Health of Andalusia and 155 municipalities from the 8 Andalusian provinces. Using the design thinking techniques, the aim is to work with older adults, RELAS health promoters, monitors, representatives from the voluntary sector, technical staff from the town councils responsible for leisure, diet, and physical activity programs, etc. (19).

Rural Areas

The study of population segmentation according to the frequency of the use of the Internet, highlighted the existing digital division, more acute in older adults with less favorable socio-economic conditions, living in rural environments. To get this population involved in the design and the use of solutions to promote active and healthy aging, the centers of the Guadalinfo Network were identified as a key stakeholder. Guadalinfo is a network of public centers in Andalusia. Guadalinfo centers are located in municipalities with less than 20,000 inhabitants and the most disadvantaged areas of cities. These centers promote equal opportunities in the Access to ICT. The network has around 800 physical centers and 800 local innovation agents working with

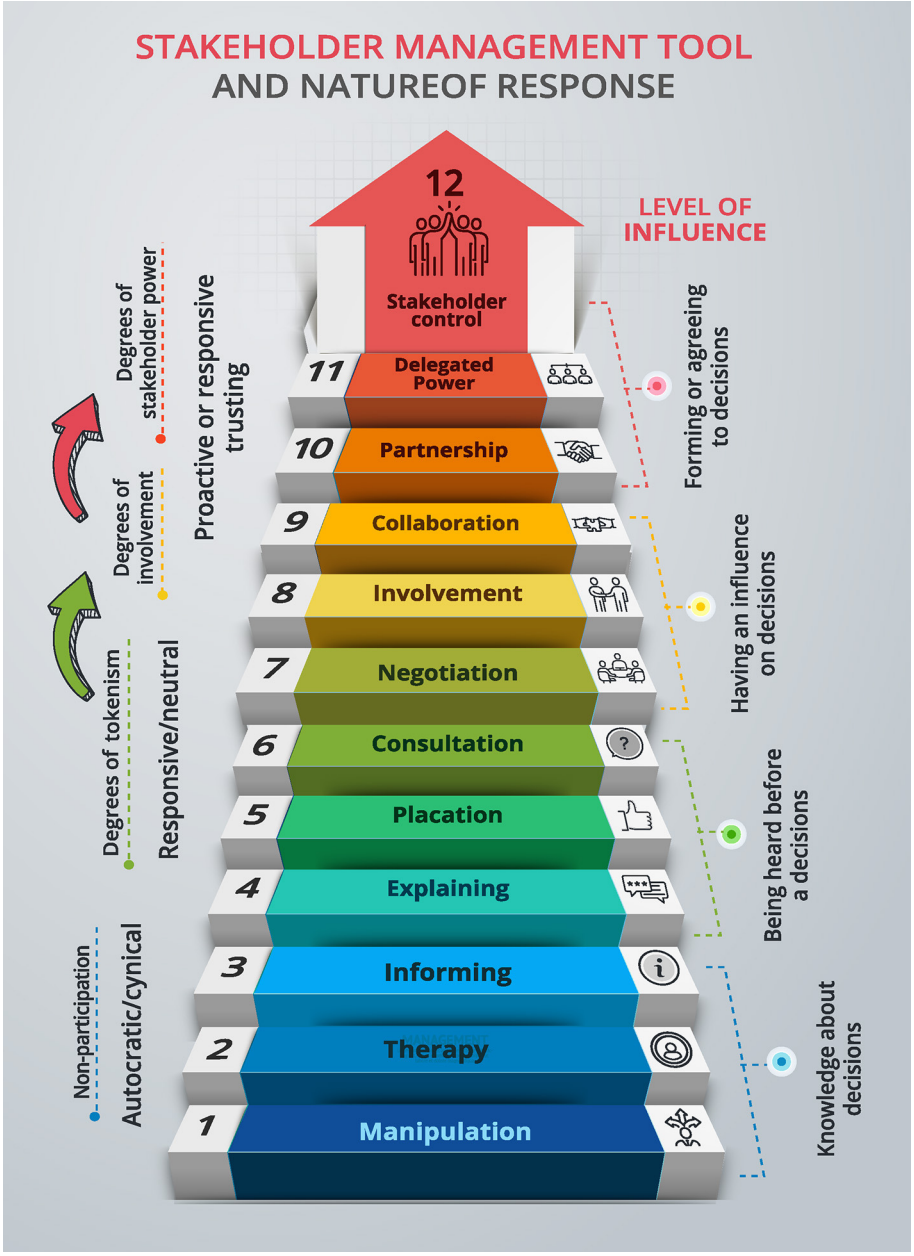

FIGURE 3 | From the consultation and negotiation to the delegation of power.

over a million service users. After first contacts and preliminary interviews, a collaboration agreement was signed. A first forum was organized, and all local innovation agents from the province attended. Their expectations were collected in this meeting. A survey was carried out, the results of this survey pointed out eight priority areas: healthy eating, physical activity, skin care, constipation, health control, polypharmacy, home security, and grandchildren care. A design group was created engaging territorial dynamizers from Guadalinfo and health promotion technical staff. Also, the Local Innovation Agents were trained in the use of the web platform. Training sessions were conducted in two different municipalities to ensure maximum participation. To enable communication and participation of all agents during the solutions design process, a model of the bulletin was proposed to be disseminated via the *Enbuenaedad* platform and Guadalinfo web portal.

Permanent Adult Education Program

These centers, with a total amount of 600 in Andalusia, offer formal training activities for adults and non-formal training schemes, offering, among others, training in the use of ICT, languages, entrepreneurial culture, environmental and cultural

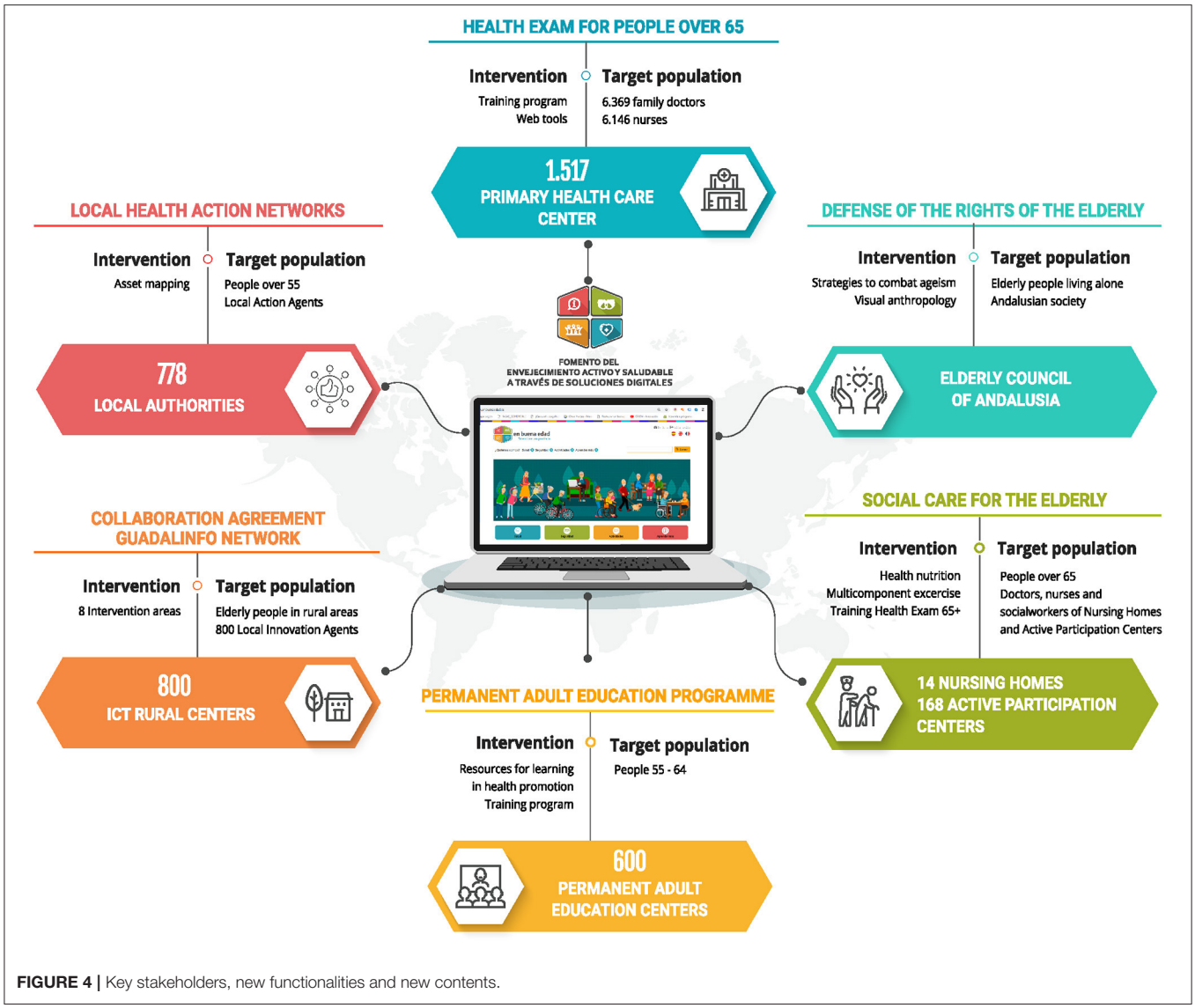

FIGURE 4 | Key stakeholders, new functionalities and new contents.

heritage, healthy lifestyle, etc. Within this framework of non-formal training schemes, a line of collaboration has been established with the Regional Ministry of Education of Andalusia to promote active and healthy aging. Following the Design Thinking method, face-to-face meetings were held during 2017 and 2018. In the light of the needs expressed by teachers and pupils from the adult permanent education centers, permanent learning materials should focus on: balanced diet, physical activity, security at home, safety in the environment, memory, elder abuse prevention, emotional well-being, affectivity, and personal development.

Active Participation Centers

There are 14 Residential Homes and 168 Active Participations Centers (APCs) in Andalusia. The aim to include such centers is that there is no structured intervention ensuring a balanced diet and physical activity adapted to the functional capacity and frailty risk of the older people users of these centers. The need to address this issue is based on the high rates of malnutrition and undernutrition among older adults. Malnutrition affects 70% of older adults that live in residential homes (20). Thirty Percent of those adults are undernutrition, and 50% are at risk for undernutrition (21). With regards to physical activity, previous studies have shown that it contributes to the happiness of older adults and that it directly influences the perceived importance of interpersonal relationships, self-concept, and personal independence (22). On the other hand, an intervention with multicomponent exercise reverts frailty and improves cognitive status, emotional relations, and social networks in weakened older adults (23, 24). In this intervention, the project proposes six areas of intervention through the digital platform: (1) Eat as at home. This intervention uses mealtimes to promote the autonomy of the institutionalized older adults and prevent undernutrition; (2) A reformulation of the dining

service to reinforce a balanced diet and prevent undernutrition; (3) Create catering services for weakened older adults through APC volunteering service; (4) Multicomponent physical activity program that includes muscular strength, balance and flexibility, and aerobic endurance exercises; (5) Professional Training Program to ensure a balanced diet and the practice of physical activity in residential homes and APCs; and (6) MOOC Program on a balanced diet and physical activity for older adults.

The Senior Council of Andalusia

The senior Council of Andalusia is responsible for, among others, promoting and protecting the interests of older people in public and private entities; encouraging active participation of older population by acting as interlocutor of the group before public authorities; and promoting the association by providing the technical support required by the organizations of older adults to encourage their participation in society. The web platform has been presented in conferences organized by the Provincial Council for older adults and other local stakeholders. Also, presentation and training sessions on the use of the platform are being conducted in the eight Andalusian provinces, organized by the Territorial Delegations and the Provincial Councils for older adults. The fundamental contribution of Provincial Councils lies in the detection of needs, desires, and expectations of older adults they represent. Issues closely related to the guarantee of the rights of older adults and the fight against stigma on the grounds of age or inequalities will be developed in collaboration with these stakeholders. To address these issues, the 2018-202 budget now includes the elaboration of a map of legacy, an initiative awarded by the World Health Organization (WHO) for combating ageism, and an approach to the unwanted loneliness through visual ethnography.

Step 4: Establish the monitoring and evaluation system.

A conceptual model has been developed for such issue with not conclusive results by the time being due to the short period to be evaluated. Also, we are testing an index for the Self-assessment of Healthy and Active Aging.

DISCUSSION

Enbuenaedad is the first attempt to foster healthy and active aging through a digital platform in Andalusia. On the one hand, Gustafson et al. (25) highlight the importance of taking the target population into account when developing ICTs on older adults. On the other hand, Le Rouge et al. (9) concluded that user profile information is important data for effective ICTs design. Both ideas are involved in the methodology to develop this project. Older people are essential advocates of their health interests and concerns. They need to be recognized with respect and given a voice when developing policies and plans using ICTs. The results achieved so far demonstrate the positive effect of this method.

Part of the success of the platform has to do with adapting to user expectations. Isakovic et al. (26) advocate for adaptations in size, visibility, comprehensibility of buttons and symbols, as well as the use of tutorials and additional explanations improve the adoption of ICT by the older population. One of the main concerns of this intervention has been to reach the entire target population, with a particular focus on the use of inclusive ICT for people with disabilities. In this intervention, community and professional forums helped to identify specific structural elements of the platform. For example, color contrast for people with low vision, or colored backgrounds to improve the readability.

Demiris et al. (12), point out that older people need adequate and personalized training for their adaption to ICT. Our project contributes to such training through tutorials and with the help of stakeholders.

Last but not least, this project aims well-being promotion in older people. According to Demiris et al. (12), ICTs can provide support and facilitate a comprehensive welfare benefits advice aimed at maximizing decision-making and network accessibility. Le Rouge et al. (9) underlines that older people able to take an active role in their health feel more empowered. To this conclusion, we add the participation pillar. For older people to be social is essential, it is empowering for older people to be social and participative.

LESSONS LEARNED

Enbuenaedad can become an effective advocate for the needs of older people by constituting a strong via for their interests and concerns.

Enbuenaedad development and dissemination require a multidisciplinary approach. There has been increasing recognition of the need to promote active and healthy aging through the use of ICT.

It is important to transmit stakeholders and sectors a clear understanding of their responsibilities. All the stakeholders identified earlier need to be trained to provide an integrated activity across different institutions. They can play an essential role in implementing healthy and active aging. Ideally, all stakeholders should participate in planning to take advantage of the unique skills and experiences of each sector.

It is necessary to have the support of graphic designers to establish a powerful audio-visual communication.

The creation of prototypes is an integral part of our innovation process. We build prototypes to think and learn.

Orientation to action. It is about doing, more than thinking and meeting.

One challenge is to understand the experience of the users. We use qualitative techniques to design the solutions and test their emotions and perceptions. Different experiences and points of view are considered a plus.

One limitation lies in approaching the most vulnerable populations and those with limited access to ICT.

In relation to training, the platform is not sufficiently adapted to the needs of the users. It is necessary to design an App to support this limitation. In the same line, the platform is not enough adapted to the needs of health, social services and education professionals, and caregivers. An App will be developed for that issue.

Focusing on WHO four pillars on active and healthy aging *Enbuenaedad* is based on, preliminary results show effectiveness regarding participation and social interaction. Furthermore,

achieving high participation coverage is a necessary but not sufficient input to the provision of adequate approach to older people. More comprehensive evaluation of the four pillars must be taken to ensure a holistic approach. A challenge is a cooperation between three traditionally independent sectors, cooperative work between health, social services, and education is crucial for the future sustainability of this intervention.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the World Medical Association's Declaration of Helsinki. The protocol was approved by the General Secretariat of Public Health of the Regional Ministry of Health and the Research Ethics Committee of Jaen of the Andalusian Network of Research Ethics Committees. Written informed consent has been documented in a form provided by the Andalusian School of Public Health. This informed consent indicates how identifiable data are used and protected. The form includes a section in which participants are encouraged to ask any questions and to ensure they are comfortable before they sign the consent form. The anonymity of the participants and the confidentiality of the data have been guaranteed according to the Law 14/2007, of Biomedical Research of Andalusia and the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). We applied the concept of an "identifiable natural person" to ensure that it was not possible to establish the link between the data and the study subjects.

AUTHOR CONTRIBUTIONS

SP-P, LL-S, JE-A, JR-F, and FG-P, make substantial contributions to conception and design of the study and wrote the first draft of the manuscript and wrote sections of the manuscript. MP-E, BN-M, and PS, performed the data analysis. All the authors revised the paper critically for important intellectual content; and gave final approval of the version to be submitted.

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REFERENCES

1. Foreman KJ, Marquez N, Dolgert A, Fukutaki K, Fullman N, McGaughey M, et al. Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016–40 for 195 countries and territories. *Lancet* (2018) 392:2052–90. doi: 10.1016/S0140-6736(18)31694-5
2. Whittington FJ. Form ageism to the longevity revolution: Robert Butler, Pioneer. *Gerontologist* (2014) 54:1064–74. doi: 10.1093/geront/gnu100
3. Kalache A. Coping with the longevity revolution. *Cien Saude Colet.* (2014) 19:3306. doi: 10.1590/1413-81232014198.02362012
4. Menéndez G. The longevity revolution: technological change, population ageing and cultural transformation. *Rev Cienc Soc.* (2017) 30:159–78.
5. Cano A, Dargent G, Carriazo A, Lopez-Samaniego L, Apostolo J, Campos E, et al. Tackling frailty and functional decline: background of the action group A3 of the European innovation partnership for active and healthy ageing. *Maturitas* (2018) 115:69–73. doi: 10.1016/j.maturitas.2018.06.009
6. Malva JO, Amado A, Rodrigues A, Mota-Pinto A, Cardoso AF, Teixeira Am, et al. The quadruple helix-based innovation model of reference site for active and healthy ageing in europe: the ageing@coimbra case study. *Front Med.* (2018) 5:132. doi: 10.3389/fmed.2018.00132
7. Faber P. (Ed) *Active Ageing: a Policy Framework in Response to the Longevity Revolution*. Rio de Janeiro: International Longevity Centre (2015).
8. Padial M, Pinzon S, Espinosa JM, Kalache A, Garrido F. Longevity and digital revolution. The contribution of information and communication technologies to healthy aging. *Gerokomos* (in press).
9. LeRouge C, Ma J, Sneha S, Tolle K. User profiles and personas in the design and development of consumer health technologies. *Int J Med Inform.* (2013) 82:e251–68. doi: 10.1016/j.ijmedinf.2011.03.006
10. Kalem G, Turhan C. Mobile technology applications in the healthcare industry for disease management and wellness. *Procedia – Soc Behav Sci.* (2015) 195:2014–8. doi: 10.1016/j.sbspro.2015.06.216
11. Garavand A, Samadbeik M, Kafashi M, Abhari S. Acceptance of health information technologies, acceptance of mobile health: a review article. *J Biomed Phys Eng.* (2017) 7:403–8.
12. Demiris G, Thompson H, Reeder B, Wilamowska K, Zaslavsky O. Using informatics to capture older adults' wellness. *Int J Med Inform.* (2013) 82:e232–41. doi: 10.1016/j.ijmedinf.2011.03.004
13. Heart T, Kalderon E. Older adults: are they ready to adopt health-related ICT? *Int J Med Inform.* (2013) 82:e209–31. doi: 10.1016/j.ijmedinf.2011.03.002
14. Fischer S, David D, Crotty B, Dierks M, Safran C. Acceptance and use of health information technology by community-dwelling elders. *Int J Med Inform.* (2014) 83:e624–35. doi: 10.1016/j.ijmedinf.2014.06.005
15. Padial M, Pinzon S, Navarro B, San Juan P, Ruiz J, Espinosa JM. Effective implementation of the quadruple helix-based innovation model for active ageing. *Gac Sanit.* (2018) doi: 10.1016/j.gaceta.2018.08.003. [Epub ahead of print].
16. Pinzon S, Padial M, Navarro B, Espinosa JM, San Juan P, Lopez-Samaniego L. Identifying needs and expectations of potential users of the virtual platform to foster healthy and active ageing in Andalusia. *Nurs Fam Health Care* (2018) 1:1–3. doi: 10.15761/NFHC.1000102
17. Kolko J. Design thinking comes of age. *Boston, MA: Harvard Business Review* (2015) 4–7.
18. Baker S, Warburton J, Hodgkin S, Pascal J. The supportive network: rural disadvantaged older people and ICT. *Ageing Soc.* (2017) 37:1291–309. doi: 10.1017/S0144686X16000350
19. Cofino R, Avino D, Benede CB, Botello B, Cubillo J, Morgan A, et al. Health promotion based on assets: how to work with this perspective in local interventions? *Gac Sanit.* (2016) 30:93–8. doi: 10.1016/j.gaceta.2016.06.004
20. Mila R, Formiga F, Duran P, Abellana R. Prevalence of malnutrition in Spanish elders: systematic review. *Med Clin.* (2012) 139:502–8. doi: 10.1016/j.medcli.2012.04.008
21. Vaca R, Ancizu I, Moya D, de las Heras M, Pascual J. Prevalence of malnutrition in Spanish institutionalized older people: a multicentric nationwide analysis. *Nutr Hosp.* (2015) 31:1205–16. doi: 10.3305/nh.2015.31.3.8082
22. Bohorquez MR, Lorenzo M, García AJ. Physical activity and self-concept as a promoter of personal independence in the elderly. *Rev Iberoam Psicol Ejercicio Deporte.* (2014) 9:533–46. doi: 10.1186/s11556-017-0185-3
23. Izquierdo M, Cadore EL, Casas A. Exercise intervention in the physically frail older adult to prevent disability. *Kronos* (2014) 13:1–14. Available online at:

https://g-se.com/ejercicio-fisico-en-el-anciano-fragil-una-manera-eficaz-de-prevenir-la-dependencia-1702-sa-l57cfb27242418
24. Li M. Governance of citizen participation and its related concepts: a review of literature. *Int Lett Social Hum Sci.* (2015) 61:99–104. doi: 10.18052/www.scipress.com/ILSHS.61.99
25. Gustafson D, McTavish F, Gustafson D, Mahoney J, Johnson R, Lee J et al. The effect of an information and communication technology (ICT) on older adults' quality of life: study protocol for a randomized control trial. *Trials* (2015) 16:191. doi: 10.1186/s13063-015-0713-2
26. Isakovic M, Sedlar U, Volk M, Bester J. Usability pitfalls of diabetes mhealth apps for the elderly. *J Diabetes Res.* (2015) 2016:1–9. doi: 10.1155/2016/1604609

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COMMUNITY CASE STUDY
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Evaluation of Food Insecurity in Adults and Children With Cystic Fibrosis: Community Case Study

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Advances in the care and treatment of cystic fibrosis (CF) have led to improved mortality rates; therefore, considerably more individuals with CF are living into adulthood. With an increased number of CF patients advancing into adulthood, there is the need for more research that surrounds the aging adult CF patient. It is important to conduct research and collect results on the aging CF population to help better prepare the CF patient, who is dealing with the heavy treatment and financial burden of their disease, build autonomy and increase their quality of life. Of note, research has found that social, behavioral, and physical factors influence the ability of those with CF to follow dietary recommendations. A primary treatment goal in CF is a high calorie, high protein, and high fat diet. A socio-economic factor that has not been adequately investigated with regards to dietary compliance of individuals with CF is food insecurity. The aim of this community case study was to document the experiences and estimate the prevalence of food insecurity among CF patients residing in Idaho. The correlation between food insecurity and health outcomes (lung function and body mass index) was also examined. Participants included adult patients and parents of pediatric patients with CF. Food insecurity rates among CF patients of all ages were found to be significantly higher than that seen in the overall community; however, no specific correlation between food insecurity and body mass index (BMI) or lung function emerged. This case study highlights the need for continued research around food access issues in this patient population. The data resulting from this study shows the value of CF advocacy organizations promoting efforts to build resources and provide education around food insecurity issues.

Keywords: cystic fibrosis, food insecurity, body mass index, pulmonary function, advocacy, research, assistance programs

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INTRODUCTION

Recent advances in the care and treatment of CF have led to improved mortality rates; therefore, considerably more individuals with CF are living into adulthood (1, 2). In 2014, 50.7% of individuals with CF in the United States were over the age of 18 (3). Furthermore, studies report median survival rates of more than 50 years for individuals with CF born in the year 2000 or later (4). Thus, there is a need to better understand the impact of long-term care and quality of life issues among the aging CF population.

In addition to a range of medical treatments, dietary modifications are required to manage CF. Hypercaloric diets (high-fat, high-protein) are prescribed to reduce malnutrition risk and obtain/maintain optimal growth (5–8). Nutritional supplementation (orally or enterally) may also be required to promote adequate intake of energy and nutrients (6, 8). Of note, compliance with the CF diet is generally poor; estimated adherence is 40–55% (9, 10). Research has found that social, behavioral, and physical factors influence the ability of individuals with CF to follow dietary recommendations (5, 8, 11, 12). Though Sullivan and Mascarenhas advocate for food insecurity screening by health professionals working with the CF population (13), food access as a socio-economic factor has not been adequately investigated as a nutritional risk factor among individuals with CF. This community case study aimed to document the experiences and estimate the prevalence of food insecurity in an Idaho-based CF population. The correlation between food insecurity and health outcomes was also assessed.

BACKGROUND AND RATIONALE

CF is a genetic condition causing physiological impairments resulting in the production of thick, sticky secretions in several glands and organs. A buildup of mucus in the lungs leads to persistent and progressive lung infections; thereby, a patient's ability to breathe independently diminishes, and the risk for respiratory failure escalates. A buildup of mucus in the pancreas impairs digestion and increases a patient's risk for a myriad of vitamin and mineral deficiencies as well as malnutrition (14). A large, multi-site trial reported a malnutrition rate of 26.8% among people with CF in the United States (15).

In 2013, CF disease management costs for patients in the United States were estimated at $15,571 per patient per year; $306,000 per patient across a lifetime; however, based on clinical experience, the financial burden may be more substantial (16). Given that CF is a progressive condition, as a patient ages, medical costs also escalate (16, 17). In the United States, annual costs for individuals with mild, moderate, and severe symptoms are estimated at $10,151, $25,647, and $33,691, respectively (16).

Patient self-care or parent/caregiver tasks can also require an extensive time commitment and cause an impact to financial status. For example, the average patient/parent must spend 2 h every day performing complex homecare therapies, one of which is ensuring adequate dietary intake (1, 18). If a CF patient develops an acute pulmonary exacerbation, additional treatments are required and hospitalization for an extended period (two weeks or longer) may be necessary (18). In addition to high medical expenses, complications of CF may result in lost work time for patients and/or family caregivers translating to overall lower household incomes and financial strain (16).

The United States Department of Agriculture (USDA) defines food insecurity as a household-level economic and social condition of limited or uncertain access to adequate food (19). In 2014, the food insecurity rate in the US was 13.7% (19). Idaho estimates were 14.7%, or about one in seven Idahoans (19–21).

Nearly one-third (30.6%) of individuals with chronic disease experience food insecurity (22). Prior to this study conducted at the St. Luke's CF Center of Idaho, the incidence of food insecurity among the CF population living in Idaho had not been well-studied. However, McDonald et al. (23). evaluated nutrition knowledge and food security among parents of pediatric CF patients attending clinics in the Mountain West region—Arizona, Colorado, New Mexico, and Utah. The overall level of food insecurity among families with at least one child with CF was 26.3%, double the average rate of food insecurity for the general population residing in that geographic region (23). Furthermore, there appears to be a dearth of research on the prevalence of food insecurity among adult CF patients, which proves this case study innovative in looking into the aging adult CF population.

Failure to comply with CF dietary guidelines because of food insecurity can put an individual with CF at greater risk for impaired nutritional status and, ultimately, malnutrition. Malnutrition, in turn, may lead to a spiral of increased pulmonary infections, diminished lung function, and ultimately decreased survival (8, 24). In contrast, optimized or improved nutritional intakes have been shown to postpone declines in pulmonary function, thereby decreasing early mortality (8, 25). Food insecurity is also associated with higher rates of anxiety and depression—and these mental health conditions may decrease a CF patient's adherence to therapies needed to maintain optimal health (12, 26).

SETTING

This community study was implemented at the St. Luke's CF Center of Idaho between August 2013 and March 2015. The protocol, which included a computer-based survey plus the collection of both lung and body mass biometrics, was conducted during routine quarterly visits with a multidisciplinary team of health care providers. The St Luke's Health System Institutional Review Board evaluated and approved all aspects of the study. Consent was obtained using the St. Luke's Institutional Review Board-approved form.

Data collection tools were developed using Research Electronic Data Capture (REDCap) which is HIPAA-compliant and designed to support collection and management of confidential data for clinical research studies and made available from the Institute of Translational Health Science (ITHS) via grant UL1 RR025014 (27).

The survey instrument employed for this study was the Mountain West Cystic Fibrosis Consortium Questionnaire (MWCFC-Q). MWCFC-Q was developed by McDonald et al., who used it to assess food insecurity among CF pediatric patients residing in the western United States (23). Due to wanting to investigate both pediatric and adult CF patients, the tool adapted questions from both the Childhood Hunger Identification Project and the Short Form of the 12-month food security scale of the USDA, Food and Nutrition Service (28). Content and face validity, as well as reading level (grade 7–8), were established for the tool. In addition to queries regarding access to food,

information on usage of food assistance programs was collected. Demographics (age, gender, and educational levels for both patients and parents) were also requested.

Lung function metrics were collected for participants over the age of 6 years utilizing a MicroLoop spirometer; forced expiratory volume in 1 s (FEV_1) was measured using National Health and Nutrition Examination III (NHANES III) predicted equations (29, 30). FEV_1 is considered to be a reliable measure of therapeutic efficacy and disease progression; an FEV_1 >80% predicted value is associated with greater lung function and better nutritional status (8, 12). Height, weight, BMI, and compliance with dietary modifications were assessed by a registered dietitian nutritionist (RDN). In addition to an indicator of nutritional status, among the CF population, BMI strongly correlates with lung function and rate of lung function decline (8, 12, 13). For individuals with CF, clinical guidelines for ideal BMI correlate to achievement of optimal lung functioning (FEV1); depending upon the patient's age, clinicians employ either the World Health Organization (WHO) or Centers for Disease Control and Prevention (CDC) reference charts (13). For children under 2 years, a BMI of > 50 percentile per WHO charts is optimal; for those 2 years and older, the ideal BMI is ≥50 percentile per the CDC standards. CDC BMI goals are used to assess BMI among adults with CF, goals are ≥ 22 kg/m^2 for women and ≥23 kg/m^2 for men (13, 31).

Data were collected from patients/parents using a tablet computer. The research coordinator entered BMI and pulmonary function data into the patient survey that was accessible on the tablet. Then, the password protected tablet was provided to the adult CF patients or the parents of children with CF for completion of the survey questions.

Statistical analyses were performed using Statistical Package for the Social Sciences version 23.0, 2015 (SPSS/PC; IBM Corp., Armonk, New York) with a statistically significant p-value set at 0.05. Confidence intervals were calculated using the online Sample Size Calculator provided by the University of California San Francisco's National Center for Advancing Translational Sciences.

RESULTS

Across 20 months, 44 adults with CF and 43 parents of children with CF participated in the study. Most of the CF parents were between 26 and 40 years (72%); 43% of the adult CF patients were within this age range. An equal number of adult CF patients (43%) were between 18 and 25 years. Comparable numbers (37 and 39%) of CF parents and adult CF patients had some years of college education; however, more of the CF parents were college graduates (30 vs. 18%). A small percentage (16%) of parents had more than one child with CF. **Table 1** provides a summary of the demographics and biometrics of patients/parents participating in the survey.

The children with CF ranged from 1 to 17 years; adults 18 to over 51 years. Two children had BMIs within the overweight/obese range (>95th percentile); 22 had BMIs indicative of nutritional risk—20 <50th percentile and 2 <10th percentile. Two adults had BMIs within the obese range (>30 kg/m^2), and seven were overweight (25–29.9 kg/m^2); four had BMIs indicative of nutritional risk (<18.5 kg/m^2). The mean BMI for both adults and children with CF was within normal limits and optimal range. **Table 1** contains a breakdown of BMI for the CF patients in this study.

The average FEV_1 percent predicted value for the children with CF was 84.0 (std. dev. 20.1). The minimum FEV1 percent predicted was 42 and the maximum was 124. For adults with CF, FEV1 percent predicted ranged from 27 to 110, with an average reading of 64.8 (std. dev. 21.1). More than one third of adults with CF (36.4%) had FEV_1 percent predicted in the mild disease to normal range (70 to >90%)−46.5% of children. Less than 1% of the adults (4/44) and none of the children in the study had FEV_1 percent predicted readings in the severe range (<40%). Overall, the mean FEV_1 for this patient pool was minimally below normal limits. See **Table 1** for more detailed information on pulmonary function readings.

Tables 2, **3** summarize compiled findings of the food insecurity survey. One–third (32.6%; 95% CI 19–49%) of parents of children with CF and 43% (95% CI 28–59%) of adults with CF reported that they worried food would run out before they could afford to buy more groceries. Nearly half of the parents (46.5%, 95% CI 31.2–62.3%) revealed that, in the past 12 months, groceries did not always last until there was a new source of funds to replenish the supply. Adults with CF responded similarly—40.9% (95% CI 26.3–56.8%) said that they always/most of the time/sometimes ran out of food in the last 12 months.

About 7% of parents of children with CF indicated sometimes choosing between buying medications and food in the last 12 months (95% CI 1.5–19.1%). The incidence was higher among adults with CF—25% responded that they always/most of the time/sometimes had to make this choice (95% CI 13.2–40.3%).

Children with CF appear to be less food insecure than their adult counterparts. They were more likely to have access to sufficient amounts of food (46.5% of pediatric vs. 36.4% of adult patients) and families of children were more apt to purchase extra foodstuffs (46.5% of families with CF vs. 38.6% adults with CF).

In both adult and pediatric CF populations, no significant correlation emerged between either BMI or FEV_1 and responses to the two key food insecurity questions: "Were you worried your food would last before you got money to buy more?" and "Has the food you bought lasted until you had money to buy more?" ($p > 0.05$). There was also no significant association found between BMI/BMI percentile and FEV_1 ($p > 0.05$; $r = 0.24$), or only BMI percentile and FEV_1 ($p > 0.05$; $r = 0.16$).

Data were also collected on the quality, variety, and desirability of dietary intakes. For instance, 18.2% of adults with CF (95% CI 8.25–32.7%) and 16.3% of parents of children with CF (95% CI 6.8–30.7%) reported that they most of the time/sometimes cut the size of meals or skipped meals because of financial restrictions. Indeed, when asked if they could have any food they wanted, many participants listed protein foods (chicken, hamburgers, seafood, steak, cheese) and potatoes (chips, baked, mashed). These foodstuffs are examples of high calorie, high-fat options recommended in CF dietary guidelines.

TABLE 1 | Demographics of study patients with cystic fibrosis.

	Adult with CF (18-50+ years)	Child with CF (<1 to 17 years)	Parent of a child with CF*
Number of participants	44	43	43
GENDER			
Male	21	Not collected	7
Female	23		36
EDUCATION			
Some high school	3	Not collected	2
High school	12		8
Some college	17	NA	16
College graduate	8	NA	13
Some graduate school	1	NA	1
Master's degree or higher	3	NA	3
SUPPLEMENTAL FOOD PROGRAMS			
Number of participants receiving food assistance	12	29	29
BODY MASS INDEX			
Malnourished: <10th percentile	NA	2	NA
Underweight: <50th percentile	NA	20	
Normal/healthy weight: > 50th to <95th percentile	NA	9	NA
Overweight/obese: ≥ 95th percentile	NA	2	NA
Underweight: < 18.5 kg/m^2	4	NA	NA
Normal/healthy weight: 18.5–24.9 kg/m^2	31	NA	NA
Overweight: 25–29.9 kg/m^2	7	NA	NA
Obese: > 30 kg/m^2	2	NA	NA
FORCED EXPIRATORY VOLUME IN ONE SECOND (FEV^1)			
Normal: FEV_1 > 90	6	10	NA
Mild obstruction: FEV_1 70–90	10	10	NA
Moderate obstruction: FEV_1 40–70	23	4	NA
Severe obstruction: FEV_1 < 40	4	0	NA
Testing not done (< 6 years old)	NA	19	NA

**Applicable data was collected on parents who completed surveys for their children. NA, Not applicable.*

Among this population, 76.2% of the children with CF consumed liquid food supplements; in comparison, only 25% of the adult patients in the study did. In addition, 17.1% of the children and 11.4% of the adults employed tube feeding to meet caloric needs. Thus, treatment protocols for these patients include the added expense of purchasing liquid food supplements and tube feed supplies.

The question of the need to utilize food assistance programs due to limited resources was also investigated. Among study participants, 15% of CF adults and 26% of CF parent respondents reported participating in the Supplemental Nutrition Assistance Program (SNAP). The second most common assistance program utilized was free or reduced-price school lunches; 19% of CF parent respondents reported that their children relied on these meals. More than two thirds (68%) of CF adults did not use food assistance resources; over half (56%) of parents of children with CF also noted not leveraging such options. Furthermore, 41% of the adults and 40% of the parents said they would ***not*** access food assistance resources if they met income requirements for these benefits. Additional details of food assistance program utilization rates are summarized in **Figure S1**.

DISCUSSION

While the burden of medical costs and self-care regimens has been documented, research is scant on the prevalence of food insecurity and its potential impact on time and financial burdens and, thus, on the health outcomes in this population. Among this group of Idahoans—adults with CF and parents raising children with CF—concerns about food/nutrition supplement costs and accessibility emerged. Compared to the community at large, food insecurity rates were found to be significantly more prevalent among study participants. The percentage of food insecure patients in both study groups (parents of children with CF 33%; adults with CF, 43%) was more than double and nearly triple state levels of food insecurity (15%) (21). Furthermore, the prevalence of food insecurity was higher than reported by an earlier study conducted in other states in the Mountain West region of the United States (26.3%) (23).

The types of foods desired by CF patients implies that food insecurity may inhibit compliance with dietary needs (high-protein/high-fat foods). In addition, the survey found that when the money runs out, patients and families are not able to purchase

TABLE 2 | Results of food security tool completed by parents of children with cystic fibrosis.

	Always	Most of the time	Sometimes	Never	Prefer not to answer
In the last 12 months, have you worried whether your food would run out before you got money to buy more?	2	0	12	29	0
In the last 12 months, has the food you bought lasted until you had money to buy more?	23	11	7	2	0
In the last 12 months, have you or other adults in the household cut the size of your meals or skipped meals because there wasn't enough money for food?	0	1	6	36	0
In the last 12 months, how often did you serve punch or water with a meal because you didn't have money to buy milk?	0	1	3	39	0
In the last 12 months, have you or your children eaten with friends or relatives because you didn't have money to buy food?	0	0	6	37	0
In the past 12 months, have you bought all the basic foods (meat, milk, cheese, fruits and vegetables) your family eats without worrying about the cost of the food?	20	14	7	2	0
In the last 12 months, have you bought extra foods (butter, sour cream, peanut butter) for your child with CF without worrying about the cost of the extras?	20	14	6	3	0
In the past 12 months has your child with CF used liquid food supplements that are taken by mouth?	16	7	9	10	1
In the past 12 months, have you had to decide between buying medications and food for your CF child?	0	0	3	40	0
In the past 12 months, has your child with CF used any type of feeding given by a tube into the stomach?	6	1	0	34	2

adequate amounts of food or the medically-necessary nutrition supplements/formulas most CF patients rely on for optimal nutrition. This finding suggests that some patients/parents with limited resources might forgo required medications in order to purchase adequate food. Clinical experience has found that insurance often does not cover these nutrition supplements/formulas (even if prescribed by a provider). Thus, the findings around food insecurity and CF patients emphasize the need to address this gap in insurance coverage. Indeed, optimal dietary intake is necessary for maintaining health in CF patients; therefore, ideally insurers would also cover required food purchases.

The study also explored the correlation between food insecurity and both BMI percentile/BMI and FEV_1; no significant associations emerged between these health metrics and food security among this CF population. Furthermore, despite the overlap between overweight/obesity and food insecurity among other populations (32, 33), food insecurity was not linked to obesity among study participants.

Research correlates food insecurity with higher utilization of health care. A recent study analyzing food insecurity and health care expenditures in the United States from 2011 to 2013 ($n = 16{,}663$) found that expenditures for hospitalizations and prescription medications were higher among the food insecure ($493.41 greater per year, $p = 0.03$ and $779.36 greater per year, $p < 0.0001$, respectively) compared to their food secure counterparts (34). A Canadian study ($n = 67{,}033$, 18–64 years) compared health care costs for inpatient hospital care, emergency department visits, physician services, same-day surgeries, home care services, and prescription medications with severity of food insecurity. Compared to food secure households, health care costs for marginally food insecure households were 16% higher (95% CI, 10–23%); 32% higher for moderate food insecurity (95% CI, 25–39%); 76% higher for severe food insecurity (95% CI, 65–88%) (35). Analysis of the Australian Cystic Fibrosis Data Registry correlated a one point improvement in FEV_1 percent predicted to a 1.4% decrease in health care costs (17).

The results of this study and previous research demonstrate the value of assessing food security among all aged individuals with CF and their families, and addressing food insecurity as aggressively as possible. While the 6-item survey used for this study could be cumbersome to administer, a two-question tool is available, which has been validated for use with both child and adult populations (36, 37). Some health care organizations have already incorporated this screening into their electronic health records (37, 38). The two food security screening questions ask respondents to indicate "often true, sometimes true, never true, or prefer not to answer" to the following statements:

In the last 12 months, we worried whether (my/our) food would run out before (I/we) got money to buy more.

In the last 12 months, the food that (I/we) bought just didn't last and (I/we) didn't have money to get more (37).

The study has several strengths. The survey tool leveraged the MWCFC-Q validated questions on food insecurity and the participants were both from a defined catchment area and seen at a single center. The study's scope went beyond the traditional evaluation of the impact of CF on children, adding new insights into the quality of life among adults with CF. The small sample size, however, may limit the ability to generalize the findings to CF population at large. In addition, the volunteer participation

TABLE 3 | Results of food security tool completed by adults with cystic fibrosis.

	Always	Most of the time	Sometimes	Never	Prefer not to answer
In the last 12 months, have you worried whether your food would run out before you got money to buy more?	2	1	16	25	0
In the last 12 months, has the food you bought lasted until you had money to buy more?	26	8	8	2	0
In the last 12 months, have you or other adults in the household cut the size of your meals or skipped meals because there wasn't enough money for food?	1	2	6	34	1
In the last 12 months, how often did you serve punch or water with a meal because you didn't have money to buy milk?	1	3	4	36	0
In the last 12 months, have you eaten with friends or relatives because you didn't have money to buy food?	0	0	11	33	0
In the past 12 months, have you bought all the basic foods (meat, milk, cheese, fruits and vegetables) you or your family eats without worrying about the cost of the food?	16	11	11	6	0
In the past 12 months, have you bought extra foods (butter, sour cream, peanut butter) without worrying about the cost of the extras?	17	9	9	9	0
In the past 12 months have you used liquid food supplements that are taken by mouth?	3	8	14	19	0
In the past 12 months, have you had to decide between buying medications and food?	1	3	7	33	0
In the past 12 months, have you used any type of feeding given by a tube into the stomach?	0	3	2	39	0

model risks the introduction of self-selection bias; however, given that about 70% of the St. Luke's Cystic Fibrosis Center of Idaho patients participated in the study the risk for selection bias was diminished. Furthermore, because they were below the age for evaluating lung functioning, FEV_1 tests were not done on 19 of the 43 children with CF (42.2%); thus, the lack of correlation between food insecurity and lung health may not be generalizable to children age six and under. Lastly, this study did not consider the impact of confounding variables, such as socioeconomic factors often found among food insecure populations (lower income level, less education, single parent households).

CONCLUSION

Food insecurity is highly prevalent among Idahoans with CF; rates are significantly above the rate for the general population in the state. Furthermore, food insecurity may impact a patient's ability to adhere to the required dietary modifications and overall treatment protocol for CF, as well as, lessen their chances of an improved quality of life as they age. Though no significant correlations precipitated with regards to food insecurity and lung function or BMI, the importance of providers querying patients/parents about this social determinant of health emerges. A validated, two-question survey tool is available for screening patients and families about food access issues.

One surprising finding in this study was the degree of reluctance among patients/parents to utilize food assistance programs. Further investigation into this issue and how to sensitively encourage patients and families to leverage these programs is needed. Thus, the importance of CF providers (physicians, advanced practice providers, social workers, dietitians, and nurses) being knowledgeable about what food assistance resources are available in their area and coordinating information and referrals for such services surfaces.

Finally, this study, combined with results from McDonald et al. highlights the value of CF advocacy organizations promoting efforts to address and the education around food access concerns (26). For example, additional research designed to enhance the specifics of food insecurity problems among the whole CF population (from pediatric to aging adult), development of innovative assistance programs, improved access and support for current assistance programs, and lobbying for insurance coverage of nutrition supplements/formulas would be highly valuable.

DATA AVAILABILITY STATEMENT

The datasets for this manuscript are not publicly available because: St. Luke's Cystic Fibrosis Center of Idaho does not have the capacity to release the data at this time.

AUTHOR CONTRIBUTIONS

PB contributed to study conception and design, manuscript writing, and final approval of the version being published. DD contributed to study conception and design, data collection, manuscript writing, and final approval of the version being published. RT contributed to data analysis and final approval of the version being published. SS and CW contributed to manuscript writing and final approval of the version being published. ST, BG, and TR contributed to critical manuscript revisions and final approval of the version being published.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpubh.2018.00348/full#supplementary-material

REFERENCES

1. Sawicki GS, Sellers DE, Robinson WM. High treatment burden in adults with cystic fibrosis: challenges to disease self-management. *J. Cystic Fibrosis* (2009) 8:91–6. doi: 10.1016/j.jcf.2008.09.007
2. Hurley MN, McKeever TM, Prayle AP, Fogarty AW, Smyth AR. Rate of improvement of CF life expectancy exceeds that of general population–Observational death registration study. *J Cystic Fibrosis* (2014) 13:410–5. doi: 10.1016/j.jcf.2013.12.002
3. Registry CFFP. *Patient Registry Annual Data Report* (2016).
4. Dodge JA, Lewis PA, Stanton M, Wilsher J. Cystic fibrosis mortality and survival in the UK: 1947–2003. *Eur Respir J.* (2007) 29:522–6. doi: 10.1183/09031936.00099506
5. Borowitz D, Baker RD, Stallings V. Consensus report on nutrition for pediatric patients with cystic fibrosis. *J Pediatric Gastroenterol Nutr*. (2002) 35:246–59. doi: 10.1097/00005176-200209000-00004
6. Yankaskas JR, Marshall BC, Sufian B, Simon RH, Rodman D. Cystic fibrosis adult care: consensus conference report. *Chest* (2004) 125:1S−39S. doi: 10.1378/chest.125.1_suppl.1S
7. Alvarez JA, Ziegler TR, Millson EC, Stecenko AA. Body composition and lung function in cystic fibrosis: association with adiposity and normal weight obesity. *Nutrition* (2016) 32:447–52. doi: 10.1016/j.nut.2015.10.012
8. Stallings V, Stark L, Robinson K, Feranchak A, Quinton H. Evidence-based practice recommendations for nutrition-related management of children and adults with cystic fibrosis and pancreatic insufficiency: results of a systematic review. *J Am Diet Assoc.* (2008) 108:832–9. doi: 10.1016/j.jada.2008.02.020
9. Kalnins D, Wilschanski M. Maintenance of nutritional status in patients with cystic fibrosis: new and emerging therapies. *Drug Design Dev Ther*. (2012):2012–6. doi: 10.2147/DDDT.S9258
10. O'Donohoe R, Fullen BM. Adherence of subjects with cystic fibrosis to their home program: a systematic review. *Respirat Care* (2014) 59:1731–46. doi: 10.4187/respcare.02990
11. Stark LJ. Can nutrition counselling be more behavioural? Lessons learned from dietary management of cystic fibrosis. *Proc Nutr Soc.* (2003) 62:793–9. doi: 10.1079/PNS2003294
12. Zemanick E, Harris J, Conway S, Konstan M, Marshall B, Quittner A, et al. Measuring and improving respiratory outcomes in cystic fibrosis lung disease: opportunities and challenges to therapy. *J Cystic Fibrosis* (2010) 9:1–16. doi: 10.1016/j.jcf.2009.09.003
13. Sullivan JS, Mascarenhas MR. Nutrition: prevention and management of nutritional failure in cystic fibrosis. *J Cystic Fibrosis* (2017) 16:S87–93. doi: 10.1016/j.jcf.2017.07.010
14. Panagopoulou P, Fotoulaki M, Nikolaou A, Nousia-Arvanitakis S. Prevalence of malnutrition and obesity among cystic fibrosis patients. *Pediatrics Int*. (2013) 56:89–4. doi: 10.1111/ped.12214
15. Lai HJ, Shoff SM. Classification of malnutrition in cystic fibrosis: implications for evaluating and benchmarking clinical practice performance. *Am J Clin Nutr*. (2008) 88:161–6. doi: 10.1093/ajcn/88.1.161
16. van Gool K, Norman R, Delatycki MB, Hall J, Massie J. Understanding the cost of care for cystic fibrosis: an analysis by age and health state. *Value Health* (2013) 16:345–55. doi: 10.1016/j.jval.2012.12.003
17. Gu Y, Garcia-Pérez S, Massie J, van Gool K. Cost of care for cystic fibrosis: an investigation of cost determinants using national registry data. *Eur J Health Econom*. (2015) 16:709–17. doi: 10.1007/s10198-014-0621-5
18. Kettler L, Sawyer S, Winefield H, Greville H. Determinants of adherence in adults with cystic fibrosis. *Thorax* (2002) 57:459–64. doi: 10.1136/thorax.57.5.459
19. Coleman-Jensen A, Nord M, Andrews M, Carlson S. *Household Food Security in the United States in 2011*. United States Department of Agriculture (2012).
20. Coleman-Jensen A, Rabbitt M, Gregory C, Singh A. *Household Food Security in the United States in 2014*. United States Department of Agriculture (2015).
21. Bank IF. *Food Insecurity in Idaho* (2015).
22. Charkhchi P, Fazeli Dehkordy S, Carlos RC. Housing and food insecurity, care access, and health status among the chronically ill: an analysis of the behavioral risk factor surveillance system. *J Gen Int Med*. (2018) 33:644–50. doi: 10.1007/s11606-017-4255-z
23. McDonald C, Christensen N, Lingard C, Peet K, Walker S. Nutrition knowledge and confidence levels of parents of children with cystic fibrosis. *ICAN* (2009) 1:325–31. doi: 10.1177/1941406409355192
24. Steinkamp G, Wiedemann B. Relationship between nutritional status and lung function in cystic fibrosis: cross sectional and longitudinal analyses from the German CF quality assurance (CFQA) project. *Thorax* (2002) 57:596–601. doi: 10.1136/thorax.57.7.596
25. Goodin, B. (2005). Nutrition issues in cystic fibrosis. *Pract Gastroenterol*, 27:76–94. Available online at: https://www.practicalgastro.com/pdf/GoodinArticle_May05.pdf
26. Cruz I, Marciel KK, Quittner AL, Schechter MS. Anxiety and depression in cystic fibrosis. *Semin Respir Crit Care Med.* (2009) 30:569–78. doi: 10.1055/s-0029-1238915
27. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)–a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. (2009) 42:377–81. doi: 10.1016/j.jbi.2008.08.010
28. Bickel G, Nord M, Price C, Hamilton W, Cook J. Measuring food security in the United states - guide to measuring household food security. In: Drive PC, Alexandria V, editors. Office of Analysis N, and Evaluation, Food and Nutrition Service USDA, Alexandria, VA (2000). p. 305–2133.
29. Stanojevic S, Wade A, Stocks J, Hankinson J, Coates AL, Pan H, et al. Reference ranges for spirometry across all ages: a new approach. *Am J Res Crit Care Med*. (2008) 177:253–60. doi: 10.1164/rccm.200708-1248OC
30. Piccioni P, Borraccino A, Forneris M, Migliore E, Carena C, Bignamini E, et al. Reference values for forced expiratory volumes and pulmonary flows in 3–6 year children: a cross-sectional study. *Respir Res*. (2007) 8:14. doi: 10.1186/1465-9921-8-14
31. Centers for Disease Control and Prevention. *Body Mass Index*. (2015).
32. Kaisere ML, Cafer A. Understanding high incidence of severe obesity and very low food security in food pantry clients: implication for social work. *Social Work Public Health* (2018) 33:125–39. doi: 10.1080/19371918.2017.1415181
33. Food Research and Action Center. *Understanding the Connections: Food Insecurity and Obesity* (2015).
34. Berkowitz S, Basu S, Meigs J, Seligman H. Food insecurity and health care expenditures in the United States, 2011–2013. *Health Serv Res*. (2017) 53:1600–20. doi: 10.1111/1475-6773.12730

35. Tarasuk V, Cheng J, de Oliveira C, Dachner N, Gunderson C, Kurdyak P. Association between household food insecurity and annual health care costs. *Can Med Assoc J*. (2015 187:E429–36. doi: 10.1503/cmaj.150234
36. Swindle TM, Whiteside-Mansell L, McKelvey L. Food insecurity: validation of the two-item screen using convergent risks. *J Child Family Stud*. (2013) 22:932–41. doi: 10.1007/s10826-012-9652-7
37. Gundersen C, Engelhard EE, Crumbaugh AS, Seligman HK. Brief assessment of food insecurity identifies high-risk US adults. *Public Health Nutr*. (2017) 20:1367–71. doi: 10.1017/S1368980017000180
38. Council on Community Pediatrics CoN. Promoting food security for all children. *Pediatrics* (2015) 136:1431–8. doi: 10.1542/peds.2015-3301

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Informal Carers Training: In-group Social Learning as an Effective Method for Quality Care Empowerment

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In this article, a method of in-group social learning used for informal carers training is presented. This method was developed by Jože Ramovš and his team at the Anton Trstenjak Institute of Gerontology and Intergenerational Relations primary for the fields of holistic health prevention and aging; later on, special attention has been given to its development for training of informal carers as the latter often carry the most significant part of the long-term care burden. In the first part of the article, the need for such a method is discussed through a review of current international demographic and long-term care situations. In the second part, a novel method for the training of informal carers is introduced. Finally, the results of the evaluation analysis of 453 persons who participated in the training are presented and compared with the results of the nationally-representative study. The results show that the method of in-group social learning has a great potential for quality care empowerment of informal carers as well as for holistic development of intergenerational solidarity in the modern age. Furthermore, they open new possibilities for research and present directions for further development and implementation of the described method within this important field.

Keywords: long-term care, informal care, informal carers training, group social learning, group method, family carers, intergenerational solidarity, demographic solutions

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THE REVIEW OF DEMOGRAPHIC CHANGE AND LONG-TERM CARE IN THE TWENTY-FIRST CENTURY UNDERLINES THE NEED FOR INFORMAL CARERS TRAINING AND IN-GROUP SOCIAL LEARNING METHOD

Long-term care refers to services designed to support old, disabled or ill people who cannot perform one or more basic daily tasks called Activities of Daily Living (ADL)—getting out of bed, personal hygiene, dressing, functional mobility, self-feeding, taking medicines, excretion and maintaining daily social interactions or Instrumental Activities of Daily Living (IADL)—cooking, cleaning, washing and ironing, shopping, financial transactions, transport and other important tasks. This and other similar definitions constitute a framework for modern European systems of long-term care (Leichsenring et al., 2013) and their tools for assessment of care needs and carers' rights (Richtlinien, 2016).

Throughout mankind's history there have been two crucial anthropological observations about caring for the disabled: (1) contributions of stronger individuals toward weaker (called solidarity)

is one of the essential characteristics of the human species; (2) caring for ill, frail or disabled individuals by families, relatives and neighbors (partly even by local, religious or other types of communities) is assumed in traditions of all civilizations.

In the twenty-first century, two essential phenomena have made a significant impact on the field of care for disabled members of the community. The first phenomena are the demographic changes leading to an aging population, which have severe effects on requirements and provision of long-term care. Second is the need for new social models of solidarity between generations, due to the radically changed domestic situations compared to traditional models of coexistence.

European policy aims to respond to demographic changes and to build on the human anthropological tradition of solidarity (European Commission, 2005). Health, social, spatial, infrastructure and gradually also educational experts are responding to these changes cooperatively, through accelerated development of methods aimed to improve intergenerational cooperation, good quality aging, and, importantly, long-term care. Accordingly, the development of our novel method of in-group social learning used for training of informal carers, which will be presented here and is based on the previously mentioned anthropological facts, aims to provide some of the answers to this challenging new demographic situation.

Demographic Situation and Long-Term Care

In the transition from the Twentieth to the Twenty-first century, the fertility rate in developed countries decreased to below the replacement level of its population, which is 2.1 children/woman. Together with prolongation of life expectancy, continuing from the Twentieth century, and the large "baby boom" generation born after the 2nd World War, this has resulted in accelerated aging of the population.

While traditional societies had ∼10% of their populations aged 60+, Europe's share of 60+ people is currently around 25% and will increase up to 35% by 2050. The proportion of people aged 80+ has been increasing even more rapidly and is projected to triple around the world by 2050 (United Nations, 2017a). Considering that majority of people aged 80+ need support with their ADL and that support with IADL is needed from 5 to 10 years earlier, it is no wonder that proportion of European population in need of long-term care services is increasing (European Commission, 2014). The same could be observed in most areas of the United States, Canada, Japan, China, Australia, and other developed countries (United Nations, 2017b).

Innovative solutions in contemporary long-term care can also be transferred to other parts of the world, which, despite maintaining high birth rates, are nevertheless experiencing delayed demographic changes affecting long-term care of old and disabled populations. In countries of Africa, South America and, to a lesser extent, Asia, this phenomenon is a consequence of rapid migration to urban areas, in particular to suburbia of fast-growing cities, and the disintegration of traditional families and their patterns of coexistence, along with the fact that most of these countries do not have advanced systems of social care (e.g., universal pension income, health insurance and a social network of public care services) which could replace the shortfall of traditional care.

Over the past two centuries, industrialization and urbanization led to structural adjustments of care in parts of Europe and North America. Professional care institutions and services were gradually introduced, especially over the last 50 years, starting with the retirement homes, followed by home care and various other services for respite, day, night, social and health care, including contemporary hospice models for palliative care; all these programs are provided by formal carers.

At the end of the Twentieth century and the beginning of the Twenty-first century, it became apparent there was an increased need for care and support of informal carers. The important turning point in Europe was European research project about family care EUROFAMCARE—Services for Supporting Family Carers of Elderly People in Europe: Characteristics, Coverage and Usage (Mestheneos and Triantafillou, 2005), with the participation of six EU countries: Germany, Greece, Italy, Poland, Sweden, and the United Kingdom. Slovenia was partly involved in this project, during which the first Slovenian research on informal care was carried out (Hvalič Touzery, 2007). Since then, informal care has become the focus of many international research studies, including a longitudinal, international project SHARE—Survey of Health, Aging, and Retirement in Europe.

The data mentioned above (Mestheneos and Triantafillou, 2005) showed that informal carers of disabled older persons are predominantly family members or, to a lesser extent, their neighbors, volunteers, and friends. As Stecy Yghemonos, an executive manager of Eurocarers (European Association Working for Carers) pointed out, informal carers represent 20% of the European population (nearly 100 million people) and provide 70–90% of all care in today's Europe (Yghemonos et al., 2018). Needless to say, European long-term systems would not be sustainable without their contribution. However, this crucial resource is under pressure. Many people find themselves placed in the role of carer overnight and face extreme challenges: a lack of skills and knowledge about how to provide care, about the diseases, and about the communication with disabled people; a lack of time for rest; and the inability to cope with their own personal physical and mental health, including sense of helplessness and fear of care receiver's health deterioration (Ramovš, 2013). Current global demographic and socio-economic trends are further compounding this strain, such as lower birth rates, smaller family units, increasing mobility leading to greater physical distances between relatives, the rising number of women entering the labor market and a prolonged working life due to delayed retirement (Eurocarers, 2017). Despite this, informal carers' interests are still rarely considered in European policies in a consistent and across-the-board manner (Eurocarers, 2017).

In Slovenia, a nationally representative field study was carried out among older persons aged 50+ on their needs, potentials, and standpoints; this research also provided in-depth data about care (Ramovš, 2013). According to this data, long-term care in Slovenia is provided by 220,000 informal carers (∼11% of Slovenian population) who provide care regularly, from a

few hours per week to 24 h per day. Among them, there are ∼200,000 family carers (relatives) and ∼20,000 other informal carers (neighbors, volunteers, or friends), and they provide care to 75% of persons in need of care. For the remaining quarter of this group, to whom the care is provided in institutions, a coordinated inclusion of relatives and volunteers can also significantly improve their quality of life.

Since a long-term care system has not yet been adopted in Slovenia, informal carers are left unsupported, despite politicians declaring they recognize the need for respite care and training of informal carers. The interdisciplinary strategy of care for older persons published in 2008 titled "*Solidarity, good intergenerational relations and quality aging of the population,*" predicted: "*... for the families who care for an older family member proper training should be provided together with various forms of local support services and day or respite care for the older family members; to support adoption of measures for more flexible working time and to support the right to the shortened working time, without the closing of social security, for the employed person due to the urgent care of the close family relative*." Republic of Slovenia. Ministry of Labour (2008). However, its execution still waits for the adoption of a modern system for long-term care: the last legislative proposal on long-term care was introduced at the end of 2017 but was later removed.

To conclude, results from studies and practical experiences lead us to three main findings on the demographic situation and long-term care:

1. Without informal care, no universal, humane, societally, and economically sustainable care can be ensured by any professional, public, or commercial system in the present times or the future.
2. For family and other informal carers provision of care is getting increasingly difficult.
3. An answer lies in an integrated national system of long-term care that brings together all sources of care—informal and formal: family and other informal carers, organized professional carers, programs, institutions, public resources and resources of people in need—that is systematically organized on a national level, carried out on a community level and is directed toward home care and deinstitutionalization. This system will incorporate training and support for family and other informal carers. This third finding was recently recognized also by the European Union in the form of the European Pillar of Social Rights on the Long-Term Care (European Parliament, 2017).

The method of in-group social learning, outlined in this article, was developed as a response to the needs of informal carers for quality training. It covers the topics recognized as most pressing for this group and takes into consideration their individual capabilities and limitations. As stated by many sources (e.g., Turner and Street, 1999), quality training is one of the best ways to empower informal carers.

Need for a New Solidarity

With the disintegration of traditional families and their patterns of coexistence, social capital from millennia-old traditions with traditional patterns of solidarity is expiring. A Green Paper "Confronting demographic change: a new solidarity between the generations" (European Commission, 2005) is a response to this new situation.

Delivering care plays a significant role in developing persons' ability for solidarity. Consequently, in the times of population aging, the great need for care presents not only great burden but also offers a unique opportunity to develop contemporary solidarity. This is especially important as, despite the successful scientific and technical progress during the last two centuries (which consequently improved physical health and life expectancy), the development and understanding of human relations and the person as a whole in Europe lagged behind.

Long-term care has two dimensions (as does any other domestic, volunteer, or professional work with people in need or distress):

1. It is a service or task which responds to the concrete need of a person who is not able to perform this service or task by himself/herself.
2. It is a personal relationship between two human beings.

Services are often performed better, faster, and cheaper with professional skills and technical tools or aids; and indeed, care services are nowadays also available on the market and will likely be largely supported by information and communication technology (ICT) in the future. However, such care services only support single directionality of the communication: from carer to care receiver (user of this service).

On the other hand, the human relationship between the person who needs help to survive and the stronger person who can provide this help, functions as two-way open communication which preserves and enhances the human dignity of both, the care receiver and the carer. This is a quality that cannot be offered on the market or substituted by ICT.

When service or task and human relationship are in equilibrium, they offer a possibility for the development of the above-mentioned new solidarity. The carer in his/her position of strength through care enables the care receiver to live and to experience a better quality of life. On the other hand, when asked about benefits in a comprehensive cost-benefit analysis of care (Ramovš et al., 2013), carers listed the awareness of successfully fulfilled obligation toward their family members as important, they noted the expressed gratitude of care receiver and they expressed hope to receive help from others in the future, if needed. This and other parts of the study show that, while giving help to disabled or aged persons, a majority of carers experienced the development of empathy, compassion for other human beings and solidarity—human abilities that are key to any quality interpersonal relations. And indeed, solidarity can only be developed when helping a persons in need is not just a routine or insensitive service, nor is it exercising supremacy over a weaker person, but it is an understanding that despite differences in strength both of the participants (carer and care receiver) are human beings equal in their human dignity.

Furthermore, if a caring relationship helps the carer to develop as a human being, growing in empathy and solidarity, the care receiver, despite his/her frailty, feels that he/she is also giving

something of great value. By knowing this, the care receiver receives mental, social, and spiritual power along with the provided services for physical well-being, which enables him or her to remain a holistic human being with the defiant power of the human spirit (Frankl, 1987) despite any limitations imposed by the illness. Therefore, this way of caregiving and care-receiving acts as a two-way open relationship where both parties are giving and receiving.

To summarize, long-term care is the most significant opportunity for the development of new solidarity and quality interpersonal relations on personal, professional, and societal level in the Twenty-first century. To use this opportunity, much attention from both individual and societal levels will have to be directed toward educating people on relational human caregiving and acceptance of received care with gratitude. The method of in-group social learning, described in this article, was developed with this consideration.

IN-GROUP SOCIAL LEARNING METHOD AND ITS USE IN TRAINING FOR INFORMAL CARERS

In-group social learning is a method used for training informal carers. It was developed by Jože Ramovš and further refined by him and his coworkers at Anton Trstenjak Institute of Gerontology and Intergenerational Relations for quality aging and long-term care. This section begins with a brief description of the in-group social learning method since it has not been yet described in English literature and since its understanding is crucial to appreciate its importance for informal carers training. In the second part of this section, the implementation of the in-group social learning method for informal carers training will be presented, evaluated and discussed.

Method Description

In-group social learning is a group learning method based on the narration of personal experience and personal knowledge of each participant, moderated by a group leader. The method focuses on positive experiences and includes only negative experience that were successfully resolved. It builds on the human ability to experience empathy and solidarity toward others and in turn, develops these two characteristics further. One of the most significant advantages of in-group social learning is a bidirectional link between theoretical knowledge and actual living situation—skills and knowledge needed by participants are simultaneously transferred from and to everyday practice, helping participants to further understand their needs and possible concrete solutions. Goals of the method are: development and shaping of human personality, quality intergenerational and other interpersonal relations, and encouragement of dialogue within families, working environments and on a societal level (Ramovš, 2000, 2013).

In-group social learning method was developed by Jože Ramovš using Bandura's theory of social learning, Frankl's logotherapy and Moneno's teaching about group and group work as sources. The origins of the method date back to 1980, when the author was working with adolescents and people suffering from addictions and was using it for the purpose of health and social prevention. In the following years, when his focus moved toward working with older persons, the method was extensively developed in the area of gerontology; at the beginning as part of the intergenerational programs and programs for healthy, active, and quality aging and later for the area of long-term care. As of this date, Dr. Ramovš's team at Anton Trstenjak Institute of Gerontology and Intergeneration carried out more than 300 training sessions using the method of in-group social learning.

Comparing the method with Aristotle's traditional learning methods, there are some unique aspects as well as some similarities:

Scientific knowledge learning (episteme) is based on rational ability, especially on the ability to memorize. Its goal is to collect objective, impersonal knowledge about things, people, events, processes, functioning, formation, and achievement. In-group social learning shares the same aspiration for the analytical insight of the goal and learning process, but unlike scientific knowledge learning, in-group social learning originates from concrete, personal experience and is focused toward it.

Skill and crafts learning (techné) is focused on productivity and acquisition of different competencies. Even though in-group social learning also focuses on the use of acquired knowledge for everyday life, its aim is directed more toward living this knowledge (existing) rather than acquiring something new (possessing something).

In-group social learning is therefore complementary to the methods of learning mentioned above, with the difference of being more internal (as is *practical wisdom learning (phronesis)* in Aristotle's division). Whereas, the main purpose of scientific knowledge learning and skill and craft learning is individual and social development within the field of "having everything needed for survival," the main aim of in-group social learning is to develop a person's character and interpersonal relations, i.e., to be a person amongst people (Fromm, 1976). Or, if we paraphrase the observations of the philosopher and thinker on interpersonal relations Martin Buber, we can identify in-group social learning as a method for the strengthening of the Me-Thou (You) relations, whereas majority of other educational and teaching methods mainly lead to successful development of the Me-It relationship (Buber, 1979).

In-group social learning also could be compared to peer learning. *Peer learning* is a recent trend in seniors' programs and is used in a variety of contexts. It can be defined as the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. It involves people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by doing so (Topping, 2005). In-group social learning is similar to peer learning because they both emphasize active engagement of every participant and sharing previous experiences and knowledge for the purpose of learning. Participants can be described as people coming from similar social groupings, e.g., in the case of informal carers training, the collective experience of being a carer qualifies participants as peers. However, unlike in peer

learning, social group learning is led by a specially trained group leader. Moreover, while the success of peer learning depends on the quality of the contributions of the moderator and fellow participants (Clark et al., 1997), in-group social learning with its rules safeguards the red line of the meetings and protects the participants from dwelling on the negative experiences.

Dimensions of In-Group Social Learning

Group and Its Power

The fundamental background of all modern group work is a family—the primary natural human group. Distinct types of contemporary groups reveal various family characteristics, such as:

- A deep emotional bond between members that gives a feeling of home or belonging and is a source of group consciousness.
- Direct communication between members.
- A relatively permanent and continuous entity that offers a feeling of security.
- Intrinsic goals, values, and norms (called the culture of a group).
- The intrinsic structure of the roles, activities, and positions of individual members.

Based on these characteristics, the group can be defined as a number of people who experience a mutual sense of belonging or share the same group consciousness, who communicate directly with each other and who have certain goals, values, and norms. Consequently, they also share a common program and have their own structure of roles and positions (Ramovš, 2000).

The pioneer of the modern group, group work, and interpersonal relations research was Jakob Levy Moreno. He discovered that a group presents itself as an indispensable factor in the formation of human personality and interpersonal relations and as such can be useful as a therapeutic tool (for this purpose he developed group psychodrama) and a fertile field for human relations research (as reflected in his development of the psychometric method). Moreno was an expert in the exploration of the fine balance between an individual human being, a group, and a community—the concept which the in-group social learning tries to incorporate in its practice.

A classical researcher of the group was Kurt Lewin, who studied the effect of several types of leadership on group dynamics between 1937 and 1949. This was the time when self-organized self-help groups started to form (such as AA). His research enabled a better understanding of group dynamics and group processes, its development, and different methodologies for its use. Professional and self-organized group work slowly became popular at the end of the last century, and multiple theories of group work have been established, with all of them stressing the importance of group methodology for more intense forms of learning.

As indicated earlier, group learning is social learning. For people, entering distinct groups (from family to working groups and groups of friends) also presents a learning process. Social learning was widely explored by Albert Bandura (1977). He emphasized its instrumental nature and found it to be effective through cognition driven process of experience transformations where people learn not only from their own experience but also by observing others. Researchers of social learning up to date have mainly focused on the investigation of social processes and short-term goals. Development of social learning for the field of quality aging, long-term care, and intergenerational solidarity is in many ways different. It demands an understanding of the complexity of the life processes and the achievement of long-term goals.

In our practice, the in-group social learning is usually carried out in mid-sized groups (9 to 18 participants), and rarely in small groups (2 to 8 participants) or big groups (19 to 32 participants). With such numbers, the group can be used as a safe environment where people can share their experiences and learn more intensely (from each other, from pre-prepared materials or from the experts visiting the group); it also presents a bridge between a person and a community, as described above.

Concrete Needs, Abilities, and Experiences of the Group Participants

The main motivation for participation in the in-group social learning is concrete, personal need of the participant. At the same time, a participant's abilities and experiences present the best starting point for working with the group. Building on this, the topic of the program is always focused on something concrete; e.g., training for family and other informal carers revolves around topics such as mastering the basic nursing skills, skills for communication with disabled older persons, coping skills, and empowerment for a healthier lifestyle. Furthermore, training manuals are structured in a way that incorporates modern knowledge on the addressed subject and helps participants to integrate acquired knowledge with their own experience. To enable this, much of the time during the meetings (three quarters) is dedicated to experience sharing; if possible, the participant should have an opportunity to voice his/her experience or thoughts two to three times per meeting.

Experiences are a crucial factor for the in-group social learning. Experiences include everything an individual did in his/her life, everything he/she experienced and everything that has happened to him/her. They are the primary determinant of our current experience of the world, the actions we take, and our orientation for the future. Moreover, that goes for all experiences: bad and good, common and exceptional, conscious, and unconscious. Experiences are the most private property of a human being, as personal as his physical body. They make us who we are: happy or unhappy, good or bad, agreeable or unpleasant to others, successful or unsuccessful. But not solely so in their original form, but mostly when they are processed by our brains through communication and in relation with others (Ramovš et al., 1990; Laing, 2015). In the fast tempo of modern life, there is a tendency for good experiences to sink into forgetfulness, while bad experiences remain inside our consciousness and become sharper as time goes by. In order for bad experiences to find a useful place in human life, they have to be properly processed.

In-group social learning facilitates the development of human experience. Group with specially trained group leader helps the participant's cognitive process to stimulate good experiences stored in the memory. Moreover, healthy recognition of

positive experiences is a requirement for successful learning and processing of the negative experience into important findings and effective new behaviors (Ramovš, 2013). For this demanding process, adapted methods from modern positive psychology and psychotherapy are used in the in-group social learning.

For personal growth and responsible development of human relations, experiences of other people are almost of equal importance as our own experience. When one listens to another person, when one observes him or her with openness, affection, and empathy, one learns from his or her experience almost as much as from their own experience; a child, for example, learns mainly through imitation (Bandura, 1962). At the same time, our experiences are most successfully integrated into our development when we share them with others inside a safe social environment that accepts us openly and attentively (Manski, 1993; Pellerey and Grzadziel, 2011). The in-group social learning can be such an environment, both for sharing experiences and for openly listening to the experiences of others. In our experience, deciding factors that enable this are: topic that is perceived important and necessary to all participants, as described above, and effective communication culture, which will be explained in greater detail later.

The Role of Each Participant

In the group social learning, personal development of the participant and his/her acquisition of practical skills depends on his/her active role inside the group. Roles of the participants within the group are based on their actual needs in real life and not on the group learning program. They cater to the individual ability of each participant. During the group activity, the leading role is given to the person sharing experience or expertise. This role must be given to each group participant at least one time per meeting, enabling the participants to share something they perceive as important, resulting in their own satisfaction, which is reflected in the satisfaction of other participants, who strive to listen with interest and affection.

The hidden risk of the in-group social learning is collective ideologization. Resulting from group program and/or a bad group leadership and atmosphere, it can pull all the participants into a collective process that does not answer participant's individual, concrete needs and does not help with his/her development (Mastromarino, 2013). If this occurs in our case, the informal carers cannot learn to provide better care for their care receivers nor can they develop personally; the only thing that is possible for them in such an environment, is developing into some sort of a "specialists," as defined by the ideology imposed by the program, or into a replica of the group leader.

A second latent risk for the in-group social learning is individualistic spontaneity of the learning process. It occurs if group dynamics are left in the hands of a coincidental individual who (mostly subconsciously) uses the group for the gratification of his/her own needs and exhibition of his/her own abilities, without addressing the goals and needs of the participants (Mastromarino, 2013). Consequently, group participants become increasingly dissatisfied with the program and their role in the group, the atmosphere deteriorates, and an increased drop-out rate of people with an expectation to learn and equally participate in the training is observed.

These potential pitfalls in the in-group social learning can be avoided by:

- A clearly prepared program accessible to all participants and introduced by the group leader (e.g., during the informal carers training specially prepared manuals are used for this purpose; they are given to each participant at the beginning of the training and followed chapter by chapter during the training);
- Rules of effective communication culture within the group, which are clearly stated and known to all participants;
- Competent and responsible moderation of the group by the group leader, in a way that integrates the criteria mentioned above.

In-group social learning methodology is, therefore, neither authoritative nor anarchic, but democratic. It predicts communication between all participants in an orderly manner, with well-defined roles, and with an understanding that each participant bears responsibility for the quality of his/her role.

Working with a methodology of in-group social learning, group leadership demands special knowledge about group work, holistic understanding of a person, and the ability to encourage positive experience in social learning. To achieve that, a group leader has to undergo a special training consisting of theoretical and practical knowledge. As part of the training, he/she also learns how to bring part of his/her story and experience into the program. All of the group leaders up to date have been trained by the author of the method or by one of his coworkers.

Effective Communication Culture

The most crucial tool in reaching group goals during social learning is communication. The quality of communication culture will determine the quality of learning and the atmosphere of the group. In line with the axiom "one cannot *not* communicate," defined by the classic communication researcher Paul Watzlawick, the quality of learning and the atmosphere of the group will be also influenced by nonverbal communication and the acts of participants in the group aimed at each other and/or at the group as a whole (Watzlawick et al., 1967).

Because investment in effective communication culture within the group helps to achieve other goals of social learning, four standard rules for effective communication culture are provided at the front page of each training manual and repeated at the beginning of every training (and in between if needed). The rules are:

1. We attentively listen to everyone without interrupting them.
2. We talk about things within the topic that the group is currently discussing.
3. We share personal experience in the first person singular.
4. Whatever personal information people share within the group, should stay within the group.

During group orientation, these rules are further concretized through practical advice on excellent quality sharing and listening, advice on personal approach toward speakers, and

on meaningful silence. The rules for effective communication we use, are based on research observations steaming from the couple's therapist (Engl and Thurmaier, 1995), positive psychology observation, according to which there should always be several more positive messages than negative ones (Gottman and Declaire, 2001) and active research observations from our practice of in-group social learning.

In-group social learning uses three types of communication: 1. light and pleasant chatting; 2. functional, informative talk; and 3. sharing of personal experiences, realizations, opinions, and emotions. First two are needed in the group for organization and development of atmosphere, while the third one—sharing and listening to the experiences and other deeply personal topics—plays a role in personal development and development of interpersonal relations of the participants.

Effective communication culture in the group exhibits the following traits:

1. Each of the participants can tell and show what they think, feel, or consider meaningful in a clear and polite way.
2. Each participant exhibits empathy and puts effort into communicating his/her thoughts in a respectful way, and in a manner that is understood as they would wish to be themselves.
3. Each of the participants attentively listens to others, so that he/she comprehends what the person speaking wanted to communicate, and therefore not what he/she might assume that the speaker wanted to communicate.
4. All the participants are willing to discuss common things in a way that eventually results in a consensus.

The Enthusiastic Atmosphere in the Group Stimulated by Encouraging Topics

The topic of enthusiasm has become one of the main focuses of modern neuroscientists specialized in pedagogy. Gerald Hüther calls it "doping for mind and brain" (Hüther, 2016). The reward system, a collection of brain structures and neural pathways that are responsible for reward-related cognition, are crucial for the feelings of happiness, energy and motivation, needed for working and learning. A pleasant experience is likely to be repeated, resulting in a formation of new neuronal connections in the brain, enabling the preservation of newly acquired skill or knowledge. Such neuroscientific findings can explain the motivational power of good experiences and the enthusiasm about the positive actions of others for the successful learning (Rizzolatti and Craighero, 2005). They are in line with an ancient observation that enthusiasm or happiness makes people more perceptive emotionally and cognitively.

For a better understanding of the in-group social learning, it is important also to note the findings of the mirror neurons and the role they have in empathic behavior toward others (Iacoboni, 2009). These neuronal cells facilitate empathy toward the person that is responsible for evoking the feelings of enthusiasm. While observing such a person, our brain reacts similarly as if we were enthusiastically performing the act ourselves; in both cases (when mirroring the enthusiasm of others or when experiencing it personally), the learning process feels easy and is successful. Therefore, the relationships that make us feel enthusiastic, result in spontaneous imitation of other person's behavior and internalization of his/her experiences. Such learning ability is especially prominent with young children. However, with the conscious training focused on meaningful experiencing and communication within a group, we can retain and further develop it also later in life.

Abilities to sympathize, empathize, and identify with another are crucial for the development of high-quality interpersonal relations and solidarity (Ryff, 1995). Even the abundance of rationally accumulated knowledge about human relationships or sincere declarations about the importance of acceptance and equality is ineffective if there is an absence of empathy in interpersonal and collaborative relations. Personal development and strengthening of interpersonal relations are predominantly rooted in enthusiasm and joy about other people, about their concrete actions, characteristics, experiences and plans. As mentioned before, this leads to the development of the brain into an efficient tool for internalization of experiences and knowledge. The brain that remains dynamic, continuously shaping and upgrading, makes such development possible also in later age. In line with this, neuroscientist (Spitzer, 2012) compares the brain to the building site, where the things we experience build and strengthen new neuronal connections and networks.

The in-group social learning method helps people retain some of the curiosity, openness, and enthusiasm of childhood. In the circumstances imposed by today's civilization, a person's ability to be enthusiastic about things and people often dulls over time and dies off or takes a turn for pathological development (Freudenberg and Samarkovski, 2014). Both of these traits are fatal for mental, social, spiritual, and also healthy physical personal development and good interpersonal relations. Motivation and enthusiasm are needed throughout all developmental stages of our life and are no less important during our middle and late years as they are during our childhood. Through the in-group social learning people learn to consciously direct attention toward the kind and positive things about themselves and about others. This is important since the focus on the positive facilitates the finding of concrete solutions to the urgent needs of the participants and, in combination with effective communication culture, creates a pleasant and encouraging atmosphere, the importance of which was described above.

The in-group social learning takes place whenever discoveries and experiences are flowing freely among all of the participants in a group. During the development of this method, the team attached a motto to this dynamic process: "all of us are teachers and all of us are students; our differences enrich us." Furthermore, the realization that acceptance and giving are inextricably linked with one another is expressed in the second motto: "If you want to look after Yourself, help the Other; if you want to look after the Other, take care of Yourself!" In such a learning environment, informal carers can learn skills, come to realizations, and shape opinions that enable them to take easier and better care while effectively not forgetting themselves.

Implementation of the In-Group Social Learning Method for Informal Carers Training

The current training program and practical aspects of the in-group social learning methodology are described in a manual used both by leaders and participants—informal carers—during the training (Ramovš and Ramovš, 2018a), and has been presented in Slovenian academic and other publications (Ramovš and Ramovš, 2018b). To preserve its quality, the model is protected by copyright.

Usually, there are around 20 participants. Each of the ten sessions lasts for 2.5 h. And each session is specially dedicated to one of the challenging themes of home care.

The themes are divisible into four general areas:

1. **Understanding of an older family member and communication with him/her**. More than one-fourth of the whole program is dedicated to the skills for better understanding of disabled person and communication with him/her, which is particularly important when the behavior is troublesome or socially difficult due to the illness (e.g., in dementia) (Eggenberger et al., 2012). Humane relationships and communication are the weakest points in the development of modern European long-term care. Understanding that communication is entirely the consequence of a person's perception is a basis for our training and care practice. By directing our attention to a positive aspect of another person, positively experiencing him/her, we exercise our human freedom to the fullest. Various techniques for positive interpersonal perception have been developed as part of the training and participants are encouraged to use them not only during the training but also daily while providing care. The evaluation results show that these topics were the most useful for the participants.
2. **Nursing skills and conscious care for oneself**. Professional physical therapists and nurses take part in the training sessions. The participants learn about practical nursing skills helping them to perform ADL and IADL for the care receiver. These tasks can be physically and mentally very demanding for carers, and the latest professional findings can make them significantly easier. Information about various aids and materials (e.g., nursing bed or adult diapers) and where to purchase them are equally important. Part of the training is dedicated to the preservation of carers' health. Strengthening their physical condition, learning stress and anger management as well as maintaining a sensible attitude in difficulties situations and thinking about timely inclusion of other family members are for carers very important health prevention habits that can be considered and nurtured.
3. **Age-related diseases, dying and grieving.** In each group, there are carers dealing with dementia of their family member. Therefore, one of the sessions is dedicated to the understanding of this illness and to the necessary communication with such an individual (using validation technique). Heart attack and brain stroke can also be reasons for care, as well as hip fracture and another chronic physical, mental, and social illnesses related to aging. In each group some family members have their relatives already in the terminal phase of the illness while others are expecting or even fearing the progress of the illness of the person they care for, making it necessary to talk also about palliative care, dying and grieving.
4. **Resources for carers and formation of local family carers' group**. Resources for carers are rapidly developing. There are day, night, and short-term care services now available. These programs are respite support for informal carers, and with their development, synergistic complementarity of formal and informal care is forming, for the benefit of all. Realistic options and possibilities for the respite of carers within local communities are explored as part of the training. The exchange of experiences on this subject give carers strong psychosocial support and motivation. The option of transfer of the care receiver from home to institutional care is also reflected on in training since it is usually a difficult decision for nearly everyone.

The last session is dedicated to the establishment of a local family carers' group, based on the concepts of self-help and self-organization. Two members of every group are carefully chosen and trained to become group leaders. The family carers' group has sessions once per month, offering to family and other informal carers support in caring and grieving. The supervision work is provided by the Institute, connecting informal carers into a national network of informal carers. The goals of the local groups for family carers are:

1. Mutual support during the often-demanding caregiving period.
2. Continuous training for the provision of quality care in the light of the realization that care receiver's life is coming to an end and that good relationships and communication are central to good care.
3. Support during the grieving period.

When caring and grieving periods are over, many carers become volunteers for good quality aging and intergenerational coexistence in their local environment.

The main prerequisite for successful group leadership of the training for family and other informal carers is proficiency in the in-group social learning method. Limiting the training to lectures and discussions does not justify the time for the participants and costs of the training, as this knowledge is mostly freely available on the internet. Therefore, it is vitally important to actively involve all participants to share their respective experiences and to provide for a good atmosphere that offers emotional relaxation and support as well as strengthens motivation. The participant with an unsolved problem always has a priority in the group process. In the method of in-group social learning, the concept of problem-solving is concrete, personal, and sharing oriented. The latter is achieved mainly by asking: *"Is there anybody experienced in solving a similar problem?"*

It is of critical importance that professional presenters impart their knowledge in a manner that is respectful of the carers' context and learning interests. In cases where presentations dwell on theory and do not engage with practice and carers'

experiences, the carers express futile criticism and negative attitudes. The starting point and the goal of the in-group social learning is effective two-way dialogue between any professional knowledge and any experiences of participants. This can be achieved by good cooperation of group leaders and experts in chosen themes. A group leader trained in the in-group social learning methodology is always assigned for the course of the training. The leader proceeds by inviting experts for specific themes. Each session starts with the so-called "in-circle sharing" where all participants share their respective experiences (if any) concerning the chosen theme. The process is facilitated by the group leader, while the expert listens carefully. This is followed by an interactive presentation of the theme by the expert or by his/her demonstration of required skills. The session ends with a discussion between participants and expert, allowing additional questions and worries to be addressed.

Up till now, close to a hundred family and other informal carers training courses were carried out across Slovenia in Croatia. Numbers of participants attending have risen yearly. After finishing the first course on a local level, positive feedback often impels local authorities to ask for another round.

The next section will explore other benefits and some shortcomings of the in-group social learning method for training informal carers.

EVALUATION OF THE IN-GROUP SOCIAL LEARNING METHODOLOGY IN INFORMAL CARERS TRAINING

In this section, the evaluation study is presented and discussed. To evaluate the in-group social learning method used for informal carers training, a combination of objective and subjective data analysis was performed. Training participants gave a quantitative evaluation of the training in general, of being able to express themselves during the training and of being acknowledged by other training participants—segments very important for the effect of the in-group social learning, as described in the previous section. Furthermore, participants provided a qualitative evaluation of their personal training benefits. As the nature of informal caregiving is very personal and since the in-group social learning method aims at the development and shaping of human personality in a safe, intimate environment, subjective data about personal benefits are of great relevance to gain insight into the efficacy of the training.

For some aspects, evaluation study data were compared with the corresponding data from the national representative research: Aging in Slovenia—Survey on the needs, abilities, and standpoints of the Slovene population aged 50 years and over (Ramovš et al., 2013). This was done for the following areas: analysis of demographic, health, personal experience with care receiving, opinion on informal carers training necessity, and desired way of care receiving. These areas were chosen since their comparison with evaluation study data provides further insight into benefits and shortcomings of the in-group social learning method used for informal carers training as well as indicates potential guidelines for its further development.

Method

Participants

The sample consists of the informal carers that took part in one of the 28 "Trainings for Family and Other Informal Carers financed by Ministry of Labor, Family, Social Affairs and Equal Opportunities" which took place between the years 2010 and 2018 in various towns and boroughs of Slovenia. The sum totaled in 453 individuals (age 23–83; $M = 56.00$; $SD = 10.77$; 92% female).

National representative research of aging in Slovenia originally included 1047 participants (age 50–98; $M = 66.08$; $SD = 10.59$; 59% female) who were determined by Statistical Office of the Republic of Slovenia. As our aim was to compare the data of informal carers that underwent the in-group social learning method used for informal carers training, to non-trained informal carers, all the informal carers among the participants of representative study were selected, resulting in a sample of 200 individuals (age 50–98; $M = 67.37$; $SD = 10.95$; 55.4% female) (Ramovš et al., 2013).

Study Procedure

For data collection, a questionnaire in printed form was used. Participants completed it at the end of the training they participated in. The questionnaire was made up of two sections of items: the first section has been initially part of the instrument, used in aforementioned national representative research of aging in Slovenia, while the second was developed purposely for the training's participants in order to measure their personal experience obtained during the training. The questionnaire with both sections was evaluated by Social Protection Institute of the Republic of Slovenia that also evaluates programs financed by the Ministry of Labor, Family, Social Affairs and Equal Opportunities in the Republic of Slovenia.

In the first section of the questionnaire, the items collected information about informal carers—their demographic data, health status, personal experience with care receiving, opinion on informal carers training necessity and desired way of care receiving.

In the second section of the questionnaire, four training evaluation items were used. One item asked the participant to describe with their own words, which content of the training they consider most useful for themselves. Other items were used to assess the participant's general evaluation of the training, to what degree they felt they could express themselves during training, and to what degree they felt they were acknowledged during training.

Data Analysis

Paper and pencil survey approach was used for data collection. Quantitative data analysis (Chi-square estimations, *t*-test, and descriptive statistics) was done using Excel software. For qualitative data analysis thematic analysis was used following the steps identified by Braun and Clarke (Braun and Clarke, 2006): data familiarization through reading and re-reading; systematically generating initial codes across the whole data set; identifying themes within identified codes; reviewing themes for internal and external validity; and defining and

naming themes. One member of the research team (MR) who had not been involved in the development of the questionnaire, conducted the initial analysis. After the initial analysis was complete, the codes and themes were reviewed and revised by a second and third researcher (JR and AS). The revised analysis was then discussed until consensus was reached.

Informed Consent

All subjects within this sample of participants were informed about the aim of the study and voluntarily answered the items of the questionnaire if they decided to participate in the study. Written informed consent, which also applies to the use of the data for research purposes, was gained from all the participants before data collection. Participation was anonymous.

RESULTS

Gender

In the training participants sample of informal carers the female domination is evident (**Table 1**), while in the Slovenian representative sample, the proportion of female and male informal carers are more equally distributed. The difference is significant [$X^2(1, N = 646) = 141.13, p < 0.01$)].

TABLE 1 | Training participants sample of informal carers by gender and its comparison to the representative sample.

Informal carers:		**Male**	**Female**	**Total**
Training participants	Frequency	26	418	444
	Percentage	**5.9%**	**94.1%**	**100.0%**
Representative sample	Frequency	91	111	200
	Percentage	**44.6%**	**55.4%**	**100.0%**

Age

The average age of the training participants informal carers ($M = 56.0$, $SD = 10.8$) is much lower than the Slovenian representative sample of informal carers ($M = 67.4$, $SD = 11.0$). As the t-test has shown, the difference is significant [$t_{(631)} = 14.04$, $p = 0.000$]. Given the fact that this difference is affected by the differences in the sampling, as the representative sample participants were aged 50+, whereas 30.7% of the training participants were younger than 50, the age-group comparison is more relevant. The age-group comparison of both samples' participants is given in **Figure 1**.

Percentage of informal carers in age-groups are more equally distributed in a representative sample, while in the training participants sample a higher percentage of younger than 70, and a lower percentage of older than 70 can be observed.

Employment Status

The comparison provided in **Table 2** shows the employment status differences between two samples of informal carers. The differentiation was made in two categories—a full-time job (employed) and not employed (unemployed, retired, occasional, or part-time job). This type of differentiation is appropriate for the distinction between informal carers, who are mostly experiencing an intensive lack of time for quality caregiving and informal carers, who usually have enough time for caregiving, but often experience lack of financial income. The results show significant differences between both samples—among training participants informal carers there is a much higher percentage of full time working carers [$X^2(1, N = 594) = 9.30, p < 0.01$].

Civil Status

In **Table 3**, the percentage of single carers and carers with partners are shown in both samples. The difference is small and is not significant [$X^2(1, N = 638) = 0.34, p > 0.05$].

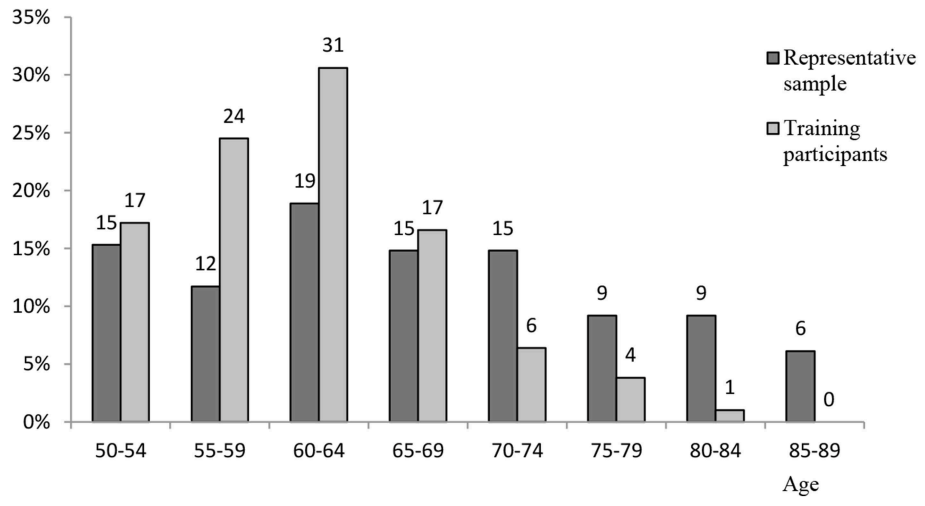

FIGURE 1 | Training participants sample of informal carers by age and its comparison to the representative sample.

TABLE 2 | Training participants sample of informal carers by employment status and its comparison to the representative sample.

Informal carers		Full-time job	Mostly at home	Total
Training participants	Frequency	123	279	402
	Percentage	**30.6%**	**69.4%**	**100.0%**
Representative sample	Frequency	36	156	192
	Percentage	**18.8%**	**81.2%**	**100.0%**

TABLE 3 | Training participants sample of informal carers by civil status and its comparison to the representative sample.

Informal carers:		With partners	Single	Total
Training participants	Frequency	325	113	438
	Percentage	**74.2%**	**25.8%**	**100.0%**
Representative sample	Frequency	144	56	200
	Percentage	**72.0%**	**28.0%**	**100.0%**

TABLE 4 | Training participants sample of informal carers by education level and its comparison to the representative sample.

Informal carers:		Primary	Secondary	Tertiary	Total
Training participants	Frequency	47	245	147	439
	Percentage	**10.7%**	**55.8%**	**33.5%**	**100.0%**
Representative sample	Frequency	65	99	36	200
	Percentage	**32.5%**	**49.5%**	**18.0%**	**100.0%**

TABLE 5 | Training participants sample of informal carers by health status and its comparison to the representative sample.

Informal carers:		No problems	Moderate problems	Major problems	Total
Training participants	Frequency	166	256	16	438
	Percentage	**37.9%**	**58.4%**	**3.7%**	**100.0%**
Representative sample	Frequency	91	99	5	195
	Percentage	**46.7%**	**50.7%**	**2.6%**	**100.0%**

Education

Informal carers that participated in the training have significantly higher education compared to the carers in a national representative sample, that did not participate in training for quality informal care and this difference is important [$X^2(4, N = 639) = 49.75, p < 0.01$]. The percentages are shown in **Table 4**.

Health Status

The differences in health status among a representative sample of carers and training participants are not significant [$X^2(4, N = 633) = 4.46, p > 0.05$]. As shown in **Table 5**, more than half of the carers from each sample experience some health problems.

Personal Care Receiving Experience

Among the training participants sample, there are significantly more carers that have experienced being a care receiver themselves compared to Slovenian representative sample of informal carers [$X^2(4, N = 626) = 10.7, p < 0.01$]. The results are presented in **Table 6**.

TABLE 6 | Training participants sample of informal carers by personal care receiving experience and its comparison to the representative sample.

Informal carers:		None care receiving experience	Care receiving experience	Total
Training participants	Frequency	336	91	427
	Percentage	**78.7%**	**21.3%**	**100.0%**
Representative sample	Frequency	178	21	199
	Percentage	**89.4%**	**10.6%**	**100.0%**

TABLE 7 | Training participants sample of informal carers by desired way of care receiving and its comparison to the representative sample.

Informal carers:		Informal care receiving	Formal care receiving	Total
Training participants	Frequency	262	124	386
	Percentage	**67.9%**	**32.1%**	**100.0%**
Representative sample	Frequency	111	78	189
	Percentage	**58.7%**	**41.3%**	**100.0%**

TABLE 8 | Training participants sample of informal carers by opinion on the necessity of training for all informal carers and its comparison to the representative sample.

Informal carers		Training necessary	Training not necessary	Total
Training participants	Frequency	437	2	439
	Percentage	**99.5%**	**0.5%**	**100.0%**
Representative sample	Frequency	175	15	190
	Percentage	**92.1%**	**7.9%**	**100.0%**

Desired Way of Care Receiving

Compared to the Slovenian representative sample, more carers in the training participants sample would choose informal care rather than institutionalized when given a choice [$X^2(1, N = 575) = 4.66, p < 0.05$]. The results for the desired way of care receiving can be found in **Table 7**.

Opinion on the Necessity of Training Participation for All Informal Carers

Both sample participants also answered the item, asking them about their opinion on the necessity of training participation for all informal carers. As seen from **Table 8**, a higher number of training participants expressed there was a need for training compared to the informal carers in Slovenian representative sample; the difference is significant [$X^2(1, N = 630) = 25.22, p < 0.01$].

Informal Carers Relation to Care Receiver

The first item in the second section included information about who are the care receivers of care provided by the training

participants. As it is evident in **Figure 2**, most of the participants are caring for their mother and many for their father or parents-in-law. Some of them are caring for their partner or their neighbor; other answers were far less common.

General Evaluation of the Training

The general evaluation of the in-group social learning method-based training by informal carers was very positive (**Figure 3**). The participants mostly responded with the subjective general evaluation answer "very good," the majority of others viewed the training as excellent. Other possible answers were chosen by 1% of the participants or less.

Expressing Themselves on the Training

Next evaluation result is summing the training participants' feedback on how much they felt they could express their experiences and suggestions during the training (**Figure 4**), which is a very important part of the in-group social learning methodology. The majority agreed that they could express themselves. The negative evaluation was rare.

Being Acknowledged During the Training

The participants on informal carers training were also asked to evaluate how much they felt other participants acknowledged their expressed experiences and suggestions during training. The importance of this was presented in the in-group social learning methodology section. The results are shown in **Figure 5**. As is evident in the diagram, the majority of participants agree or agree entirely that they felt acknowledged during the training.

Perceived Personal Benefits of the Training Participation

In **Table 9**, the categories of perceived personal benefits are presented. As described in the data analysis section, a whole data set was coded and divided into four categories. Many of the participants stated more than one category in their answers. The first three categories are the most relevant for the evaluation of the in-group social learning method, and their contribution will be further presented in the discussion.

DISCUSSION

Several items (1–6 and 10) of the evaluation study collected demographic data, data on participants' health status and their relation to care receiver. Even though these items do not have direct importance for the evaluation of the in-group social learning methodology used for informal carers training, they provided information about the group that has been evaluated. On account of national representative research that collected the same items in almost the same period in a separate sample, it was possible to compare training participants to Slovenian representative sample of informal carers. Since described items were part of the evaluation study, and their results influenced the informal carers training and the development of the methodology, they will be shortly discussed here.

Looking at gender distribution, the results showed a considerable difference in the presence of males between training participants and representative sample. A relatively high percentage of male carers in Slovenian representative sample of informal carers in comparison with other studies (Arber and Ginn, 1995; Dahlberg et al., 2007) and data (Central Statistics Office Ireland, 2012) could be an outcome of the fact that men, unlike women, are more aware of their caregiving. In Slovenia, the patriarchal social patterns are still very present, and women caring for the family members in need is often self-evident. On the other hand, due to these patterns, men might also find it harder to admit that they need help with providing care, which could explain their significantly lower participation rate in training. This area should be further explored with the aim to better understand the role of female carers; however, given the fact that there is a substantial amount of male carers, it is evident that we should aim to find a way to include them in training for informal carers.

According to presented data, there are many carers in Slovenia older than 70 or even 80 years, who mostly do not participate in the training. It is possible that training participation is harder for them due to the higher prevalence of health-related issues among these generations (Ramovš et al., 2013; SURS – Statistical Office of the Republic of Slovenia, 2019). This shows the importance of earlier preparation for caregiving, when one is still capable of participating in the training; as described at the beginning of the article, even if there are no caring responsibilities yet, the likelihood for a person to become carer later in life is getting more significant with population aging, so training should be considered in earlier periods.

Younger carers usually do not have as many health-related problems as older carers. However, they often lack time and experience increased stress levels due to caring responsibilities toward their growing children in combination with full-time employment (Riley and Bowen, 2005). For that reason, employment status comparison was added in this section. Interestingly, the data showed that full time employed carers more often participate in the training compared to unemployed carers. This trend can be explained by the younger age of employed training participants; besides that, employed carers are likely to be better socially included, more informed about the possibilities in their community as well as are likely to be better organized, which helps them to better manage their time. The area should be further explored. However, attention was already given to the number of training sessions needed and time of the day when trainings are conducted, making it possible for the employed carers to participate as well. Despite the ratio difference, the percentage of full-time employment among both samples of carers is still very low, which is consistent with other research results. Informal carers often find themselves in a situation, where they are forced to leave their jobs to be able to care for their family member properly. Even though those carers have more time, they are potentially experiencing a lack of financial income (Pitsenberger, 2006). This knowledge together with the realization that employment status of the training participants differs (which consequently leads to different experiences of caregiving), is very important for the informal carers training group leader, especially when he or she uses the in-group social learning method to address the topics of

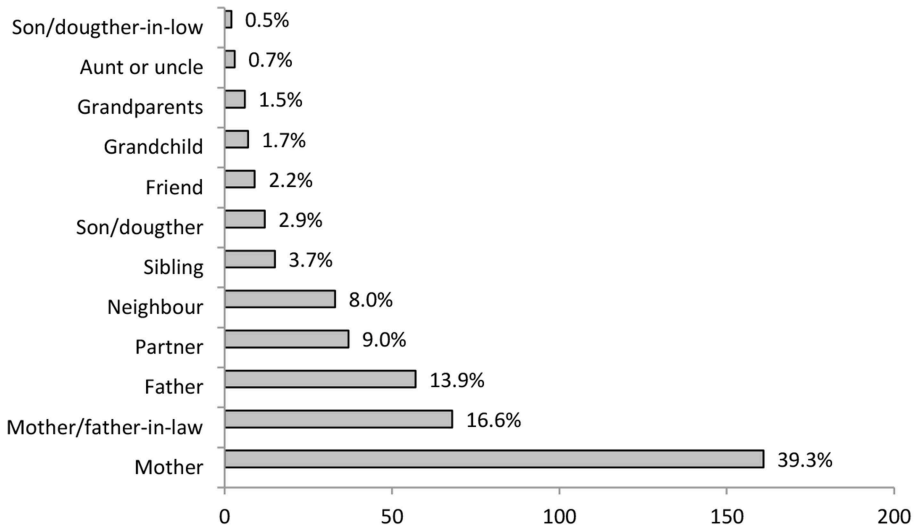

FIGURE 2 | Training participant informal carers relation to care receiver ($N = 410$).

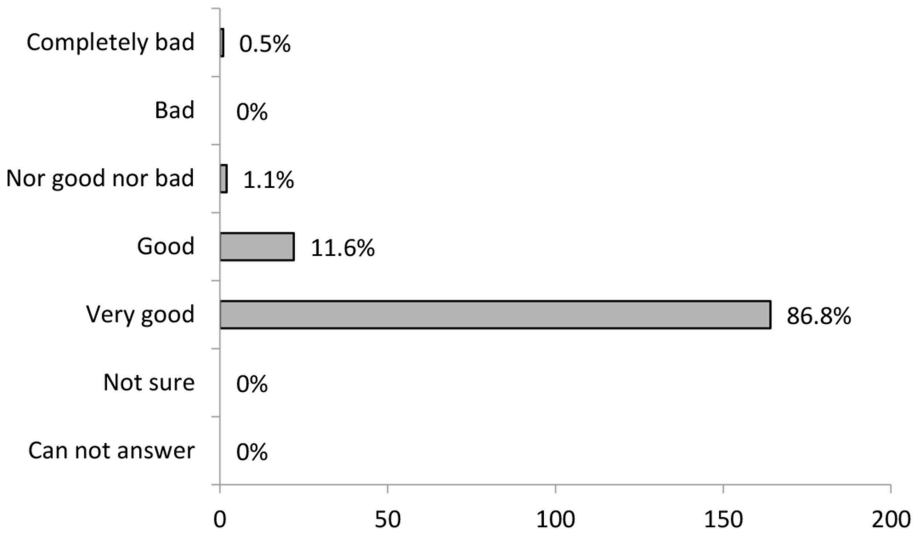

FIGURE 3 | Training participant's general evaluation of the training ($N = 189$).

work-life and care-life balance. This knowledge was also used in the preparation of the training manual.

Furthermore, the training participants usually have a higher level of education, which could be connected with the notion that higher education is often connected with greater awareness of the importance of educating, training, schooling, learning, and obtaining knowledge and skills. Furthermore, higher educated persons may be better at finding information about the training. The area should be further explored; however, given the fact that there is a substantial amount of less-educated carers, we should aim to find a way to include them in training for informal carers.

Assessing the health of informal carers, there were no relevant differences between the two samples. Nevertheless, the results are providing insight into general Slovenian informal carers' health status: more than half of them are experiencing their own health issues. This indicates the potential adverse effect of caregiving on carers health. Some authors claim that the more the caregiving responsibilities are demanding, the more negative effect they potentially have on the health of a carer (Schulz and Beach, 1999), while others argue the complexity of the situation (Beach et al., 2000). However, combining all with just mentioned research data, informal carers training program incorporates topics of empowerment for a healthier lifestyle and care for oneself and should aim to do so in the future.

Data about the identity of the care receiver presented in **Figure 2** is comparable to Slovenian representative sample

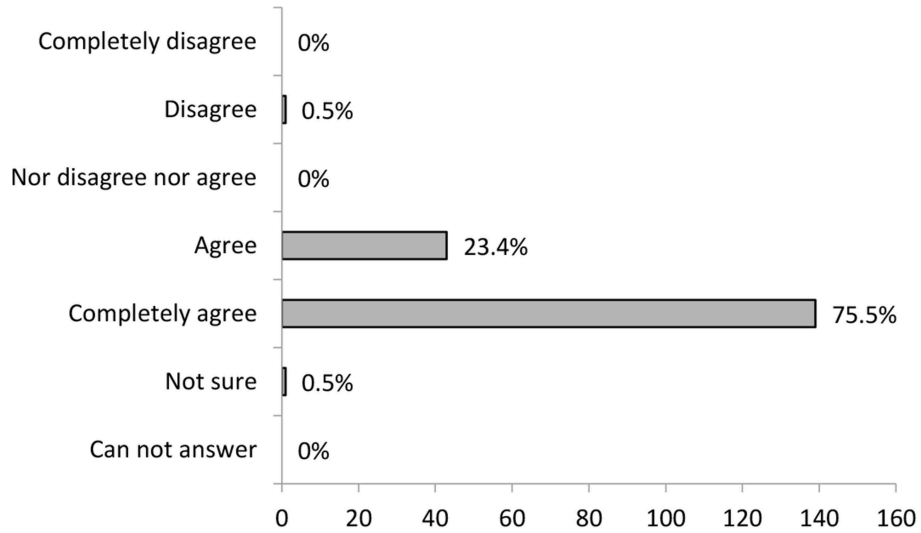

FIGURE 4 | Training participant's evaluation on how much they felt they could express themselves during training ($N = 184$).

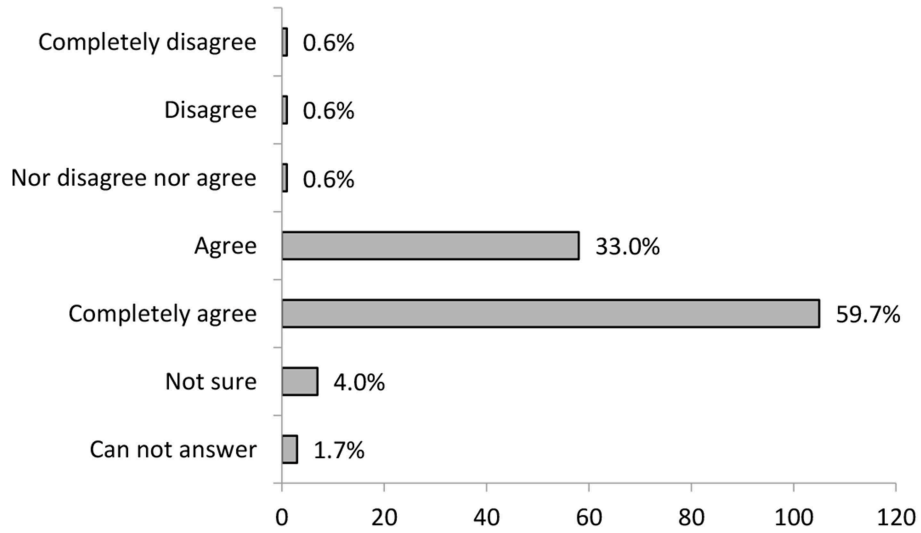

FIGURE 5 | Training participants evaluation on how much they felt they were acknowledged during training ($N = 176$).

data. Similar to most of the European countries (European Commission, 2012), the majority—close to 90%—of care receivers are family members. In line with this and built on practical experience that cares can better self-identify that way, Institute prioritizes the term "family carers" over "informal cares" when working with carers. At the same time, special attention is given to the inclusion of non-family carers (e.g., by naming the training: Training for family and other informal cares). However, for this article, authors consciously decided to use a term informal cares, since it is more comprehensive and increasingly recognized by European institutions.

In contrast with the discussed items, providing valuable information about the carers, the remaining items provided information about their opinions, experiences, and their evaluation of informal carers training. Items seven and nine provided information about the perceived need for informal carers training. Although the number of informal carers that perceived training as strongly needed was high in both samples, it was significantly higher in the sample of training participants. Taking into consideration that the latter have actively decided to participate in the training and mostly had very good experience with it (as can be seen from the results of the evaluation study), such difference is not surprising. More important is a finding that comparing the data, informal carers participating in the training had in significantly higher percent previous personal experience of being a care receiver. It seems likely that carers who know

TABLE 9 | Training participants perceived personal benefits from training.

Category	Prevalent content		Frequencies
1	Knowledge and skills		296 (37.7%)
		Positive communication	
		Nursing	
		Understanding diseases and dementia	
		Palliative care	
		Passing away and grieving	
		Understanding old age	
2	Experiences exchange		179 (22.5%)
		Sharing own experiences	
		Comprehending experiences of others	
		Relating to others' experiences	
		Collective group experiences	
3	Inner strength		168 (21.2%)
		Self-confidence	
		Self-confirmation	
		Social support	
		Social inclusion	
		Stress relief	
		Health strengthening	
4	Approval of training		151 (19.0%)
		Contentment with the training	
		Praise of training's quality	
		Praise of training's guidance	
		Gratitude for training participation	
		Appreciation of themes	
		Total	794 (100.0%)

how it is to be a care receiver more often decide for training participation because they are more aware of the importance of quality care and are therefore willing to invest more effort into achieving it. The subject should be further explored though since it presents possible leverage for training motivation both for carers and authorities.

The last four questions focused directly on the above-mentioned evaluation of the in-group social learning methodology used for informal carers training. General evaluation of the training was very positive. This was shown by the participants' answers on general evaluation item as well as by the qualitative analysis of the answers on personal benefits of the training. In the qualitative analysis, a positive attitude toward a holistic experience of the training appeared as one of the four relevant categories.

Another point of view on the efficiency of the training was provided by the participants' feedback about how much they felt they could share their experiences with others during the training and how much they felt their experiences were acknowledged. The most frequent response was that they agree they felt they could share their experiences and that they agree that what they shared was acknowledged. As explained in detail in the previous section, both activities are essential for the good outcome of the in-group social learning. Their importance was also recognized by training participants, which could be seen from the fact that experience exchange appeared as one of the four relevant categories in the qualitative analysis of the last item. In particular, the experience of being acknowledged for their work gives the informal carers an important recognition in their often-new role and strengthens their motivation for the future. This was also reflected in the inner strength section of qualitative data analysis, where participants highlighted self-confirmation and self-confidence as perceived benefits of the training.

As previously indicated, qualitative data analysis provided the biggest insight into the efficiency of the in-group social learning methodology for this type of training. Participants' perceived personal benefits were divided into four categories. Three of these categories were in close relation to the expected benefits of the in-group social learning method—knowledge and skills, experiences exchange, and personal development in the form of inner-strength.

While it could be argued that we did not objectively measure the amount of acquired knowledge and an increase in communication and other skills, it is clear that participants in great number recognized the importance of positive communication, of understanding the old age and of possibility to acquire knowledge on diseases and palliative care. Since the recognition of knowledge importance is a prerequisite for any successful learning and skill acquisition, we believe it is safe to assume that they have successfully learned something. The likelihood of that is even bigger if we take into account the enthusiastic predisposition toward knowledge of the majority of the participants, importance of which for the learning process was described in the previous section and that could be observed from following examples of answers.

> "*I liked exchanging the experiences because the experiences are real, and you can learn from them better." participant 344.*
> *"I liked the training because it was based on personal experiences and narration of those. From experiences you can learn the most, theory often fails you in practice, in concrete situations" participant 153.*

These two and other representative answers also showed how the in-group social learning helped people bridge the theory and practice. As described before, the connection between knowledge and actual living situation is one of the most significant advantages of the in-group social learning. That this process is not automatic, and it requires a trained group leader was further noted by some of the participants.

> *"Together with the group leader, we collected knowledge from our experiences, (…)" participant 271.*

At the same time, many participants observed that they were not only able to better learn from the experiences of others but also from professionals who were invited to the training.

"Training was very pleasant but also very professional. The moderator was very helpful. Presented knowledge was very practical, and we could ask questions to the nurse, psychologist, and physiotherapist." participant 16.

As described in the method description and as could be seen from the experience exchange category, experience sharing also has a potential to create a positive and private atmosphere that enables further experience sharing, increases the likelihood of knowledge transfer (as described before) and helps people to understand others and relate to them.

"*I found that sharing experiences is very useful. Our group functioned great. I think we were very opened about our experiences … and one could freely share their emotions with others and would feel understood." participant 412.*

These last two things (ability to understand others and relate to them) are very important advantages of the in-group social learning method since they decrease individuals' feelings of isolation in difficult situation (also mentioned under the benefit of social inclusion and social support in the next category). Furthermore, difficult situations that were once limiting can become an opportunity for personal development.

"*I found the training very useful and important because I could hear others' experiences, which made me feel I am not the only one in this kind of situation. Every person has different experiences, and I learned a lot from that." participant 28.*

The potential of the in-group social learning for holistic personal development was also indicated by the subcategories in the inner strength category. Besides already mentioned increase in self-confidence, participants expressed the benefits of the training as stress relief and health strengthening.

Finally, as mentioned at the beginning, learning to relate to the experiences of others develops the human ability to experience empathy and solidarity. Analysis of item eight showed that comparing training participants to the representative sample of informal carers, training participants more frequently decided for (hypothetical) informal vs. formal care for themselves. This indicates, that training participants are experiencing informal care process more positively than carers who did not participate in the training, and so they would, despite all the burden of care they are familiar with, still rather receive care by a family member than a formal care employee—not to burden the family, but because they find the experience of giving and receiving reciprocally. This correlates well with the obtained qualitative data. Still, to better understand this process and possibilities it opens, further research is needed.

To conclude, the evaluation study shows that the in-group social learning method used for the informal carers training has great potential for quality care empowerment and development of new solidarity. The limitations of this study are foremost the lack of the usage of standardized instruments, which could offer more objective evaluation results, the lack of the information about the situation of each individual carer before the beginning of the training and absence of information on carer-care receiver relationship which could give us further insight into effectiveness of this method. Likewise, no information on group leader and the relationship between group leader and participants were systematically obtained. For further research, the potential positive and negative effect of the in-group social learning method-based informal carer's training on the care receivers' health, well-being, satisfaction with life or other emotional and personality aspects examination would be beneficial. Furthermore, the effectiveness of the in-group social learning method could also be compared to other similar methods.

CONCLUSIONS

The review of presented in-group social learning method used for informal carers training has the following policy, practical and theoretical implications:

1. Informal carers provide 70–90% of all care in today's Europe. Training for carers who provide care to frail, chronically ill or disabled old persons, is prerequisite for sustainable and humane long-term care in the time of aging population. As shown by the evaluation study, in-group social learning method used for informal carers training is effective and has, therefore, the potential to be used by educational and long-term care systems.
3. The evaluation study shows that in-group social learning helps participants—informal carers—to gain needed skills and knowledge as well as develop personally. The connection between knowledge and actual living situation is achieved by experience sharing and processing and goes both ways—skills and knowledge needed by participants are simultaneously transferred from and to everyday practice. This method can be used by professionals as a bridge between their knowledge and the practical needs of the participants.
3. In-group social learning method used for the informal carers training develops carers' ability and motivation for caregiving, resulting in the gained capacity for the new solidarity. Therefore, we believe that the method of in-group social learning can valuably contribute to new findings and the development of new methods for the strengthening of post-traditional solidarity.

ETHICS STATEMENT

This study was aprooved by Ethics Commision of Ministry of Health, Republic of Slovenia and in cooperation with Ageny for Public Health, Republic of Slovenia.

AUTHOR CONTRIBUTIONS

AR wrote a review of current international demographic and long-term care situations. JR provided the in-group social learning method description and examples of its implementation for informal carers training. AS provided the data organization, data analysis, and presented the results of the evaluation study. All authors contributed to the discussion and conclusion of the manuscript and its revision. All authors also read and approved the submitted manuscript.

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REFERENCES

Arber, S., and Ginn, J. (1995). Gender differences in informal caring. *Health Soc. Care Community* 3, 19–31. doi: 10.1111/j.1365-2524.1995.tb00003.x

Bandura, A. (1962). "Social learning through imitation," in *Nebraska Symposium on Motivation,* ed M. R. Jones (Lincoln, NE: Univer. Nebraska Press), 211–274.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, New York, NY: Prentice Hall.

Beach, S. R., Schulz, R., Yee, J. L., and Jackson, S. (2000). Negative and positive health effects of caring for a disabled spouse: longitudinal findings from the caregiver health effects study. *Psychol. Aging* 15, 259–71. doi: 10.1037/0882-7974.15.2.259

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualit. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Buber, M. (1979). *Ich und Du (Me and You)*. Auflage: Verlag Lambert Schneider.

Central Statistics Office Ireland (2012). *Profile 8: Our Bill of Health - Health, Disability and Carers in Ireland.* Dublin: Stationery Office.

Clark, F., Fochs Heller, A., Rafman, C., and Walker, J. (1997). Peer learning: a popular model for seniors education. *Educ. Gerontol.* 23, 751–762. doi: 10.1080/0360127970230801

Dahlberg, L., Demack, S., and Bambra, C. (2007). Age and gender of informal carers: a population-based study in the UK: age and gender of UK Carers. *Health Soc. Care Community* 15, 439–45. doi: 10.1111/j.1365-2524.2007.00702.x

Eggenberger, E., Heimerl, K., and Bennett, M. I. (2012). Communication Skills Training in Dementia Care: a systematic review of effectiveness, training content, and didactic methods in different care settings. *Int. Psychogeriatr.* 25, 345–58. doi: 10.1017/S1041610212001664

Engl, J., and Thurmaier, F. (1995). *Wie redest du mit mir. Fehler und Möglichkeiten in der Paarkommunikation (How are you talking to me. Mistakes and opportunities in couple communication).* Freiburg-Basel-Wien: Herder.

Eurocarers (2017). *The Relevance of EU Policy Development to Carers and Vice Versa: An Overview*. Brussels: Eurocarers. Available online at: https://eurocarers.org/publications/the-relevance-of-eu-policy-development-to-carers-and-vice-versa/

European Commission (2005). *Green Paper: Confronting Demographic Change: A New Solidarity Between the Generations*. Brussels: Political Publications from the European Commission.

European Commission (2012). *Long-Term Care for the elderly: Provisions and Providers in 33 European Countries*. Luxemburg: Publications Office of the European Union.

European Commission (2014). *Adequate Social Protection for Long-Term Care Needs in an Ageing Society*. Luxemburg: Publications Office of the European Union.

European Parliament, Council of the European Union, and the European Commission (2017). *European Pillar of Social Rights.* Luxemburg: Publications Office of the European Union. Available online at: https://ec.europa.eu/commission/sites/beta-political/files/social-summit-european-pillar-social-rights-booklet_en.pdf

Frankl, E. V. (1987). *Logtherapie und Existenzanalyse (Logotherapy and Existential Analysis)*. München: Piper.

Freudenberg, B., and Samarkovski, L. (2014). Enthusiasm and effective modern academic. *Austr. Univ. Rev.* 56, 22–31.

Fromm, E. (1976). *To Have or to Be?* New York, NY: Harper and Row.

Gottman, M. J., and Declaire, J. (2001). *The Relationship Cure. A Five-Step Guide for Building Better Connections with Family, Friends, and Lovers.* New York, NY: Crown Publishers.

Hüther, G. (2016). *Mit Freude lernen - ein Leben lang (Learning with Joy - for a Lifetime).* Gottingen: Vandenhoeck & Ruprecht.

Hvalič Touzery, S. (2007). *Supporting Family Carers of Older People in Europe – The National Background Report for Slovenia*. Hamburg: Lit Verlag.

Iacoboni, M. (2009). Imitation, empathy, and mirror neurons. *Annu. Rev. Psychol.* 60, 653–670. doi: 10.1146/annurev.psych.60.110707.163604

Laing, R. D. (2015). *Phänomenologie der Erfahrung (Phenomenology of Experience)*. Frankfurt: Suhrkamp Verlag.

Leichsenring, K., Billings, J., and Nies, H. (eds). (2013). *Long-Term Care in Europe. Improving Policy and Practice.* Houndmills: Palgrave Macmillan.

Manski, C. F. (1993). Dynamic Choice in Social Settings. *J. Econom.* 58, 121–36. doi: 10.1016/0304-4076(93)90115-L

Mastromarino, R. (2013). *La Gestione dei Gruppi: le Competenze per Gestire e Facilitare i Processi di Gruppo (Group Management: The Skills to Manage and Facilitate Group Processes)*. Milano: Franco Angeli.

Mestheneos, E., and Triantafillou, J. (2005). *Supporting Family Carers of Older People in Europe – The Pan-European Background Report*. Hamburg: Eurofamcare Publications.

Pellerey, M., and Grzadziel, D. (2011). *Educare: Per Una Pedagogia Intesa Come Scienza Pratico-Progettuale (Education: Pedagogy Understandings of a Practical-Design Science)*. Roma: LAS.

Pitsenberger, D. J. (2006). Juggling work and elder caregiving: work-life balance for aging American workers. *AAOHN J.* 54, 181–87. doi: 10.1177/216507990605400408

Ramovš, J. (2000). "Skupina in skupinsko delo – prispevek k antropologizaciji teorije skupine in praksi skupinskega dela (Group and Group Work - Anthropological Contribution to Theory of Group and Practice of Group Work)," in *Skupine, Njihova Dinamika in Psihodrama (Groups, Group Dynamics, and Psychodrama),* eds A. Groterath, L. J. Moreno, Toeman, Z (Ljubljana: Inštitut Antona Trstenjaka).

Ramovš, J. (ed.) (2013). *Staranje v Sloveniji – Raziskava o potrebah, zmožnostih in Stališčih Nad 50 let Starih Prebivalcev Slovenije (Ageing in Slovenia: Survey on the Needs, Abilities and Standpoints of the Slovene Population Aged 50 Years and Over. Summary of Findings).* Ljubljana: Inštitut Antona Trstenjaka. Available online at: http://www.inst-antonatrstenjaka.si/repository/IAT_Staranje_v_Sloveniji_povzetek_angl.pdf

Ramovš, J., Lipar, T., and Ramovš, M. (2013). "Oskrba v onemoglosti (Care in Old Age)," in *Staranje v Sloveniji (Ageing in Slovenia).* ed J. Ramovš (Ljubljana: Inštitut Antona Trstenjaka).

Ramovš, J., and Ramovš, K. (2018a). *Družinska oskrba starejšega svojca (Family Care of Older Relative). Priročnik na tečaju za družinske oskrbovalce (Handbook for Family Carers Training).* izdaja. Ljubljana: Inštitut Antona Trstenjaka, 8.

Ramovš, J., Trstenjak, A., and Lamut,. V. (1990). *Doživljanje, temeljno človekovo Duhovno Dogajanje (Experience, Basic Spiritual Process of Human Being)*. Ljubljana: Založništvo slovenske knjige.

Ramovš, K., and Ramovš, M. (2018b). Tečaj za družinske in druge neformalne oskrbovalce (Training for Family Carers and Other Informal Carers). *Kakovostna Starost (Good Quality of Old Age),* 21, 20–46.

Republic of Slovenia. Ministry of Labour, Family and Social Affairs (2008). *The Strategy of Care for the Elderly till 2010 – Solidarity, Good Intergenerational Relations and Quality Ageing of the Population.* Ljubljana: Ministry of Labour, Family and Social Affairs Publications. Available online at: http://www.mddsz.gov.si/fileadmin/mddsz.gov.si/pageuploads/dokumenti__pdf/strategija-_EN-starejsi.pdf

Richtlinien (2016). *Richtlinien des GKV Spitzenverbandes zur Feststellung der Pflegebedürftigkeit Nach Dem XI. Buch des Sozialgesetzbuches (Guidelines of the GKV-Spitzenverbandes for the Determination of the Need for Care After the XI. Book of the Social Code)*. Essen: Medizinischer Dienst des Spitzenverbandes Bund der Krankenkassen (Essen: Medical service of the umbrella association of health insurances). Berlin: GKV-Spitzenverband Körperschaft des öffentlichen Rechts.

Riley, L. D., and Bowen, C. P. (2005). The sandwich generation: challenges and coping strategies of multigenerational families. *Family J.* 13, 52–58. doi: 10.1177/1066480704270099

Rizzolatti, G., and Craighero, L. (2005). "Mirror neuron: a neurological approach to empathy," in *Neurobiology of Human Values. Research and Perspectives in Neurosciences.* eds P. Changeux, A. R. Darmasio, W. Singer, Y. Cristen Berlin Heidelberg: Springer-Verlag.

Ryff, C. D. (1995). Psychological well-being in adult life. *Curr. Directions Psychol. Sci.* 4, 99–104. doi: 10.1111/1467-8721.ep10772395

Schulz, R., and Beach, S. R. (1999). Caregiving as a risk factor for mortality: the caregiver health effects study. *JAMA* 282:2215. doi: 10.1001/jama.282.23.2215

Spitzer, M. (2012). *Digitale Demenz. Wie wir uns und Unsere Kinder um den Verstand Bringen (Digital Dementia. How to Make us and Our Children Ignorant).* München: Droemer Verlag.

SURS – Statistical Office of the Republic of Slovenia (2019). *Data portal SI-STAT: Tables on Demography and Societal Issues.* Available online at: https://pxweb.stat.si/pxweb/Dialog/varval.asp?ma=0868510S&ti=&path=../Database/Dem_soc/08_zivljenjska_raven/17_silc_zdravje/05_08685_splosno_zdravst_stanje/&lang=2

Topping, K. (2005). Trends in peer learning. *Educ. Psychol.* 25, 631–645. doi: 10.1080/01443410500345172

Turner, S. A., and Street, H. P. (1999). Assessing carers' training needs: A pilot inquiry. *Aging Mental Health* 3, 173–178. doi: 10.1080/13607869956343

United Nations (2017a). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables.* New York, NY: United Nations Publications. Available online at: https://esa.un.org/unpd/wpp/Publications/Files/WPP2017_KeyFindings.pdf

United Nations (2017b). *World Population Ageing: Highlights.* New York, NY: United Nations Publications. Available online at: https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2017_Highlights.pdf

Watzlawick, P., Bavelas, J. B., and Jackson, D. D. (1967). *Pragmatics of Human Communication – A Study of Interactional Patterns, Pathologies, and Paradoxes*. New York, NY: Norton.

Yghemonos, S., Alenka, O., and Marta, R. (2018). Neformalna oskrba kot politični izziv (Informal Care as a Political Challenge). *Kakovostna starost (Good Quality of Old Age)*, 21, 70–86.

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The Status of Older Adult Care in Contemporary Ghana: A Profile of Some Emerging Issues

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The paper examines how the healthcare and social care pillars of social policy for aging societies shape inequalities in health and well-being at old age, utilizing qualitative and quantitative datasets. The results intimate the lack of geriatric infrastructure, hence the inadequacy of geriatric care provision for older adults. Systemic problems or gaps existent in Ghana led to private individuals taking advantage of the situation, turning it into an opportunity for service providers. Thus, the evolution of recreational/residential homes in Ghana is situated along three distinct patterns or forms namely the occasional, the adult day care center and residential archetypes. Collectively, these constitute formal and informal care facilities. These are often privately owned and at a cost. The nature of quality of care may be affected by the types of homes available, especially in the globalized cultural setting. A growing number of older adults resort to care homes as an alternative measure. These are discussed from two viewpoints. First, geriatric data generation, the absence of which impedes healthcare provision. Second, cash-for-care policies may exacerbate existing inequalities in care with negative consequences for health and well-being. In short, policies for aging populations are being implemented across Ghana with too little known about their consequences for inequalities in health and well-being in later life. The paper sought to address this knowledge gap by exploring a significant infrastructure by undertaking a systematic examination of how recent policy developments for aging exacerbate or reduce inequalities in health and well-being among older adults. The paper concludes that social policy for aging societies' specific key pillars (healthcare and social care research) offers opportunities for analyzing and understanding internal dynamics including the effects of policy implementation for inequalities in health and well-being at older ages, therefore enabling the identification of strategies to improve older adults' circumstances, without which older adult population will far outpace elder care provision.

Keywords: old age, older adults, geriatric care, healthcare, institutional care homes, social interaction, loneliness, adjustment

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INTRODUCTION

Role of Social Change

Social change has been the factor of transformation in contemporary life worldwide including Africa and Ghana. The latter is fostered by a myriad of drivers. Social change is induced by modernization, urbanization, globalization (Apt, 2012; Kpessa-Whyte, 2018). This, in turn, has necessitated societal and familial changes, which could be explained by social and economic

conditions. The social conditions encompass weakened extended family support system (Aboderin, 2006; Doh et al., 2014; van der Geest, 2016; Dovie, 2018a); inadequate formal support infrastructure (Aboderin, 2006; Dovie, 2018a) and increasing nucleation of the family. Similarly, the neglect of older people (Dovie et al., 2018) may be responsible for the lack of care for them. The economic conditions consist of the occurrence of "brain drain" among doctors and care staff who migrate to developed countries, labor and economic conditions that force women, who are often made responsible for the care of the family to work outside the home (Schatz and Seeley, 2015; van der Geest, 2016; Coe, 2017) among others. All these have implications for geriatric and institutional care particularly for older adults.

Concerns With Care Provision for Older People

Care for older people is a widespread phenomenon. In some high-income countries, there is variable funding for social care; for example, Germany has a special tax to help fund this. In the United Kingdom (UK), social care for patients in institutions is means tested, for example, above a certain level of assets this is self-funded. The same is in the United States. Consequently, this is an issue facing all countries (Robertson et al., 2014). The evolution of the aging population is faster to live in low-and-middle-income countries (LMICs). Eighty percent of older adults will live in LMICs (Agbogidi and Azodo, 2009; WHO, 2017a), including Ghana.

A study conducted in Malaysia observed that older people with education, income and the need for healthcare was associated with healthcare services utilization (Yunus et al., 2017). Hamiduzzaman et al. (2016) also ascertained factors that influenced older female's utilization of healthcare services in rural Bangladesh. They identified deprivation of adequate education, social and economic dependency on males and family, inadequate and ineffectual institutional healthcare arrangements and misappropriation of funds. In a similar study, Hren et al. (2015) revealed that older persons in Slovenia often sought out-patient-department services and hospitalization. The study found that age and education were the factors that influenced the use of healthcare and other related services. Also, worth reiterating is the fact that increase in the population of older adults is occurring along the same timelines as the breakdown in the traditional system of social protection and care (Kpessa-Whyte, 2018) due to urbanization, socio-economic development, and globalization. This has implications for the well-being of older adults and policy.

In sub-Saharan Africa (SSA), a rapidly aging population is presenting challenges to healthcare systems. Doctors need specialized knowledge to be prepared for the increase in age-related medical conditions. Further, older adults are likely to be challenged with physical, mental, and social changes that require adjustment as they attain later life (Martin et al., 2008). These are indicative of an impending burden of elder care. Geriatric care is associated with hospitalization irrespective of the form it takes. A study conducted by Frost et al. (2015) shows that 4% of medical schools in SSA taught geriatrics while 40% had no geriatrics teaching. Additionally, the most significant perceived barriers to geriatric education and the attendant care were a lack of staff expertise (72%), lack of funding (52%), and absence of geriatrics in the national curricula (48%). There are still a large number of medical schools in SSA who do not teach geriatrics. Healthcare needs such as orthostatic hypertension measurement/management, vision assessment, toileting schedule (Colon-Emeric et al., 2018; Sharma et al., 2018) may require comorbidity management. This has implications for the quality of care delivered (Colon-Emeric et al., 2018) to them.

Also, substantial social class differences exist in preferences for activities including perceptions about institutional care. It also has economic effects on these range of possible activities. Some social class differences in activities culminate from differences in what people are taught to prefer whereas others reflect differences in financial capacity (Atchley and Barusch, 2004) notwithstanding the notion of need. The divisions between social classes are becoming wider, not narrower. In the UK, for example, figures from the Equality Trust (2017 cited in Manstead, 2018) show that the top one-fifth of households have 40% of national income, whereas the bottom one-fifth have just 8% (Manstead, 2018). Research by Savage et al. revealed that the differences between the social classes they identified extended beyond differences in financial circumstances. There were also marked differences in social and cultural capital, as indexed by the size of social networks and the extent of engagement with different (cultural) activities, respectively.

The Institutional Care Challenge

Populations around the world are aging rapidly, and this demographic transition is placing new demands on societies to provide comprehensive systems for long-term care at home, in communities or institutions. An institutional home denotes a place of residence for older adults who require continual nursing care and have significant difficulty in relation to coping with the essential activities of daily living (ADLs). In sub-Saharan Africa, 46 million older people live in the region and this number is expected to more than triple (to 165 million1) by 2050. A significant proportion of these people will require long-term care at some point in their lives (De-Graft Aikins and Apt, 2016).

Long-term care can be provided in a range of settings including people's homes and by a range of people. Currently, families provide the most long-term care in sub-Saharan Africa and do so without any organized training or support. Reliance on families alone to provide this care culminates in inconsistent care quality and places a particularly heavy burden on women and girls. Moreover, it may be unsustainable given the rapidly increasing number of older people (WHO, 2017a, p. 1). WHO's (2017b) "Global Strategy and Action Plan on Aging and Health" (1) calls on all countries to develop a system of long-term care. The Strategy stresses that no single system of long-term care can be applied in every setting, even in countries with similar resource constraints. Governments need to take into account the number of older people as well as their need for long-term care, existing models of service delivery, the availability, and skills of unpaid caregivers.

Demographic trends including slowed fertility, the killing of the middle generation by HIV/AIDS and an aging population have led to a "care deficit" for the young and old. Those who fill this care deficit are often women, and in many cases, older women (Schatz and Seeley, 2015). As reported elsewhere, 60% of AIDS orphans in Zimbabwe, South Africa, and Namibia live with grandparents (Apt, 2012). The majority of South African HIV caregivers in one study were female (68%); of these, 23% were 60+ (Steinberg et al., 2002). Therefore, age and gender come together to shape the experience of care.

Gender assists in the definition of how care is framed, who provides it and how it is experienced. In other words, gender determines who gives care and who receives the same (Schatz and Seeley, 2015). In East and Southern Africa, both men and women live with impacts of the care deficit. However, sexual division of labor has meant women predominantly fill the void in care (Oppong, 2006). Cultural beliefs about "maternal instinct" and men's "natural" roles as breadwinners have led to assumptions that women are better suited to the daily care of the young, old, and sick, while men are supposed to provide financial assistance.

For example, women (and men) may see care for an aging or sick husband as a continuation of "wifely duties." Likewise, caring for the young or sick may not be reported as care work, as it fulfills routine family expectations and obligations (Schatz and Seeley, 2015). On the other hand, men's physical and emotional care work is often more visible. Because men's care work is further outside men's normative familial roles, it is more likely to be perceived as care work and reported as such.

The Westernization and/or modernization of our society has resulted in the challenge of caring for older people. With the increasing rate of population aging and increased life expectancy, the need for institutional homes may be required as a supportive measure. The upsurge in need for an institutional support system for older adults in Ghana is becoming imperative due to their inability to care for themselves, loneliness due to the loss of family relations including social change, the lack of spouses and children, modernization, urbanization, migration, multiple careers including busy work schedules. These factors have all made care for older people an impending challenge. Older people take up residence in institutions. This implies that social care even in a number of Western countries is means tested, which is a key issue going forward (e.g., responsible for a considerable amount of bed blocking in UK hospitals) (Robertson et al., 2014), whereas in developing countries such as Ghana, it is not means tested as yet, perhaps because state institutional homes are non-existent. Besides, older adults requiring care are still looked after within the informal structure of the family (Apt, 2012) in some LMICs.

There is also an increase in the number of neglected, abused, and abandoned older adults. Further, the modern economic system has projected old age as a social problem. In developed countries, when older people become handicapped by virtue of illness and disability, they take up residence in institutional homes. However, such facilities are not extensively provided in developing countries. As a result, older people are cared for at home. The situation may be different in the near future, necessitating taking refuge in institutional homes. These homes may be classified as formal and informal, which may draw on paid and unpaid labor (Daly et al., 2015).

Relocation adjustment in nursing homes Lee (2010) purports predictors such as self-efficacy, self-reported health, preconception about nursing homes, emotional support from staff and other residents, family satisfaction and general satisfaction with the facility in question. Nursing homes are a relatively new phenomenon in the Ghanaian context. People do not cope or adjust to aging or old age in isolation. Instead, they do so in the company of others who provide social and emotional support. This may depend on the financial independence and sacrificial investments in their children, who may become adults with the moral duty to support their aged parents (Doh et al., 2014; Dovie, 2018a). This implies that prior lifestyle determines to a great extent the quality of care and support older adults are accorded, and when it becomes inevitable for them to depend on others.

There exists universal healthcare (such as in South Africa and countries such as Namibia), where elements are free such as in government/faith hospitals and facilities, and the extent of co-pay afterward (Ataguba and Akabili, 2010). Ghana operates the National Health Insurance Scheme (NHIS) to provide citizens with health insurance. The level of premiums citizens must pay varies according to their level of income. Elements are free particularly for people aged 70+ (Dovie, 2018b, in press), which is a reflection of discrimination even among older adult members. Also, Ghana still has a high burden of infectious diseases and a very growing burden of non-communicable diseases (NCDs) including hypertension, diabetes, and stroke (De-Graft Aikins and Apt, 2016) that must also be tackled within available resources. In other words, "the NHIS prescribes the same basic healthcare without taking into consideration the tertiary healthcare needs of older people especially in the area of non-communicable diseases, such as retention of urine, incontinence, prostrate and colon cancers" (van der Geest, 2016, p. 11).

De-Graft Aikins et al. (2016) posit that research on aging in Ghana has focused on six empirical areas: demographic profiles and patterns of aging; the health status (physical, mental, and sexual) of older adults; care and support for older adults; roles and responsibilities of older adults; social representations of aging and social responses to older adults; and socio-economic status, social and financial protection and other forms of support for older adults. This study falls within the care and support for older adults' framework. Yet, few investigations or little work has been done on geriatric care and institutional homes and adjustment to it in Ghana. Hence, the paper seeks to address the following research questions: How can geriatric care be improved on to ensure adequate related care in Ghana? What has been the evolutionary pattern of institutional homes in Ghana? To what extent do older adults adjust to old age by living in institutional homes? The first and second questions were addressed using qualitative interview data while the third was answered with a combination of quantitative and qualitative data. It is noteworthy that for this paper, institutional home, and nursing homes are used interchangeably.

MATERIALS AND METHODS

The research project began with some concerns and questions about older adults and care system in Ghana. The study used quantitative and qualitative datasets and a cross-sectional design to investigate the healthcare and social care pillars of aging social policy and how these shape inequalities in health and well-being. Use was made of in-depth interviews to explore geriatric care dynamics, while the questionnaire survey provided the necessary data for the development of an understanding of Ghana's repertoire of institutional care homes including qualitative interview data obtained from medical doctors, nurses, near old workers, and retirees.

Site Selection

Accra and Tema were chosen as the study sites because they are typical of major African cities that are privy to extended family support system and associated issues, hence their selection. They were also chosen because they depict the epitome of an urban setting which articulates the deepened prongs of individualization and the reality of the weakened nature of the extended family support mechanism. Also, they present a web of social relations, occupational diversity, a variety of activities as well as various events over time that provides richer and more interesting data (Ghanaweb, 2015), and suitability.

Sample Selection and Recruitment

The study adopted the simple random sampling technique in selecting the respondents. This technique of sampling was used in this research project for two reasons. First, almost old and older adults are a distinct group of study participants. Second, the study purports to identify particular types of cases for in-depth investigation (Neuman, 2004). For the quantitative data, 230 workers in the near old age category and retirees took part in the study. In the case of the qualitative data, 16 in-depth interviews were conducted with a section of individuals with the requisite information. The sampling process entailed the random sampling of working individuals aged 50–59 years (50) in the Tema Metropolis based on a list obtained from Tema Development Corporation. People aged 60+ years (180) were selected using a list obtained from the National Pensioners' Association in Accra and Tema. The samples were selected from a total population of 364 and 700+ respectively. The sample size was calculated using the following formula: $n = 2(Za+Z1-\beta)^{2\sigma 2}/\Delta^2$, with a power of 80% and constant of 1.65 and a $p < 0.05$ (Kadam and Bhalerao, 2010).

Therefore, 270 questionnaires were given out, and 230 were returned. Although the sample size was constrained by resources, 230 observations were selected as adequate for the study. The sample is large enough to help address the research questions accurately. The study also sought to explore the association between living in institutional homes and adjustment to old age based on sex. The usage of the simple random sampling technique means the results are statistically representative and to the general population. Thus, generalizability to the general population is permissible.

Research Instruments

Questionnaire

A questionnaire containing three sections was used in data collection. Section one was on the socio-demographic characteristics namely age, educational level, and ethnicity. The second section explored issues of geriatric concern. Section three comprised social care dynamics were measured with 5-point verbalized scale from "'extremely associated" to "not at all associated." The questionnaire was created based on previous research, input from colleagues and also the study's research interests. Examples of questions that have been previously used in published studies include questions about the perceived older adult care (i.e., relational needs, care homes, and geriatric training) (Frost et al., 2015; WHO, 2017a; Dovie et al., 2018). After the initial pool of questionnaire was written, qualified experts were made to review it, especially for grammatical corrections and accuracy. Before conducting a pilot of the questionnaire on the intended respondents, it was tested on a small sample of 30 individuals following the guidelines of Perneger et al. (2015). Afterward, a pilot test among the intended respondents for initials validation was undertaken. All participants completed the same questionnaire.

Together these were collectively contextualized to fit this study and the Ghanaian scenario. The survey questionnaire instrument's reliability was ensured in diverse ways, namely, facilitation by clear instructions and wording of questions. The questionnaire contained standardized instructions namely "please tick where appropriate." Also, trait sources of error were minimized through interviewing respondents at their convenience. To attain this, interview appointments were scheduled severally. The validity of the survey data was attained following Nardi's (2006) guidelines. The validity of the data was obtained from face-to-face interviews. Also, the survey sought an alternative source for confirmation through further in-depth interviews.

The administration of the questionnaire took the form of face-to-face interviews including self-administration. The face-to-face interviews were conducted in both English language and Ghanaian languages namely Ga, Ewe, and Twi.

Interviews

The sample for the qualitative phase was selected from that used in the quantitative phase as well as other stakeholders—physicians, nurses, social workers, etc. utilizing the purposive sampling technique. Purposive sampling was used for diverse reasons including its importance in the selection of participants who had specific characteristics such as sources of information. The 16 participants were divided into the three planned interviews based on their convenience (i.e., participants' preference of time and location). Participants were excluded if they were younger than 50 years. The interviews were conducted in February 2017, ∼2 months after completion of the questionnaire. The interview themes that emerged were related to the perception of geriatric care training, the emergence of institutional care homes, and suggestions for future studies.

The interviews were designed to gain an understanding of older adults' perceptions regarding geriatric care and social care

dimensions of aging policy. The interviews focused on geriatric care and aspects of institutional care. The interviews lasted ∼45 min. Initially, the researcher reminded participants about the aim of the study and that the discussion would be used to suggest future directions.

Each in-depth interview took the form of a semi-structured interview and was conducted individually in the participant's office or chosen place. The interviews were audio-taped. Face-to-face interviews are endowed with the merit of providing pertinent information while allowing the researcher the opportunity to control the line of questioning (Neuman, 2004).

Data Analysis

Methodological triangulation was deployed to include the combination of methods to understand and explain (Greenstein et al., 2003) geriatric and institutional care. The answered questionnaire were cleaned and serialized for easy identification. The survey data were entered into Statistical Package for Social Science (SPSS) and were analyzed with selected descriptive statistics namely frequencies, percentages, Chi-square statistics, and Cramer's V test.

Transcripts from the interviews were subjected to thematic analysis. Thematic analysis entails the process of encoding qualitative as well as textual information. Despite the strict procedural nature of coding and themes that emerged from constant immersion with qualitative data, Joffe and Yardley (2004) contend that thematic analysis is more exploratory. For the interviews, data analysis was first conducted by the researcher and subsequently by an independent researcher with experience in qualitative data analysis to increase confirmability and dependability. Both researchers ensured dependability by keeping a coding manual, which entailed original extracts from the interviews and definitions of the emergent themes (Johnstone, 2006). Inductive thematic analysis using NVivo10 software was undertaken (Bazeley and Jackson, 2014). Each of the researchers read the scripts in detail, and then individually coded and categorized data from the same interview. Data from the interviews were coded by the researchers and across the entire interview data capturing diverse views. Through comparison, constant refining resulted in a list of themes (e.g., geriatric care challenges, steps in comprehensive geriatric assessment, archetypes of institutional homes in Ghana, institutional residence for older adults, adjustment to old age homes, the aging policy) with their importance determined by frequency, multiplicity of participants' views as well as uniqueness.

RESULTS

Socio-Demographic Characteristics of Respondents

The study population consisted of males (47.3%) and females (52.8%) aged between 50+ years (**Table 1**). The respondents (58%) were married. Most of the respondents had some level of education. On the whole, the highest educational level attained by the majority of the respondents (80.3%) was tertiary education. The discussion above shows that the sample is composed of high proportions of university graduates. Some of them are engaged in paid work (51.3%).

TABLE 1 | Socio-demographics.

Variables	Characteristics	Percentages(%)
Age	50–59	23.9
	60–69	23.9
	70–79	23.9
	80–89	23.9
	90+	4.3
Sex	Male	47.3
	Female	52.8
Education	No-formal	9.2
	Pre-tertiary	17.5
	Tertiary	80.3
Marriage	Married	58.0
	Divorced	23.5
	Widowed	7.5
	Single	11.0
Occupation	Working	51.3
	Not working	48.7

It is worthy of note that the reference universe of the sample is significantly restricted to urban, educated older people.

Qualitative Data: Geriatric Care Dynamism in Ghana

Geriatric Care Challenges

The interview data reflects the myriad of challenges regarding geriatric care for older adults in Ghana encountered from the viewpoint of the services provided to them, such as limited data available concerning health services for older people; the lack of geriatricians or oriented physicians; there are no preferential services in most health facilities; limited staff training in the field of geriatric care including unaccompanied patients often neglected on admission. This challenge may be deeply rooted in relational issues. In terms of training and research, the qualitative data shows that a few educational institutions namely the Ghana College of Physicians and Surgeons offer geriatric fellowship programs. The University of Ghana and University of Cape Coast also have curriculums in geriatrics including undergraduate curriculum in gerontology. The biggest challenge in all these is the lack of political will to pass the aging policy bill into law. Interestingly, this very bill and/or law began its process of enactment in 2003 but has not yet attained its logical conclusion.

The intensity of older adult care challenge has been highlighted by the quote below:

> Health services provision for older adults is an issue of increasing concern, especially in industrialized nations. High rates of institutionalization in older adults' population are attributed to the lack of a comprehensive assessment of the medical, social, functional, and psychological needs of high-risk groups (health personnel).

It is in the light of this that comprehensive geriatric assessment (CGA) is imperative as discussed below.

Comprehensive Geriatric Assessment

The CGA is a systematic approach to collecting data with health status evaluation. It also entails the integration of the functional and medical goals of care in order to improve clinical outcomes as well as patient satisfaction. From the functional dimension, it has been observed that health maintenance in this context cannot be underestimated since aging is associated with the increasing burden of chronic diseases or conditions among other health challenges. These are known as the "geriatric giants comprising incontinence, immobility, instability and nutrition" (physician 1). It is because of this that "falls in old age homes are more prevalent" (nurse 1).

An interview with a fellow shows that "the Ghana College of Physicians and Surgeons has a home care and palliative care vehicle donated by the church of Pentecost" (fellow), which when functional may facilitate care provision for older adults. Another quote intimates that: "educating the caregivers is important in the case of depression, for example" (paramedic1). This shows how caregivers care for older adults as well as manage themselves.

The geriatric care system has specific prerogative requirements and/or goals for both older adults and physicians. On the one hand, older adults and their families are to regain lost function and maintain independence. On the other hand, those of the physicians encompass the diagnosis and treatment of acute medical illnesses as well as the management of underlying chronic diseases.

From a functional perspective, CGA findings and/or analysis are integrated with the patient's functional capacity. It also allows physicians to among other things optimize healthcare outcomes, dependent on multidisciplinary team constituted by the care team, social workers, geriatric nurses, trained nurses, psychologists, chiefs, pastors, pharmacists including physicians.

Steps in Comprehensive Geriatric Assessment

Four distinct steps in CGA pertain, namely medical history; assessment; physical examination and laboratory; care plan or domain. The first step in CGA entails the taking of medical history–presenting complaints provided by the patient, family members, caregivers, or wards. It also involves geriatric reviews of and screening for fall risks, incontinence, abuse, spirituality, memory, depression, sleep, and a host of others. Collectively, these have outcomes for biomedical and social data. The biomedical data comprises nutritional and past medical history, medications, duration of use and adverse drugs. The social dimension of data entails the individual older adult's social status, family support system and documentation of advanced directive such as leaving a will. The second step which relates to the assessment exercise revolves around sleeping nature, diagnosis of spiritual distress, the need for blood transfusion, which some belief system(s) does not support, and a host of others.

The third step comprises physical examination and laboratory, expressed in terms of general examination and visual acuity, heart, breast examination, cardiopulmonary, abdominal, lower body as well as neurologic. The care plan domain relates to geriatric syndromes namely dementia, falls, incontinence, and general geriatric diagnoses such as hypertension, pneumonia, and contextual diagnosis. Medicals pertain to drug inspection; nutrition—continence, defecation, cognition, emotion, mobility; cooperation with care plan and caregivers pertain. This has implications for health maintenance in its entirety. Therefore, it is worth noting that the health maintenance dimension speaks to issues of preventive geriatrics.

Archetypes of Institutional Homes in Ghana

Ghana's (private) institutional home care sector only began to emerge over a decade ago. The interview data shows that the market for this has been created by a myriad of factors namely increase in the population of older adults, increased life expectancy, changing disease patterns, changing family structures as well as inadequate public provision of institutional homes.

Presently, the evolutionary pattern of institutional homes indicates that it exists in three distinct archetypes. First, the occasional archetype which takes the form of a rare phenomenon entails the bringing together of older adults to a social gathering by a lead individual, where they are feted and socially interacted with. It serves as a means of reducing boredom and loneliness, albeit for a short while. It is a form of respite particularly for those who have no one to depend on in terms of social interaction. This archetype of institutional homes does not, however, involve the housing of older adults in a residential facility. Further, quite apart from fostering social engagement, it also fosters the social integration of older people. This form of care may exist alongside the residential or institutional home version of care which seems to be more holistic, sedentary and regular. An example of this can be found "in Ho in the Volta Region, under the auspices of the current Moderator of the Evangelical Presbyterian, Church, executed by delegated individuals. This has been on-going for about 3 years" (retiree 1).

Social interaction with older adults gives them a sense of being a part of the general society while averting stereotypic perceptions about older people. This kind of perception is quite illusive because old age is an inevitable stage such as retirement which every human being who does not die prematurely is bound to experience, perhaps differently. It is not an experience for a select group of people but for all and sundry.

Second, the adult daycare center archetype, which according to the retirees pertains to daycare centers wherein older people visit a given day care center, where they eat and do everything else except sleeping there overnight. In this context, older adults eat, interact with other facility users as well as play games such as ludo, cards and a host of others during the day and then depart to their respective homes at the end of the day. This archetype more extensively keeps older adults busy and away from boredom and loneliness in the same sense as archetype one including keeping them abreast with issues trending in their societies and other societies in general and issues of older people in particular. Thus, keeping them engaged and active with implications for successful aging. This exerts an external influence on older adults while facilitating their adjustment process. The Henri Dei Recreational Center located at Osu in the Greater Accra Region of Ghana

is a typical example of this archetype. HelpAge Ghana also operates a day center for older people 60+. The services it provides comprise healthcare and health screening, recreation, meals (lunch) as well as handicraft training.

Third, all the participants intimated that the residential archetype denotes a real institutional home. It provides both non-medical or social and medical or skilled care including meals. By illustration, it provides residential facilities namely beds for overnight stay overs, social and recreational activities, medical care and/or health professionals (e.g., nurses, doctors, paramedics) as well as social workers. However, the provision of such services by the existing residential archetype is not for free. Instead, mostly patronage is at a fee ranging between 500.00 and 1,500.00 Ghana cedis ($104.84–$315.52) per month per head. This category of nursing homes is presently privately owned in Ghana and tailored to the affordability of the affluent in the Ghanaian society. Currently, it is patronized by parents and/or older family relations of the affluent who appear not to have the time to care for the former personally. Most of these beneficiaries suffer from dementia, mental disorders of diverse forms and a host of others, and who could not be handled within the ordinary family home contexts including not having to employ professionals to care for them in their ordinary family contexts. They may be localized mostly in Accra and Tema as it is in the case of Mercy Mission or have branches across the country as exemplified by CarePlus Ghana.

Generally, institutional care homes are characterized by the process of social engagement and social integration. The occasional archetype is more informal whereas the adult-day care archetype is more formal, although it could be informal in some cases. The first and second archetypes may be said to be in their early forms mostly because they do not provide residential facilities and are therefore not characterized by these features. They do not provide medical care except for social care. This depicts an evolutionary pattern of institutional care homes from a simpler form to a more sophisticated one which the residential archetype depicts. The first two archetypes provide not-for-profit home-like care to older adults. Currently, in Ghana, the residential archetype is formal, yet widely non-governmentally owned. These existing archetypes of institutional homes seek to herald the inception and institutionalization of nursing homes nationwide in Ghana including the need for it irrespective of the acceptance of its existence in the Ghanaian society. This indirectly calls on the state for the need to institute "state-owned" institutional care homes for older people across all the 10 regions of the country. This has become imperative, particularly because of the cost involved in terms of accessing private homes including accessibility broadly to the majority of older people beyond the affluent in the Ghanaian society. Similarly, the affluent may be coerced to patronize state-owned homes dependent on their availability. Significantly, the establishment of state-owned institutional homes will infuse equity into the mode of accessibility to such homes and the varieties thereof.

There is the likelihood that the family members of older people who relocate to institutional homes may not visit them at all, culminating in older people being entirely abandoned. The success of institutional homes may be affected by cultural underpinnings. These issues have been articulated as follows:

> We Africans, we have several and different cultural backgrounds. First, over there they do not stay in families which is very different for us. Second, to get people to work there, it might require people who are very devoted because fancy a home which has 30 or 40 people, come together and live in family homes. However, we ask ourselves whether we can do it here? This is the reason why I feel that at the moment, it is because of our culture and the way we are living here. But over there by their culture, they live alone, and I am wondering whether even family members go to visit them. I am wondering, I do not know. So here, it might be good doing it, but then we might start from a point with people who are devoted to this just course. I know people may go there and may be abandoned halfway, and it will be worse. The only thing is that let us train our children and grandchildren well so that they can know our values well so that they can treat older people well before they die (retiree 2).

This may imply that the family tie is the most important factor for the well-being of older adults. It also seeks to establish a preference for traditional methods of being cared for by the younger generation as well as family members.

The statement below vividly confirms the opposing perspective to adjustment in old age. This validates some of the challenges that may be associated with living in institutional homes. This has been demonstrated by the statement below:

> I wonder if someone can adjust to leaving home to staying in nursing homes, whether that is feasible in our society. Because if you leave your home and move into someone else's house, what you will hear from others and people who are close to you and who talk directly to you will even kill you before your time. This is with regard to the particular change effected. So, to me, I do not think there is a link between these two whatsoever. They are in fact two different things all together. They are two extreme issues. Stay in the family, if you have a good family. In some places, when you stay in your home, and then they cater for you at old age, thank God. If you do not take care, if you are expected to die at 85 years, you will die at 102. But here frustrations, nobody will visit you when you are in an old age home. Do you know loneliness is what kills some people most? At home, even it happens, but at least you will have one or two people to come and visit you. But over there as soon as they know you are there, they would not even come to visit you. You are entirely forgotten. They may even make your funeral for you while you are still alive (retiree 3).

The participants indicated that older adults do not have to live in institutional homes because they could be easily forgotten. Moreover, instead of that, they could even die from loneliness. It is observed that while older adults live in their own homes, they seem to have been forgotten, let alone having relocated to an institutional home. In other words, the injurious effects may far outweigh the positive notion of adjustment. This is because it may pre-dispose its inmates to further neglect. Additionally, these homes must be supported with resources to optimize their functionality. In consequence, it has been argued that:

> There are plenty of examples. You may live in Osu and say I am going to Teshie to be with my cousin. Everybody at Osu will become happy because you are going. When you return, the only thing they will ask you is, so soon you have returned? You see, it is because of the economy. I always say it (retiree 4).

In effect, it is intimated that:

> Out there in these institutional homes, people come to support some of these places, and the government also comes in to support. In fact, people donate as we have in children's homes when children are sent there, even though the parents are alive, they dump them there and forget about them entirely. This is the reason why I say; there could be further neglect (retiree 4).

Quantitative Data: Institutional Residence for Older Adults

There are a variety of residential facilities for older adults that may serve as their places of abode namely institutional homes, own houses, children's houses, extended family houses, houses provided by grandchildren including where ever older adults choose to reside. Out of these, own house (56%) was indicated by the majority of the sample studied (**Figure 1**). Interestingly, the latter option also implicitly refers to all the options mentioned before it. Indicating institutional homes in the above residential facility list may suggest that older adults have the propensity to reside in the institutional home when the need arises. This gives credence to the acknowledgment of the effects of the forces of social change and/or modernization. The results establish how social class shapes the respondents' perceptions of institutional care. In consequence, many of the respondents within the middle and upper classes outlined own houses as an option for residential facilities. All the classes articulated the fact that the options older people may adopt is institutional homes, whereas more lower-class respondents preferred living with children (see **Figure 2** for details). This implies that whereas the middle class proffers institutional care as an option, the lower class looks forward to living with children. The social class thus facilitates alignment with regard to existing changing modes of residence for older adults. In other words, perceptions of social care are influenced by social class.

The Linkage Between Living in Old Age Homes and Adjustment to Old Age

The results intimate that institutional care homes although a new phenomenon in Ghana tends to facilitate adjustment to old age discussed in the section below. Hence, there are two distinct perspectives to this termed adjustment and non-adjustment perspectives. The adjustment perspective demonstrates that not having anyone to care for older adults suggests the need for institutional homes. In assessing the linkage between living in institutional homes and adjustment to post-retirement life, the quantitative data show by the majority of the respondents (57.3%) that institutional homes facilitate adjustment to post-retirement life (see **Table 2** for details). This is because, in institutional homes, older people may feel and have a sense of belonging in the midst of their fellows. It may assist in cutting off stress, boredom, and loneliness. Further, many older adults really do not have relations they go back to after retirement, particularly, the childless ones including those who are neglected. These may be well taken care of, loved as well as the ability to socialize and interact with peers. Older adults may also obtain assistance from or with the support of caregivers in institutional homes enabling them to adjust to life including the conditions in which they may find themselves. Finally, older adults can understand themselves better when they live together.

The Cramer's V test value of 0.57 (**Table 3**), establishes that there is a relatively strong statistically significant relationship between living in institutional homes and adjustment to post-retirement life.

Perhaps, the reason why woman are more inclined (than man) to think institutional homes are good for adjustment to old age is that men and women are affected differently—older women are more likely to say they feel lonely than older men.

The non-adjustment perspective opposes the above-indicated adjustment assertion. Thus, ∼23.0% of the respondents do not believe there is any linkage between living in nursing homes and adjustment to old age. Instead, it is believed that the little pension money is spent in institutional homes, instead of older adults having houses of their own after retirement. Besides, people in society may think that the inmates of institutional homes did not work hard enough to be able to acquire decent accommodation for themselves in life. Circumstances beyond the control of the individual involved may necessitate living outside an acquired house, the expenses of which may be paid by significant others including their children. The preceding perception marks a blatant rejection of the residential home model.

Aging Policy

The voices articulate the fact that "Ghana is quick to sign on to international declarations, for example, 60 years in Ghana, 65–67 years in the west" (near old participant 1). This is interspersed with policy gaps in service provision and laws for older adults. The absence of a structured and consolidated policy environment exacerbates inequalities in older adults' healthcare and well-being. This is reminiscent of a serious omission of older adults' issues in distinctive policy/law instruments. Presently, there is no single policy instrument dwelling on the unique issues related to older adults in its entirety. Policies that address older people's issues are in bits and pieces or scattered across a range of others including the 1992 Constitution, whereas education, children, and youth have concrete policies or laws designated to them. This notwithstanding, the country's population is increasingly aging. This trend depicts a grievous omission of the plight of older adults. The extent of seriousness is here expressed in the following quote: "The sin of commission is as grievous as the sin of commission" (social worker 1). Last but not least, it is worth reiterating the fact that, "attitudinal change is the key thing that is needed for improved aged care going forward" (near old participant 2).

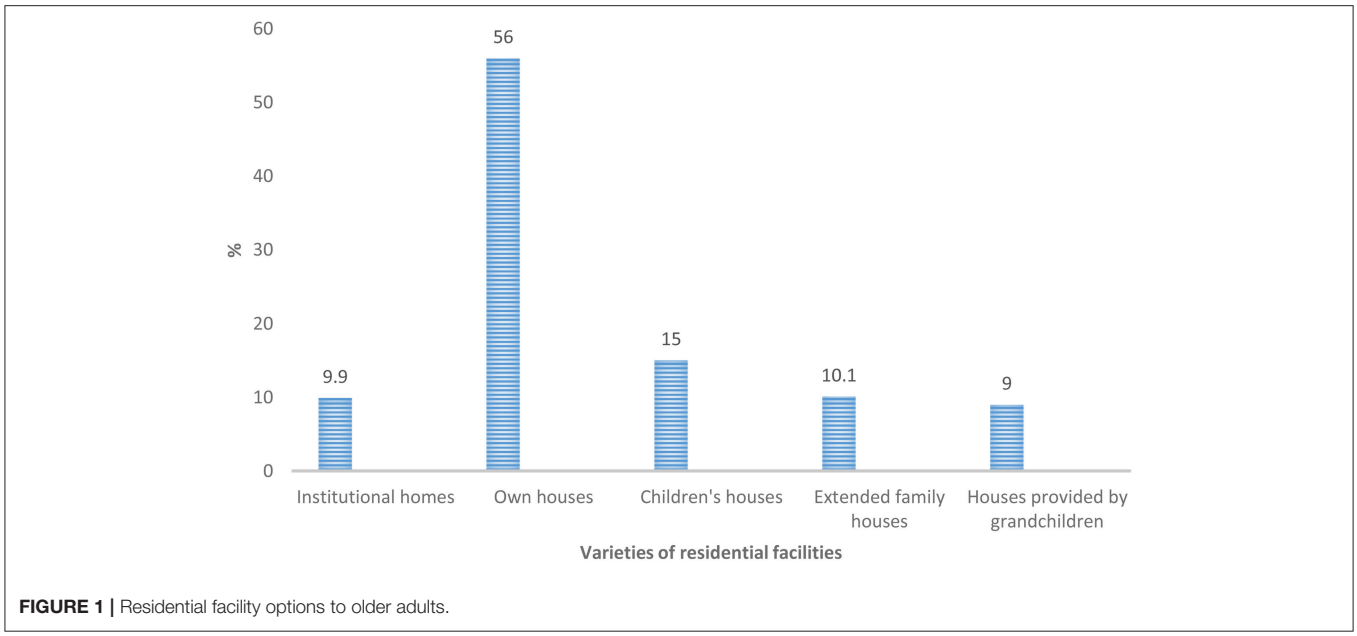

FIGURE 1 | Residential facility options to older adults.

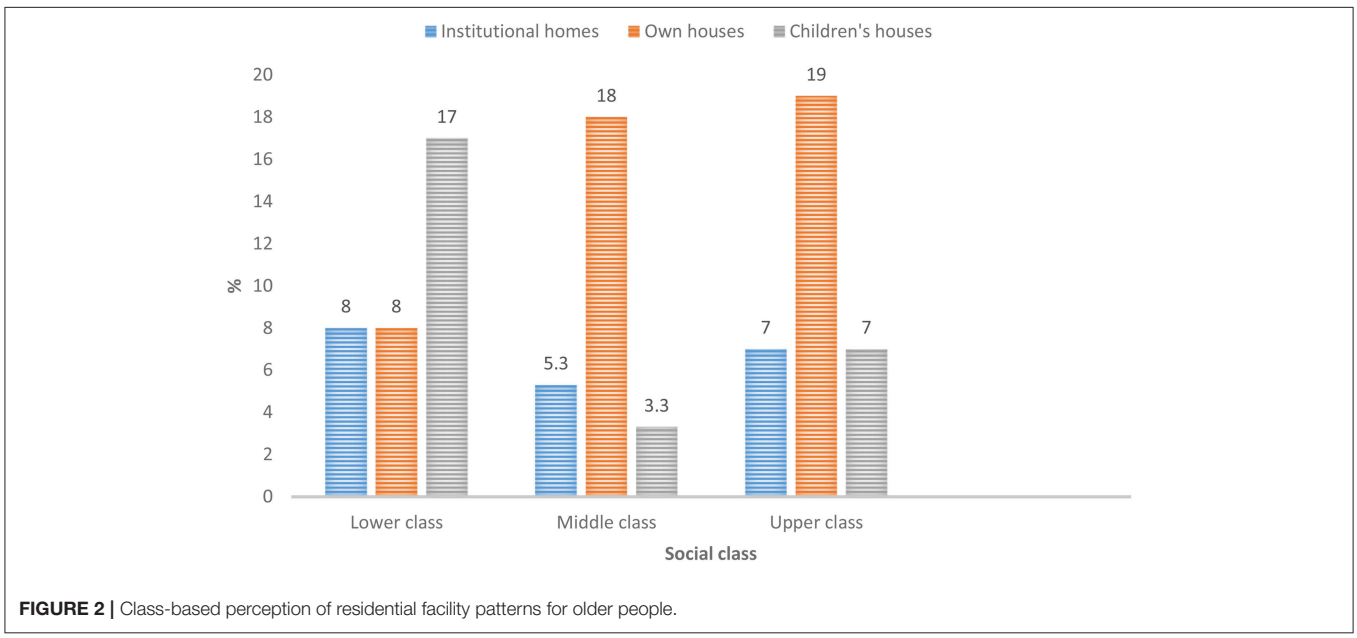

FIGURE 2 | Class-based perception of residential facility patterns for older people.

DISCUSSION

This paper presents findings of a mixed-methods study in relation to care issues affecting the Ghanaian older person, in which the results of quantitative and qualitative analyses shed light on perceptions on two dimensions of care discussed in this paper, namely geriatric and institutional care homes.

The Geriatric Care Concerns

Geriatric care is associated with hospitalization, bringing to the fore the fact that older adults have a myriad of problems with their living conditions such as the absence of segregated care for older persons at health facilities including healthcare expenditures (Dovie, 2018b; Sharma et al., 2018; Ghiara and Russo, 2019). Constraints regarding geriatric care and social services and care have culminated in increased needs for formal income support including care provision for older adults. Also, changes occurring in the older population will further challenge this and other existing arrangements.

The Essence of Institutional Home Care

Institutional homes seem to be a relatively new concept comparatively in the Ghanaian society including some parts of Africa. This may be due to the rate of population aging including

TABLE 2 | Do institutional care homes facilitate adjustment?

Responses	Percentage (%)
Institutional care homes facilitate adjustment	132 (57.3)
Institutional care homes institutional care homes do not facilitate adjustment	98 (42.6)
Total	230 (100)

TABLE 3 | Association between living in institutional homes and adjustment to old age based on sex.

Value	Degree of freedom	Asymptotic significance (2-sided)
Pearson chi-square	75.03	3.052
Cramer's V test	0.57	1.490
N of valid cases	131	

the increasing decline in the extended family system as a mechanism of social support, busy work schedules, childlessness, and the loss of children. In effect, a (non-formal) care industry with workers from the labor market has gradually emerged in response to the dynamics of social change. The emergence of which can be found in three distinct forms such as the occasional, the daycare center and residential archetypes. However, as van der Geest (2016) found a reliable overview of the number and quality of such setups is non-existent.

The quantitative findings show that living in institutional homes correlates positively with adjustment to preretirement life. This is an indication that nursing homes are a life support place for older adults when they have no other option for living in any other place. This is a depiction of adjustment to living in institutional care homes. Adjustment to old age may take diverse forms including material adjustment, social adjustment, and emotional adjustment to home environments, all of which are essential. As a result, it is suggested that institutional homes could initially be made a home care institution for older adults who have no one to care for them, particularly, those who are childless or neglected. Later, this trend could be followed by other categories of older adults. The key concern, however, pertains to quality of care in residential homes.

This study revealed two distinct features. First, Western culture espouses living alone during younger years, while coming together to live in community or family homes. Second, they seem to have the requisite caliber of workers in institutional homes. Since the phenomenon is a new concept in the Ghanaian context, the requisite caliber of workers with the dedication and devotion may be non-existent. This can be developed through training since the need for such caliber of workers is essential. The preceding paragraph emphasizes the fact that while institutional homes may facilitate adjustment to old age, they may also signify houses for the poor or forgotten people

However, there exists a disconnection between the care plan for multifactorial problems including falls and actual resident care. Thus, periodic checks by the Ministry of Gender Children and Social Protection designated staff may help in streamlining such situations. This also signifies the need for state instituted and managed nursing homes nationwide.

Opposed to the adjustment to institutional care homes as indicated earlier, is the perceptions that older people are incapable of adjusting to nursing homes. In other words, contrarily, the non-adjustment perspective espouses the reverse, stressing the myriad of challenges that inmates of the institutional home may encounter. The preceding perception marks a blatant rejection of the residential home model. This is in line with what van der Geest (2016) found that handing over the responsibility to outsiders or professionals in institutions, as has become a common practice in many "Western" countries, is widely rejected in Ghana. The findings from the survey corroborate those from the qualitative data on the issue. In consequence, institutionalized care is regarded as an unfortunate development in the Ghanaian society (van der Geest, 2009). As Van der Geest et al. (2004) wrote, a similar situation occurred among migrant populations in the Netherlands, who once detested nursing homes.

In essence, the study shows that the breakdown in the traditional pillars of social support for older people is paving the way for newer appreciations to elder care provisioning expressed in the emergence of institutional care homes in contemporary Ghana.

Limitation of the Study

The limitation of the study merits discussion. The study failed to investigate adjustment using a nursing home adjustment scale and older people in its entirety as study participants.

The Way Forward

The results of the study have implications for aging social policy. First, long-standing gaps in knowledge about geriatric health needs exist, while a rapidly aging population is presenting challenges to healthcare systems. In preparing for the increase in age-related medical conditions, medical doctors require specialized knowledge. Community health nurses should be used to provide similar services such as those provided by maternal healthcare and immunization for older adults. Aging experts need to advocate the teaching of geriatrics and gerontology in medical schools nationwide.

Second, the most significant perceived barriers to geriatric care were a lack of staff expertise, lack of funding, and absence of geriatrics in the national curricula. Improvements in geriatric education and care should be implemented through local approaches and national policy while appreciating the cultural context, and particularly economic constraints to prepare future doctors for the increasing challenges of an aging population.

Third, medical records can be abstracted by trained physicians, nurses and other medical staff supplemented with a review of facility logs. Fourth, a clinical vignette containing components such as environmental modifications, exercise/rehabilitation, and psychoactive medication reduction may also go a long way to facilitate the quality of geriatric care delivered by hospitals and care homes and received by older adults. These are to be completed by personnel at different

levels—as a facility level measure of care quality. Besides, vignettes seem superior to abstractions especially regarding measuring nursing home quality. When undertaken, it is imperative that the process measures be validated before their adoption by regulators or administrators widely.

Fifth, the structuring and ordering of healthcare services to older adults needs to be regimented along the following lines: segregation of older adults' folders from those of the younger groups and treatment should not follow the first come first served modality but with consideration for older adults. Better still, health facilities need to consider creating separate clinics for older adults. The passage of the national aging policy bill into law is imperative. These go a long way to ensure optimal aging among older adults. Future research may explore the completion of vignettes by the staff most engaged in care provision in nursing home settings. This includes seeking to distinguish between differences in the quality of care between nursing units within the same facility to enable the targeting of nursing improvement efforts to those with lower performance.

Sixth, it is paramount to consider these distinct perspectives and categories for the implementation of effective intervention programs in relation to adjustment to old age in Ghana. Seventh, the caring functions of the family must be strengthened using the provision of resources in support of care for older adults. Eighth, factors of relocation, residence, social support, and facilities should be taken into account with regard to enabling older adults to achieve adjustment to institutional homes in general and old age in particular. Ninth, the government through the Ministry of Gender Children and Social Protection in collaboration with other stakeholders must institute state-owned institutional homes nationwide, which may serve the purpose of contributing to a wide variety of care for older adults at large. Perhaps, it will be worth having a guest house facility as part of such homes where relatives and friends of inmates may visit and stay for a couple of days. This is particularly essential for emotional release and psychological stability. Finally, studies must investigate adjustment using an institutional home adjustment scale.

On the whole, the absence of a structured and consolidated policy environment exacerbates inequalities in older adults' health care and well-being. Ghana's health system is not responsive to the healthcare needs of older adults. Policies in Ghana concentrate more on children, youth and education, hence the key challenge is the "factoring in" of older adults into social policy (healthcare and social care) to ensure some level of balance in the policy domain, albeit within the frame of severe resource constraints. As Lloyd-Sherlock (2002) argues, this may require external donors, non-governmental organizations including the state to undertake priority re-orientation for the onward accommodation of eldercare exigencies. This suggests that adequate state finance of old age support is a feasible policy option. In furtherance to this, its attainment entails the mainstreaming of older adults into primary healthcare in its entirety and social care provision in a composite manner to ensure that the extent of resources and attention they receive is appreciable. This has implications for chronic health conditions including NCDs in later life.

ETHICS STATEMENT

The University of Ghana's Institutional Review Board approved the project. Confidentiality and anonymity were ensured.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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REFERENCES

Aboderin, I. (2006). *Intergenerational Support and Old Age in Africa*. New Brunswick, NJ: Transaction Publishers.

Agbogidi, J., and Azodo, C. (2009). Experiences of the elderly utilizing healthcare services in Edo state. *Internet J. Geriatr. Gerontol.* 5, 1–6.

Apt, N. A. (2012). Aging in Africa: past experiences and strategic directions. *Ageing Int.* 37, 93–103. doi: 10.1007/s12126-011-9138-8

Ataguba, J. E., and Akabili, J. (2010). Health care financing in South Africa: moving toward universal coverage. *Contin. Med. Educ.* 28, 74–78.

Atchley, R. C., and Barusch, A. S. (2004). *Social Forces and Aging, 10th Edn*. Belmont, CA: Thomson Wadsworth.

Bazeley, P., and Jackson, K. (2014). *Qualitative Data Analysis with Nvivo, 2nd Edn*. Thousand Oaks, CA: SAGE Publications.

Coe, C. (2017). "Returning home: the retirement strategies of aging Ghanaian care workers," in *Transnational Aging and Reconfigurations of Kin Work*, eds C. Coe and P. Dossa (New Brunswick, NJ: Rutgers University Press), 141–158.

Colon-Emeric, C. S., Corazzini, K. N., McConnell, E. S., Pan, W., Toles, M. P., Hall, R., et al. (2018). Effect of promoting high-quality staff interactions on fall prevention in nursing homes: a cluster-randomized trial. *JAMA Intern. Med.* 177, 1634–1641. doi: 10.1001/jamainternmed.2017.5073

Daly, T., Armstrong, P., and Lowndes, R. (2015). Liminality in Ontario's long-term care facilities: private companions' care work in the space "betwixt and between". *Compet. Change* 19, 246–263. doi: 10.1177/1024529415580262

De-Graft Aikins, A., and Apt, N. A. (2016). Aging in Ghana: setting priorities for research, intervention and policy. *Ghana Stud. J.* 19, 35–45. doi: 10.1353/ghs.2016.0002

De-Graft Aikins, A., Kushitor, M., Sanuade, O., Dakey, S., Dovie, D. A., and Kwabena-Adade, J. (2016). Research on aging in Ghana from the 1950s to 2016: a bibliography and commentary. *Ghana Stud. J.* 19, 173–189. doi: 10.1353/ghs.2016.0008

Doh, D., Afranie, S., and Bortei-Doku Aryeetey, E. (2014). Expanding social protection opportunities for older people in Ghana: a case for strengthening traditional family systems and community institutions. *Ghana Soc. Sci. J.* 11, 26–52.

Dovie, D. A. (2018a). Systematic preparation process and resource mobilisation towards postretirement life in urban Ghana: an exploration. *Ghana Soc. Sci. J.* 15, 64–97.

Dovie, D. A. (2018b). Leveraging healthcare opportunities for improved access among Ghanaian retirees: the case of active ageing. *J. Soc. Sci*. 7, 92, 1–18. doi: 10.3390/socsci7060092

Dovie, D. A. (in press). The influence of MIPAA in formal support infrastructure development for the Ghanaian elderly. *Int. J. Ageing Dev. Count.*

Dovie, D. A., Ayimey, I. R., and Adodo-Samani, P. (2018). Pension policy dimension to Ghanaian workers' housing needs provision. *Soc. Nov. Modernidades* 35, 30–56. doi: 10.31211/interacoes.n35.2018.a2

Frost, L., Liddie Navarro, A., Lynch, M., Campbell, M., Orcutt, M., Trelfa, A., et al. (2015). Care of the elderly: survey of teaching in an aging Sub-Saharan Africa. *Gerontol. Geriatr. Educ.* 36, 14–29. doi: 10.1080/02701960.2014.925886

Ghanaweb (2015). *Tema*. Retrieved from: http://www.ghanaweb.com/GhanaHomePage/geography/tema.php (accessed June 6, 2018).

Ghiara, V., and Russo, F. (2019). Reconstructing the mixed mechanisms of health: the role of bio- and sociomarkers. *Longitudinal Life Course Stud*. 10, 7–25. doi: 10.1332/175795919X15468755933353

Greenstein, R., Roberts, B., and Sitas, A. (2003). Research methods training manual. Compiled and Edited by Ran Greenstein. Available online at: https://www.academia.edu/3198713/Research_Methods_Training_Manual (accessed March 14, 2018).

Hamiduzzaman, M., De Bellis, A., Kalaitzidis, E., and Abigail, W. (2016). Factors impacting on elderly women's access to healthcare in rural Bangladesh. *Indian J. Gerontol.* 30, 235–260.

Hren, R., Prevolnik Rupel, V., and Srakar, A. (2015). Analysis of health services utilization among elderly in Slovenia. *Value Health* 18, A514–515. doi: 10.1016/j.jval.2015.09.1558

Joffe, H., and Yardley, L. (2004). "Content and thematic analysis," in *Research Methods for Clinical and Health Psychology*, eds D. F. Marks and L. Yardley (Thousand Oaks, CA: SAGE Publications), 56–68.

Johnstone, P. L. (2006). "Reflexivity and transparency in weighting up triangulating and contradictory evidence in mixed methods organisational research," in *Proceedings of the 2nd Qualitative Research as Interpretive Practice Conference 2005*, ed S. Charles (Ann Arbor, MI: University of Michigan Medical Center Journal).

Kadam, P., and Bhalerao, S. (2010). Sample size calculation. *Int. J. Ayurveda Res.* 1, 55–57. doi: 10.4103/0974-7788.59946

Kpessa-Whyte, M. (2018). Aging and demographic transition in Ghana: state of the elderly and emerging issues. *Gerontologist* 58, 403–408. doi: 10.1093/geront/gnx205

Lee, G. E. (2010). Predictors of adjustment to nursing home life of elderly residents: a cross-sectional survey. *Int. J. Nurs. Stud.* 47, 957–964. doi: 10.1016/j.ijnurstu.2009.12.020

Lloyd-Sherlock, P. (2002). Social policy and population ageing: challenges for north and south. *Int. Epidemiol. Assoc.* 31, 754–757. doi: 10.1093/ije/31.4.754

Manstead, A. J. (2018). The psychology of social class: how socioeconomic status impacts thought, feelings, and behaviour. *Br. J. Soc. Psychol.* 57, 267–291. doi: 10.1111/bjso.12251

Martin, P., Kliegel, M., Rott, C., Poon, L. W., and Johnson, M. A. (2008). Age differences and changes of coping behavior in three age groups: findings from the Georgia Centenarian Study. *Int. J. Aging Hum. Dev.* 66, 97–114. doi: 10.2190/AG.66.2.a

Nardi, P. (2006). *Doing Survey Research: A Guide to Quantitative Methods*. Boston, MA: Pearson.

Neuman, W. L. (2004). *Basics of Social Research: Qualitative and Quantitative Approaches*. Boston, MA: Pearson.

Oppong, C. (2006). Familial roles and social transformations: older men and women in sub-Saharan Africa. *Res. Aging* 28, 654–668. doi: 10.1177/0164027506291744

Perneger, T. V., Courvoisier, D. S., Hudelson, P. M., and Gayet-Ageron, A. (2015). Sample size for pre-test of questionnaires. *Qual. Life Res.* 2, 147–151. doi: 10.1007/s11136-014-0752-2

Robertson, R., Gregory, S., and Jabbal, J. (2014). *The Social Care and Health Systems of None Countries*. Available online at: https://www.kingsfund.org.uk/sites/default/files/media/commission-background-paper-social-care-health-system-other-countries.pdf (accessed March 10, 2019).

Schatz, E., and Seeley, J. (2015). Gender, ageing and carework in East and Southern Africa: a review. *Glob. Public Health* 10, 1185–1200. doi: 10.1080/17441692.2015.1035664

Sharma, S., Mueller, C., Stewart, R., Veronese, N., Vancampfort, D., Koyanagi, A., et al. (2018). Predictors of falls and fractures leading to hospitalization in people with dementia: a representative cohort study. *JAMDA*. 19, 607–612. doi: 10.1016/j.jamda.2018.03.009

Steinberg, M., Johnson, S., Schierhout, G., Ndegwa, D., Hall, K., Russell, B., et al. (2002). "Hitting home: how households cope with the impact of the HIV/AIDS epidemic," in *A Survey of Households Affected by HIV/AIDS in South Africa*, ed H. J. Kaiser (Family Foundation). Available online at: http://www.kff.org/southafrica/20021125a-index.cfm (accessed March 10, 2019).

van der Geest, S. (2009). "Listening: friendship according to Kwame Opoku," in *Theory and Action: Essays for an Anthropolo Gist*, eds S. van der Geest and M. Tankink (Amsterdam), 203–209.

van der Geest, S. (2016). "Will families in Ghana continue to care for older people? Logic and contradiction in policy," in *Ageing in Sub-Saharan Africa: Spaces and Practices of Care*, eds J. Hoffman and K. Pype (London: Policy Press), 21–42.

Van der Geest, S., Mul, A., and Vermeulen, H. (2004). Linkages between migration and the care of frail older people: observations from Greece, Ghana and the Netherlands. *Ageing Soc.* 24, 431–450. doi: 10.1017/S0144686X04002302

WHO (2017a). *WHO Series on Long-Term Care: Towards Long-Term Care Systems in Sub-Saharan Africa*. Geneva: WHO Document Production Services.

WHO (2017b). *Global Strategy and Action Plan on Ageing and Health 1*. Geneva: WHO Document Production Services.

Yunus, N. M., Abd Manaf, N. H., Omar, A., Juhdi, N., Omar, M. A., and Salleh, M. (2017). Determinants of healthcare utilization among the elderly in Malaysia. *Inst. Econ.* 9, 117–142.

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The Different Models of Community Eldercare Service in China

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The study examines the development trajectory of community eldercare service and how the local governments pursue the policy practice in delivering community eldercare in China. After reviewing the pilot practice in different localities, this paper will attempt to compare and classify the models of community eldercare service and find out the different features and outcomes of the models. Through the comparative study of community eldercare model, this paper will provide the policy implications for implementing national community eldercare system in the future.

Keywords: community eldercare service, older people, comparative analysis, case study, China

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INTRODUCTION

As the population ages, "older people care" becomes an inevitable global problem. According to the latest China statistic of 2017, the number of aged 60 and above was 240.9 million, accounting for 17.3% of the whole population. The number of population aged 65 and above was 158.31 million, taking up 11.4% of the total population [National Bureau of Statistics (NBS), 2017]. The speed of demographic aging has been increasing over time. The **Figure 1** shows that population ages 65 and above account of 3.70% of total population in 1960 and started to rise gradually, particularly from 2010 the percentage of the population aged 65 and above has increased to 8.4%, and still increase over time. Whereas, the annual population growth started to decrease from 2.76% in 1979 to 1.25% at the 1980s because of the one-child policy. After coming into the twenty-first century, the annual growth rate keeps at a stable low level of around 5%. All these indicators show that China is marching toward deeper population aging. The challenge of eldercare is increasingly severe.

Family support as the traditional older people care could not be adapted to the fast-changing social, economic demands. The greater population mobility, decreasing dependency ratio, generation idea conflicts, as well as attitude change toward older people support to make the family support of, older people less possible in contemporary China. Private eldercare institution is the option of the wealthy aging population. This institutional eldercare is not accessible to the majority of older people because of the limitations such as high cost, entrance restriction, or the traditional value bias of "filial piety." Therefore, both the family support of older people and the private institutional eldercare have disadvantages and problems and they could not be the feasible option for Chinese older people. Facing the challenges of rapid aging, government and society have tried different options to deal with this problem.

Community eldercare is a service mode in which older people living at home and the community provides day care in the form of visiting service or staying in a daycare center. Under this model,

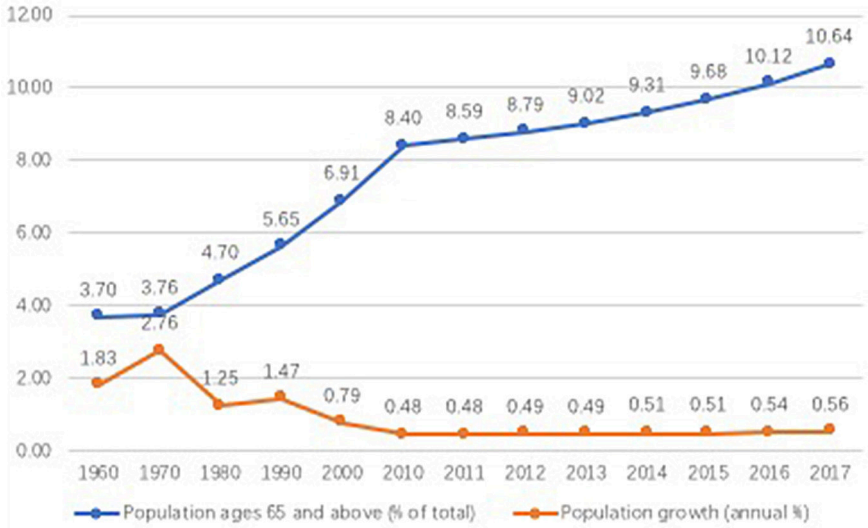

FIGURE 1 | The demographic aging in China (1960–2017).

older people do not need to move out of the home and could get support from family members at times. Meanwhile, they could live in the familiar community and receive the care service from the community. This eldercare service is an innovation combining family support and social support to provide service for older people. Since the 1980s, there is an increasing amount of research on this eldercare model, and there is a consensus that this model could solve the aging problem of China in transition (Peng, 2010; Ding, 2013; Tong, 2015).

RESEARCH RATIONAL AND RESEARCH QUESTIONS

There has been a recent shift in reforming the welfare system associated with the aging population; the focus now is not only on the financial sustainability of the system but also the solution for the senior population. Most developed countries try to meet these needs with a complex system of different service through privatization and decentralization. In this paper, we firstly review the development of the community eldercare service in China and then examine the community eldercare practice mode in the sub-national level: Chongqing, Qingdao, Guangzhou, and Beijing. The policy reviews demonstrate the development trajectory of community eldercare service and national reform direction in the past decades. The local practice cases illustrate the various policy innovations in the system design and implementation. Beyond that, the study also attempts to engage with the welfare service system discussion. The comparison and typology of the community eldercare system based on generosity and accessibility would facilitate the implementation of national community eldercare service in future.

RESEARCH METHOD: COMPARATIVE CASE STUDIES

This study adopts the comparative case study to interpret the implications of similarities and differences across the local cases selected in order to guide further implementation of the national system. Comparative case studies cover two or more cases in a way that produces more generalizable knowledge and compare within and across contexts. Comparative case studies involve the analysis of the similarities, differences, and patterns across two or more cases that share a common goal. An understanding of each case is the foundation for the comparative analysis.

The cases selected including Chongqing, Qingdao, Guangzhou, and Beijing cities. The reasons for case selection are as follows. First, the four cases represent different degrees of demographic aging: until 2016 population aged 60 and above takes up 24% of the total population in Beijing (GOV, 2017). The aging rate; n Chongqing and Qingdao is, respectively, 20.76 and 20.60% (GOV, 2016). Among the four cases, Guangzhou has the lowest aging rate of 18.03% [Guang Zhou Min Zheng (GZMZ), 2018]. Second, the four cases are geographically located in the east, middle, and west of China, which represents different economic development levels and openness of the economy. Third, the four cases represent the dominant community eldercare model emerging at the local level. They are the typical models with obvious and distinguishing features in delivering community eldercare service. The other cities practices are developed on the basis of a variety of these four models. Therefore, this study examines and the four cases in details and attempts to construct a typology of community eldercare based on comparative welfare framework, in a way to demonstrate the general picture of community eldercare service in China and as well as tell differences to give effective implication for future national implementation.

The qualitative and quantitative data are used in comparative case studies. In order to generate a good understanding of China's context as well as each local city, this study adopted the fieldwork visits, interviews, and document analysis to collect various data.

THE THEORETICAL FRAMEWORK OF COMPARING THE COMMUNITY ELDERCARE SERVICE

The comparative case studies require more extensive conceptual and analytic work. In order to join in the comparative welfare discussion, we have to synthesize the across cases beyond the comparison of similarities and differences in practice details. When facing a different variety of systems that are vertically as well as horizontally fragmented, policymakers and researchers need systematic information for policy learning. The typology of different systems is an effective way to compare and learn from the sophisticated institutional design.

The literature on the typology of welfare regime is not novel now, more recent studies shift to classify the specific welfare systems (e.g., the pension system, healthcare system, long-term care system) with the aim to collect more systematized information to do comparison or policy learning. The previous studies attempt to group the long-term care (LTC) system from a different perspective (Anttonen and Jorma, 1996; Wittenberg et al., 2002; Bettio and Janneke, 2004), there is no consensus on the framework and method to classify the LTC system. The information on national divergence in LTC system is harder to obtain than the pension or health care system. Also, the lack of comprehensive aggregated data of LTC is another obstacle to provide a comprehensive typology work. What is more, the literature mostly covers the cases in Europe or other developed countries without considering the case in developing countries. This study is not ambitious to classify the long-term care in developing countries but inspired by the studies of developed countries. It would classify the community eldercare service with the aim to contribute to the knowledge on community eldercare system design features and also engages with the theoretical discussion of welfare system typology.

When design a typology, a selection of variable is crucial. In the following section, we will discuss the selected variables for typology. Comparative welfare research has made much progress in the measurement of welfare state and change. Even though the discussions about the nature of welfare state and reform direction have not reached consensus, describing welfare state diversity on the low level of abstract by using social rights have been accepted. The use of social rights as systematized concepts allows for the identification of different combinations of two dimensions of social rights, accessibility, and generosity (Kvist, 2007). Dra[7] c' the won of welfare regime typology (Esping-Andersen, 1990; Clasen and Siegel, 2007; Kraus et al., 2011; Kraus et al., 2010; Ebbinghaus, 2012); we attempt to form a community eldercare service typology based on the system characteristics. We would examine the dimension of accessibility and generosity and attempt to group the cases into different types. The accessibility explains how easy it is to access to publicly finance services. Those variables explain how easy it is to access to publicly financed service (Brodsky et al., 2003; Da Roit et al., 2007). Two features should be considered: (1) Is the community eldercare service is means-tested? The system only targets the poor is means-tested access. In the system that includes the poor and the non-poor; there can be still some degree of means testing if they exclude the population with high income or vary on the level of benefits. (2) Is the community eldercare service is targeting the users with more severe needs or all the residents within the community? At the one extreme, the minimum requirement does not exist, while at the other extreme, they target the ones with need based on the positive evaluation. These two features are examined as the measure of accessibility. As for the dimension of generosity, we will consider the cost-sharing and benefits level (Kraus et al., 2010; Daatland, 2017), (1) does the private household/service users have to share the financial burden for community eldercare service? Private household not only provide inform care but also substantial financial resources for the care provided in institutions and at home. In our typology, the presence or absence of cost sharing as a measure to imply the generosity of the system. Based on the assumption that person in need of care prefer a regime where the private pay is less, we use the this to measure the generosity of the system. If the system is fully funded by the government is the most generous one, and the cost shared among the recipients are in the medium degree of generosity. The service recipients pay all the cost from the pocket is the lest generous one. (2) how much service the system could provide for users? The intensity of care could be seen as a measure of the generosity of community eldercare system. The more intensity of care it provides, the more service capacity is available Whether the community eldercare system provides skill-intensive or low-skill requirement care services. The skill intensive service and more integrated service (e.g., health care and eldercare integrated) the system provide indicate it is more generous. Moreover, how much time and efforts the community eldercare service offer for the recipients. The more time and efforts imply a higher level of generosity.

THE OVERVIEW OF THE COMMUNITY ELDERCARE SERVICE POLICY DEVELOPMENT

This study collects the community eldercare service policy documents from 2000 to 2017 to examine the development trends of community eldercare service proposed by the central government. All the selected sample files are from central government level, including the legislation, regulation, plan, advice, view, and notice. In order to present the trajectory of development, we go through the policy documents in details as follows (see **Table 1**).

In1996, the Eighth National People's Congress standing committee meeting passed the "senior citizen rights and interest protection law" in the 21st session meeting. This is the only legislation related to the senior citizens, which is also the foundation of the other policies for older people. This legislation emphasizes the family support is the curial part of the eldercare

TABLE 1 | Policy review of community eldercare service.

Stage	Representative documents
Traditional family support is the principle for eldercare	Senior citizen rights and interest protection law (1996) The decision on strengthening eldercare (2000)
The initial exploration of community eldercare in policy and practice	The opinion of accelerating the socialization of social welfare (2000) The notice on the pilot campaign of the socialization of eldercare service (2005)
The institutionalization of community eldercare	The opinion on promoting community eldercare service comprehensively (2008) The 12th 5-year plan for the development of the eldercare service (2011)
Pluralist development in community eldercare	The opinion on encouraging private capital into community eldercare service (2012) The view on accelerating the development of eldercare service (2013) The notice of government purchase of eldercare service (2014) The opinion on promoting the integration of healthcare and eldercare (2015) The notice of public finance supporting home-based and community-based eldercare pilot (2016) The 13th 5-year plan for the eldercare service development and system construction

system [National People's Congress (NPC), 1996]. In 2000, the State Council issued "the decision on strengthening eldercare service" and put forward the development goal: the family played a core role in the eldercare; community service padded basic support and private eldercare as the additional part in the whole system. The eldercare system which includes life assistance, health care, fitness, cultural activities, and legal service would be gradually [State Council (SC), 2000]. In 2000, the Ministry of Civil Affairs, State Planning Commission and other 11 departments issued "the opinion on accelerating the socialization of social welfare[1]" and clarified the basic principle of eldercare system: the family was the core and community provided supportive service and the care institution as the additional part. This is China firstly declared to development community service for older adults, children and disabled [Ministry of Civil Affairs (MCA), 2000]. Since then, Shanghai, Beijing, Dalian, Nanjing, Ningbo, and other cities started to explore the community eldercare service practices. In 2005 the Ministry of Civil Affairs issued "the notice on the pilot campaign[2] of the socialization of eldercare service" and proposed: the eldercare service system should be led by the state and collective investment. The family took the principal responsibility of old people to support. The community service provided basic care for older people and care institution as a supplementary actor to deliver the service [Ministry of Civil Affairs (MCA), 2005]. Since then the community eldercare service as the basic part of the eldercare system had been consolidated in the policy document. All the local government introduced the approach and measures of community eldercare service based on the economic and social condition; some areas even expanded the service to the rural population. In 2008 the National Aging Committee joined with other 10 ministries issued "the opinion on promoting community eldercare service comprehensively," which was the first specific policy for community eldercare. This policy clarified the principle, basic tasks, and measures and pointed out the direction for the development [National Aging Committee (NAC), 2008]. From 2008 onwards, the development of community eldercare came into the institutionalization and standardization stage. The provinces and cities also initiated the community eldercare service practices; meanwhile, the central government strengthened the guides and regulations for the local pilot practices. In 2011, the State Council issued "The 12th five-year plan for the development of the eldercare service" and proposed to give priority to the community eldercare service development. It put forward the aim of achieving the universal coverage of community eldercare service in urban and 80% coverage rate in county and 50% coverage in rural areas [State Council (SC), 2011]. In 2012, the Ministry of Civil Affairs issued "the opinion on the implement measures of encouraging private capital into community eldercare service" and it proposed that the government would adopt the measures of subsidy, government purchase, coordinated governance, government evaluation to encourage the private capital into the community eldercare development in the urban and rural areas with the aim expand the kinds of services and its accessibility [Ministry of Civil Affairs (MCA), 2012]. In 2013, the State Council issued "the view on accelerating the development of eldercare service" and pointed out that by 2020 China would build up the national eldercare service with family, community, and institution jointly deliver care service for the various demands of older people. The central government would make support policies for private enterprise and social organization to join the care provision and delivery [State Council (SC), 2013]. In 2014, the Ministry of Civil Affairs, Ministry of Finance, the National Development and Reform Commission, and the National Aging Committee joined issued "the notice of government purchase of eldercare service" and requested the local government set up the comprehensive rules to improve the government purchase of eldercare service [Ministry of Finance (MOF), 2014]. It could be found that the community eldercare service shift from a single administrative model to pluralist cooperation model, and the government purchase of eldercare become the important development trend. In 2015, the State Council issued "the opinion on promoting the integration of healthcare and eldercare," and it explored the integration of health care agency and eldercare agency, encouraging the eldercare service institution to conduct health care service. Also, it supported the social capital to invest in health and eldercare integrated agencies and encouraged the infusion development of healthcare and eldercare [State Council (SC), 2015]. In 2016, the Ministry of Civil Affairs and Ministry of Finance jointly

[1]Socialization of social welfare means that the welfare system is not only the responsibility of state as in planned economy, multiple actors including social sector, private sector join the welfare service provision and delivery.

[2]Pilot campaign in China context is a special policy process. Given the fact that China is undergoing transition from plan economy to market economy, any reform or innovation started from new. The pilot campaign allows the local governments carry out the pilot practice based on local conditions under the central government's guideline. After several years of pilot, the central government would initiate national program based on local practices and experiences.

issued "the notice of public finance supporting home-based and community eldercare pilot," [Ministry of Finance (MOF), 2016] and it aimed to promote the integration of healthcare and eldercare and improve the eldercare service system [Ministry of Civil Affairs (MCA), 2016]. In the same year, the State Council issued "the view on opening up eldercare service market and improving the care quality," and it put forward the goals of universal coverage of community eldercare service and improving the care quality through the service information platform construction. In 2017, the State Council issued "the 13th 5-year plan for the eldercare service development and system construction," "and it emphasized the adopting of eldercare service information platform, service call system, emergency medical services to implement the "Internet+[3]" eldercare project [State Council (SC), 2017].

With the issue of intensive government policies, community eldercare service had developed all over the country. According to the social service development bulletin in 2015, the number of community eldercare institution and facility had reached to 26,000, an increase of 16.4% comparing to the previous year [Ministry of Civil Affairs (MCA), 2015]. Apart from the expand and increase of community eldercare, there is some important policy shift. We divide the past two decades into four different stages based on different policy priority. From 1996 to 2000, the eldercare system was mainly based on family support with initial explore of community eldercare. From 2000 to 2005, the traditional idea of family-supporting older people had been challenged, and the consensus that family, community, and society should participate in the eldercare had gradually formed. From 2005 to 2011, the community eldercare was proposed in policy and pilot project was encouraged in practice. The community eldercare underwent a fast development with extensive policy coming out in the central and local level, the role of community eldercare gradually replaced the role of family support and became the principal part of eldercare system. At this stage, extensive regulation regarding the system design feature, standards, evaluation procedures also came out to improve the community eldercare service, which demonstrated the normalization and institutionalization of community eldercare in China. Since 2012, more reform trends were found from the policy documents: the pluralist provisions of eldercare demonstrate the private and social sector were encouraged to join the eldercare service system through diverse mechanisms. Also, the integration of healthcare and eldercare were also promoted by the central government. With the development of big data and technology, advancing the community eldercare service to "smart eldercare[4]" through information platform, technology production was the new trend in the recent. From 2012 to present, this stage was characterized by the pluralist and integrated development with new technology update.

THE DECENTRALIZED PRACTICE OF COMMUNITY ELDERCARE SERVICE IN CHINA

After reviewing the policy development in the central level, we will examine the local pilot practices. This study selects four typical practice cases of community eldercare service in different cities, Chongqing, Guangzhou, Qingdao, and Beijing. The four types represent the different local characteristics, ideas, and structure of community eldercare system. Here the four cases will be presented in detail, respectively.

Chongqing Case

In Chongqing case, the municipal civil affair bureau and a municipal aging committee led the community eldercare service construction, they set up community eldercare service center and collaborated with community committee. The eldercare service center was run in the form of the day care center, community nursing home, and call service center. The community committee was in charge of administrative work transferred from grassroots government and recruited laid-off workers and migrant workers to deliver the eldercare service including domestic help service, meal delivery, daily caring, medical re-habitation, and mental comfort (Qian, 2015). The service users are mostly "three-no[5]" and "empty-nest" older people as well as other old people who are entitled social assistance. Until 2016, a total of 180 million Yuan had been invested in building up 200 urban eldercare service centers, 25 community eldercare information platforms as well as 1,000 rural eldercare nursing (GOV, 2016). The Chongqing practice has built up the community eldercare and guarantee older people are getting aging at home and access to basic aging services from the community with different extents of cost sharing (free, limited pay, or paid service).

Guangzhou Case

In 2008, Guangzhou and other eastern coastal areas took the lead in the government purchase of community eldercare service. The funding came from public finance to buy the service of social work organization. After several years of efforts, government purchase of community eldercare service has been adopted in other cities; their practice model is mostly based on the Guangzhou practice and in variety. The specific characteristics of government purchase of community eldercare service include: the urban grassroots government is responsible for setting up community eldercare service center; the department of civil affair hold public tenders from social work organization. The successful bidder signs the contracts with government and delivers service to older people in the community. The service programs include domestic service, meal delivery, entrainment activities, daytime nursing, physical health, mental health, information platform, emergency help, etc. (Chen, 2011).

[3]Adopting internet technology to develop APP for older adults and facilitate them to make doctor appointment, food delivery, home service, etc. by internet technique.

[4]Smart eldercare refers to the use of information technology (IT) to develop information platform for older adults, communities, and institutions to provide effective and efficient eldercare services. The comprehensive service platforms of "eldercare" and "health" connecting service providers, individuals, and families to meet the diverse and multi-level needs of older adults. It is an important reform direction in eldercare.

[5]"Three noes" refers to people who have no ability to work, no income, and no means to support dependents.

Qingdao Case

This case is another type of community eldercare service in which the neighbor mutual aid is the main resource for the community eldercare. This model firstly emerged in Qingdao with the aim to assist the empty nester and older people who live alone. Within this model, the community committee organizes the resources of grassroots government, community, and family to support older residents in the community. In particular, the department of civil affair provides facilities and resources for the senior center construction; the community provides the activity space for the activities. Older people who join the mutual-aid team are entitled 100 Yuan subsidize per month from the government. Each mutual-aid team consists of older residents in the community; the younger help, older and the healthier help, the weaker. This mode follows the principle of "voluntary participation, mutual assist, meet up and engage daily" and integrates multiple resources to improve the life quality of older people in the community until 2016 Qingdao has established 1,800 mutual-aid eldercare teams with more than 10,000 participants (Liu, 2017).

Beijing Case

Beijing as one of the developed cities in China has a more different option in eldercare service development. The retirement community firstly emerged from Beijing. The sun city of Beijing was the first large-scale professional retirement community, which was invented by real estate corporation and the municipal government provided subsidize and tax allowance. The community occupies more than 40 square meters, the interior facilities covering an area of 70,000 square meters. Older people could buy or lease the property in the community and pay the management fees for the access to the high- quality eldercare service. The community provided high quality medical and health service, recreational activities as well as daily domestic help. The resident had to pay the administration fee of 2.5 Yuan per square meter. The rent was 150 Yuan per square meter, and the tenant had to sign the 5-year lease contract with the deposit of 150,000 Yuan (Zhu, 2013).

THE COMPARISON AND TYPOLOGY OF COMMUNITY ELDERCARE SERVICE

The Comparison of the Four Cases

This study is aimed to model the community eldercare service based on the typology method. On the one hand, it would contribute to the knowledge on community eldercare system design; on the other hand, it engages with the theoretical discussion of welfare system typology. We attempt to provide a typology of comprehensive community eldercare service derived from the system features present in different contexts, which are characterized by diverse arrangements of organization, financing and delivering of care. Given the lack of aggregated data of expenditure and provision, this study concentrates on the welfare mix perspective. The concept of the welfare mix has gained particular importance in the field of welfare service. It not only reflects the importance of welfare providers through examining the division of tasks and labor but also account the way how the services are provided, which improve the understanding of welfare service system (Stoy, 2014). This perspective firstly allows for a comprehensive understanding of welfare service beyond policy domain and, second, it takes account the different dimension of welfare service including system characteristics such as principal actors, eligibility criteria, kind of service, financing, and administration mechanism.

Table 2 summaries the distinctive features of each case. The local government assumes primary responsibility for community eldercare under Chongqing and Guangzhou case, a more limited role under the other cases. The formal obligation is assigned to the family in Qingdao and Beijing case, with the government in a subsidiary or residual role. However, as the state is not very generous, the Chongqing case provides the very basic service for an older person, and Guangdong provides service to the people fulfilling the requirements. The low level of care service in Chongqing and the particular principle in Guangdong practice also leaves more responsibility to the family. Also, the family is dominating in eldercare in all cases, perhaps except Beijing case. The family is dominating provider in community eldercare of Qingdao case while the family help is the least intensive if they could afford the eldercare service in Beijing model. It is found that in Chongqing and Guangzhou there is a family-state balance for eldercare, but for the people with extensive needs, the family role will be more prominent in Chongqing case because it only provides very basic care.

As for the kind of service, it could be found that the services are the main instruments in all cases and are provided by different actors (local government, the private sector, and non-profit sector). Services in the Chongqing model is predominated publicly provided by grassroots government or residential community. In Guangdong case, the services and cash benefits are jointly provided, and the service is normally outsourced to non-profit organizations and private providers through government purchase service, service voucher, and subsidies. Private-for-profit services are the main instrument in Beijing case and have been encouraged with a tax incentive. The mutual aid services among older residents is a principle in Qingdao case, which supplements the family care.

The access to services as eligibility criteria are different under the four cases. In particular, Chongqing and Qingdao case offer universal access to the services within the residential community while the former has a better capacity to target the people in need while the latter only provide complementary activities for older residents. In Guangdong, the service recipients could use the service after needs assessment. At last, in Beijing case, only the high-income household and person could afford the extensive and expensive eldercare, healthcare, daily care in the residential community, it is very selective based on the income level.

As for the financing model, Chongqing has the public finance budget to the grassroots government and community, which guarantee the care system has more capacity to sustain. While the special government fund takes the second place in the capacity to support the care system, because the special fund is assigned based on government development goal and preference, it could not be as stable as the public budget fund. Qingdao case has limited local government subsidies for mutual help activities; it

TABLE 2 | The comparison of community eldercare service models in China.

Dimension \ Case	Chongqing	Guangzhou	Qingdao	Beijing
Principle actor	Local government	Local government	Community elder residents	Enterprise
Eligibility criteria	"Three-no" "Empty nester" Disable old	60+ older people	60+ older people voluntary-based	None
Financing mechanism	Public finance budget	Government special Fund	Government Subsidy	Private investment with limited a tax incentive
Administration mechanism	Public/social programming (government regulation on planning service, personnel, estimated need, population size)	The market mechanism (contracting and competition, competitive tendering)	Volunteerism and mutualism (mutual help between residents)	Market mechanism and consumerism (user fee, maximizing user choice)
Kind of Services	Mainly for free basic service: day care, health care, legal advice and etc.	Cash benefits (service voucher and purchased elder care service	Entertainment and social activities chess, singing, outing, chat and etc.	All aspects of service, Basic necessities of routine life, health care, social care service and other activities.

TABLE 3 | The typology of community eldercare service in China.

Cases	Accessibility		Generosity			Typology
	Means testing	Targeting	Cost sharing	Intensity of care	Time and efforts	
Chongqing	Yes	Selective	No	Low	Low	Residual public service mode
Guangzhou	Yes	Universal	Yes	Medium	Medium	Modest universalist mode
Qingdao	Yes	Universal	Yes	Low	Low	Supplementary mutual-aid mode
Beijing	Yes	Selective	Yes	High	High	Comprehensive private mode

is unstable and insufficient. Moreover, the Beijing case has a very limited tax incentive for the private providers, which does not support the service users financially.

Finally, as for the administration mechanism, the Chongqing case has a government model in which the local government in charge of planning, financing, managing, delivering and regulation. Moreover, the Guangdong case adopts the governance model in which the local government contract out the service to the non-profit organization and certain for-profit ones and it only has the responsibility of regulation and quality control. Qingdao case is based on the volunteerism, and the service users mutually manage the activities without the involvement of government or other actors except receiving limited subsidize. Beijing mode is the case purely based on market mechanism, and the government assumes the basic regulation responsibility.

The Typology of the Community Eldercare Service

Based on the analysis framework mentioned above, we classify the four cases into different modes as follows (see **Table 3**):

(1) Lean public service model: in this typology, the government as the dominant actor takes the responsibility of funding, administration, service regulation, and evaluation, also fully involves in the community eldercare system. The service is selective and targets the most vulnerable older people in the community. Also, this type provides the fundamental care for those in need; all the service is a low skill required and time-consuming. However, most of the service is free for the most vulnerable old. Therefore, this model provides minimum basic service for older people in need; we define it as a lean public service mode.

(2) Modest universalist model. Guangdong 's system provides the service for all the citizen aged 60 and above; it is universal access in nature. However, there is a means-tested for the recipients receiving the service allowance. For most users, they could buy the care service with the regulated price. This mode provides a modest level of care service with some non-profit organizations delivering professional service. Given all the feature above, we conclude this type as a modest universalist mode.

(3) Supplementary mutual-aid model. In Qingdao case the mutual-help group and care service is accessible for all the community residents, the financial cost is mutually shared between the participants. While service only plays a supplementary role for older residents, which could not fulfill the absolute needs of older people. Therefore, it is defined as a supplementary mutual-aid model.

(4) Comprehensive private model. In Beijing case, the system is run based on private market mechanism, only the high-income household could afford the comprehensive eldercare service in the residential community, but the level of service is the highest compared to other types. We define this type as a comprehensive private model.

CONCLUSION AND DISCUSSION

The Development Trajectory of Community Eldercare Service in China

From the central policy review of community eldercare service, it could be concluded that the development trajectory is from

a pilot project on the scratch to the comprehensive community eldercare design. In the past two decades, the central policy initiatives blow out from the 2010s, the number of policy-related with community eldercare service is 76, accounting for 80% of the total policy regulations (2000–2015). Particularly in the consecutive past 3 years, we witnessed the massive release of policy regulation in this issue, the number of policies is 58, accounting for 60% of total regulations. Therefore, it could be argued that the community eldercare service underwent a more structured and comprehensive top-level design in recent years and the central government put more efforts to develop the community eldercare. Also, from the representative policy regulation profile, it could be found that the government involves more in the development of community care' China started from zero community eldercare service while mostly relied on family support for older people and the limited government subsidies for older people' nursing institution in the 1990s. Then it evolved into the second stage of privatization and industrialization of eldercare service in the 2000s. However, coming in the 2010s, the government changed the strategy to construct the community eldercare service system and set up the guidelines for the local pilot practice. However, at this stage, there was no national-level development plan. In the new stage after 2010, the Chinese government had a more organized design for the community eldercare service and encouraged the multi-cooperation (public-private and third sector) to deliver the service. The nationally standardized community eldercare system has not been in shape, but the development direction and pattern have been formed clearly.

The Policy Implications of Implementing National Community Eldercare Service in China

Expand Coverage of Community Eldercare Service

Community eldercare will play a more critical role in the context of shrinking family support and demographic aging. The coverage of community eldercare service has reached 72.5% in urban areas, while rural coverage rate is around 30% (Yan, 2014). Even though the national policy for community eldercare has not come out, the pilot practice has been carried out in most of the provinces, and the acceptance of it is higher than before. Expanding the coverage of community eldercare service is crucial for solving the aging issue in China, particularly the extending it to rural areas is more essential.

Multi-Pillar Community Eldercare Service System

After comparing the features of community eldercare service, it is found that the different models have different principle and preference, advantages, and disadvantages. In order to establish a universal national community eldercare service system, it is argued that the multi-pillar system is plausible and catering to the diverse needs of older people. The national community eldercare service design could draw on the different practice models emerging from the local level and build up the multi-pillar community eldercare service system. The zero pillars of could draw on the lean public service model and provide benefits in kinds or voucher for the disadvantaged older people, which is selective coverage with limited government fund. The funding of this pillar from public budget and ensure the minimum care for the vulnerable and disadvantaged old nationwide. The first pillar is basic community eldercare with government planning, funding, and regulation, while non-public sector takes the responsibility service delivery. The eldercare service could be free or with limited pay (depending on the local public finance capacity). The funding of this pillar could come from the health insurance contribution as well as local government budget. The service users are entitled the basic eldercare service provided at the community, such as senior activity center facilities, life assistance programs, health habitation service and so on. These services could be paid by government purchase and the personal health insurance contribution. The second pillar is the private pillar with government regulation and tax allowance or incentives, and the private sector takes the responsibility of funding and service delivery. The customers could use the service by private pay. Given the urban-rural development gap, I could argue that the rural areas at least should be covered by the zero-floor pillar and provide basic support for the most disadvantaged older people.

Coordinated Policy Suggestions for Multi-Pillar Model Development

First, the balance between institutional eldercare and community eldercare. In the first pillar, more institutional care agencies should be introduced into the community; they could provide professional care, medical care, and other activities. It could improve the service quality and sustainable development of community eldercare. The institutional care agencies as the service delivery partners for government provides the primary daycare and healthcare for the community residents.

Second, the balance between the public sector and the private sector. As mentioned before, in the multi-pillar system, the government should encourage and promote the private capital into commercial eldercare service in the second pillar. For instance, public nursing could be privatized and transfer to private eldercare institution. More tax incentives and allowance for the age-friendly property development.

Finally, the balance between formal and informal caregiver. In order to increase the care service level, professional caregivers and nurses are needed for the community eldercare service. Coming with the demographic aging, the silver economy is the shortage of professional staff providing eldercare. Physicians, nurses, social worker, physical therapists, nutritionists as the core service staff of eldercare system are the foundations of building comprehensive community eldercare. The talent policy and incentives for these groups should be implemented to attract them coming to this service industry. Also, integrating the health professional staff into the community care service system on a part-time basis, they could join the social organization, eldercare society or voluntary organization to deliver better service for the community. Also, developing the formal community eldercare service should also take informal care into consideration. In the Chinese welfare regime, the

family support is crucial in the eldercare, how to integrate the family care into the community eldercare system and support the informal care from family is another important direction. The subsidy for family caregivers or means-tested care service provision for the disadvantaged household is an option.

AUTHOR CONTRIBUTIONS

LZ contributed to the design of the research and the analysis of the results and the writing of the manuscript. JY contributed to the data collection from the policy review and part of data analysis.

REFERENCES

Anttonen, A., and Jorma, S. (1996). European social care services: is it possible to identify models? *J. Eur. Soc. Policy* 6, 87–100.

Bettio, F., and Janneke, P. (2004). Comparing care regimes in Europe. *Feminist Econ.* 10, 85–113.

Brodsky, J., Jack H., and Miriam, H. (eds.). (2003). *Key Policy Issues in Long-Term Care*. Geneva: World Health Organization.

Chen, Y. (2011). Exploration and reflection on the mode of community eldercare-taking guangzhou as an example. *She Ke ZongHeng* 6, 51–54. Available online at: http://www.cqvip.com/qk/83217x/201106/38464178.html

Clasen, J., and Siegel, N. A. (2007). *Investigating Welfare State Change. The 'Dependent Variable Problem' in Comparative Analysis*. Cheltenham: Edward Elgar Publishing.

Da Roit, B., Le Bihan, B., and Österle, A. (2007). Long-term care policies in Italy, Austria and France: variations in cash-for-care schemes. *Soc. Policy Administ.* 41, 653–671. doi: 10.1111/j.1467-9515.2007.00577.x

Daatland, S. O. (2017). *Norwegian Long-Term Care: Legacies, Trends, and Controversies*. GIGAPP Estudios Working Papers, no. 1-7, 1-20.

Ding, J. (2013). Home-based care service: misunderstanding, principle and improvement measure. *J. Renmin Univ. China* 27, 20–26. Available online at: http://www.cqvip.com/qk/96478x/201302/45078608.html

Ebbinghaus, B. (2012). *Comparing Welfare State Regimes: Are Typologies an Ideal or Realistic Strategy?* Edinburg: ESPAN.

Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Cambridge, UK: Polity Press.

GOV (2016) *Chongqing Has Completed the Community Eldercare Service Facility Construction of 2016*. Available online at: http://www.gov.cn/shuju/2016-12/09/content_5145476.htm (Accessed March 9, 2016).

GOV (2017). *The Demographic Aging of Beijing Has Been over 24%*. Available online at: http://www.gov.cn/xinwen/2017-10/31/content_5235685.htm (Accessed October 31, 2017).

Guang Zhou Min Zheng (GZMZ) (2018). *Data of Aging Population and Civil Affairs of Guangzhou in 2017*. Available online at: http://www.gzmz.gov.cn/gzsmzj/tjxx/201808/b955183ba2174a6aa387e4cb789e16e8.shtml (Accessed August 16, 2018).

Kraus, M., Monika R., Esther M., Peter W., Gerald R., and Thomas C. (2010). *A Typology of Long-Term Care Systems in Europe*. ENEPRI Research Report No. 91.

Kraus, M., Thomas C., Monika R., Esther M., and Peter W. (2011). *How European Nations Care for Their Elderly: A New Typology of Long-Term Care Systems*. ENEPRI Policy Brief, No. 7, August 2011.

Kvist, J. (2007). Fuzzy set ideal type analysis. *J. Business Res.* 60, 474–481. doi: 10.1016/j.jbusres.2007.01.005

Liu, T. (2017). *Qingdao Mutual-Aid Eldercare Promotes the Development of Aging-Friendly City*. Available online at: http://news.cnr.cn/native/city/20170612/t20170612_523797254.shtml (Accessed June 12, 2017).

Ministry of Civil Affairs (MCA) (2000) *The Opinion on Speeding up the Socialization of Social Welfare*. Available online at: http://shfl.mca.gov.cn/article/zcfg/200809/20080900019761.shtml (Accessed February 13, 2000).

Ministry of Civil Affairs (MCA) (2005). *The Notice on the Pilot Campaign of the Socialization of Eldercare Service*. Available online at: http://shfl.mca.gov.cn/article/zcfg/zcfga/200807/20080700018518.shtml (Accessed March 6, 2005).

Ministry of Civil Affairs (MCA) (2012). *The Opinion on the Implement Measures of Encourage Private Capital into Community Eldercare Service*. Available online at: http://www.gov.cn/zhengce/2016-05/22/content_5075659.htm (Accessed July 24, 2012).

Ministry of Civil Affairs (MCA) (2015). *The Social Service Development Bulletin of 2015*. Available onli8ne at: http://www.mca.gov.cn/article/sj/tjgb/201607/20160715001136.shtml (Accessed July 11, 2016).

Ministry of Civil Affairs (MCA) (2016). *The Notice of Public Finance Supporting Home-Based and Community-Based Eldercare Pilot*. Available online at: http://www.mof.gov.cn/gp/xxgkml/shbzs/201607/t20160721_2512279.html (Accessed July 13, 2016).

Ministry of Finance (MOF) (2014). *The Notice of Government Purchase of Eldercare Service*. Available online at: http://www.mof.gov.cn/zhengwuxinxi/caizhengwengao/wg2014/wg2014010/201504/t20150401_1211565.html (Accessed August 26, 2014).

Ministry of Finance (MOF) (2016). *The Notice of Public Finance Supporting Home-Based and Community-Based Eldercare Pilot*. Available online at: http://www.mof.gov.cn/gp/xxgkml/shbzs/201607/t20160721_2512279.html (Accessed July 13, 2016).

National Aging Committee (NAC) (2008). *The Opinion on Promoting Community Eldercare Service Comprehensively*. Available online at: http://www.lao51.com/articles/38848.html (Accessed Jan 29, 2008)

National Bureau of Statistics (NBS) (2017). *Statistical Bulletin of National Economic and Social Development of 2017*. Available online at: http://www.stats.gov.cn/tjsj/zxfb/201802/t20180228_1585631.html (Accessed February 28, 2018).

National People's Congress (NPC) (1996). *Senior Citizen Rights and Interest Protection Law*. ed National People's Congress, 1996. Available aonline at: http://www.npc.gov.cn/wxzl/gongbao/1996-08/29/content_1479994.htm

Peng, Y. (2010). The literature review of urban home-based eldercare. *Soc. Work* 6, 11–13. Available online at: http://www.cqvip.com/qk/88446x/201006/1001497314.html

Qian, N. (2015). "The Policy Analysis of Community Eldercare Service" *Xue HAi* 1: 94-100.

State Council (SC) (2000). *The Decision on Strengthening Eldercare*. Available online at: http://www.waizi.org.cn/file/22524.html (Accessed August 19, 2000).

State Council (SC) (2011). *The 12th Five-Year Plan for the Development of the Elderly Service*. Available online at: http://jnjd.mca.gov.cn/article/zyjd/zcwj/201109/20110900184411.shtml (Accessed September 29, 2011).

State Council (SC) (2013). *The View on Accelerating the Development of Eldercare Service*. Available online at: http://www.gov.cn/zwgk/2013-09/13/content_2487704.htm (Accessed September 13, 2013).

State Council (SC) (2017). *The 13th Five-Year Plan for the Eldercare Service Development and System Construction*. Available online at: http://www.gov.cn/zhengce/content/2017-03/06/content_5173930.htm (Accessed March 6, 2017).

State Council (SC) (2015) *The Opinion on Promoting the Integration of Healthcare and Eldercare*. Available online at: http://www.gov.cn/zhengce/content/2015-11/20/content_10328.h (Accessed November 18, 2015).

Stoy, V. (2014). Worlds of welfare services: from discovery to exploration. *Soc. Policy Administr.* 48, 343–360. doi: 10.1111/spol.12006

Tong, X. (2015). Developing community-based eldercare in the context of aging. *Explorat. Contend.* 8, 69–72. Available online at: http://www.caoss.org.cn/UploadFile/news/20159281049535560.pdf

Wittenberg, R., Sandhu, B., and Knapp, M. (2002). "Funding long-term care: the public and private options," in *Funding Health Care: Options for Europe. European Observatory on Health Care Systems,* eds E. Mossialos, A. Dixon, J. Figueras, and J. Kutzin (Buckingham, UK: Open University Press), 226–249.

Yan, L. (2014). *The Coverage of Eldercare Facility Has Gap between Urban and Rural*. Available online at: http://www.chinanews.com/gn/2014/07-21/6409450.shtml (Accessed July 21, 2014).

Zhu, F. (2013). The report of old-age Rea' Estate De -element in Beijing. *Indus. Real Estate* 12, 7–12. Available online at: http://www.cnki.com.cn/Article/CJFDTotal-ZZCY201312007.htm

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Senior Entrepreneurship: The Unrevealed Driver for Social Innovation

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From a political and economic perspective, senior entrepreneurship seems to be the response to the demographic consequences of the aging workforce in Europe. Several policies and strategies by the European Union (EU) and the Organization for Economic Co-operation and Development (OECD) promote senior entrepreneurship by creating a favorable environment and frameworks. This article examines the role of senior entrepreneurship as a social innovation understood as a response to unmet needs of population aging in the area of economic activity. In this paper draws on qualitative interviews with 6 experts and 4 senior entrepreneurs (as part of a larger research project) in Poland in addition to the analysis of reports and evaluations of incubator projects. Findings highlight the importance of other factors than financial sustainability of senior entrepreneurship: (1) social connectedness as a means against social isolation, (2) personal self-confidence leading to social and psychological empowerment of the entrepreneurs, and (3) skills, knowledge, and experience that are also strengthening their human capital in the job market. Economic sustainability of the businesses established is not the primary goal in these undertakings. The article suggests that due to the three factors before mentioned that the notion of social innovation in senior entrepreneurship might best be understood as improving the well-being and quality of life of the entrepreneurs themselves. Senior entrepreneurship can be an adequate response to the challenges of the aging population. However, due to the low rates of unemployment, the idea of becoming a senior entrepreneur appears a little tempting.

Keywords: senior entrepreneurship, aging, social innovation, business incubators, self-employment

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INTRODUCTION

Most of the European countries are struggling to find ways to tackle the demographic consequences of the aging workforce. Political strategies (e.g., EU Stockholm-target, the Europe 2020 strategy, the European Year for Active Aging and Solidarity between Generations) promote longer working careers and therefore the increase of participation of older individuals in gainful employment. In this context, senior entrepreneurship seems to represent un unrevealed potential for economic prosperity for older age. Affected by the demographic changes are also the entrepreneurial activities in Europe, in which one notices a current rise of older entrepreneurs (Kautonen, 2013). The Organization for Economic Co-operation and Development (OECD), together with the European Commission, seeing a possibility of accommodating older workers to new roles, published a

Policy Brief "Senior Entrepreneurship" to encourage policy-makers to promote entrepreneurship of older individuals by creating favorable environments and frameworks [OECD (Organisation for Economic Co-operation Development) and European Commission, 2012].

Social innovation, on the other hand, is seen by the EU as a "driver for change" (European Commission, 2014). It is presented as a solution to social, political, demographic, or economic problems where other solutions are not available or are not effective. Furthermore, social innovation is also perceived as a mechanism for achieving systemic social change. It is seen as a way of tackling the underlying roots of social problems rather than just alleviating the symptoms.

Senior entrepreneurship could be viewed from two perspectives. On the one hand, senior entrepreneurs are innovators as they go against the Schumpeterian ideal type of entrepreneur, i.e., a young, preferably male, often white, dynamic, innovative, risk-taking, opportunity grabbing individual, who is entirely responsible for his or her success and failure (see: Brockling, 2007; Ainsworth and Hardy, 2008; Franke, 2012). Taking on roles socially prescribed for the younger generations, senior entrepreneurs overcome stagnant models of activities in older age and contribute to the creation of new, innovative solutions to unemployment, underemployment, social exclusion, or poverty. On the other hand, senior entrepreneurs seem to have more socially oriented goals in the performance of their enterprises, which they fulfill in the form of social entrepreneurship (Stumbitz, 2013).

The paper provides a theoretical input on the discourse on the capabilities of social innovation for creating sustainable social change in the area of senior entrepreneurship. Furthermore, the paper delivers empirical examples from an ongoing research project[1] on senior entrepreneurship in Germany and Poland, where interviews with experts and older entrepreneurs were carried out. The project inspects the transitions and trajectories of adults who decide to become self-employed later in their careers (after 45/50 years of age). The life course perspective allows to track the critical paths and moments, both in professional, as well as in private life trajectories, which determine the decision to become an entrepreneur in later life. Moreover, the study looks at future perspectives of senior entrepreneurs and their plans and projections for the working life after the retirement age and attempts to determine the factors responsible for the successful prolongation of self-employment after the pension age.

This paper aims to evaluate the potential of senior entrepreneurship to become a sustainable social innovation solution for aging population on the example of business incubators for senior entrepreneurship in Poland[2]. It attempts to answer the following questions:

- In what way does a senior entrepreneurship incubator constitute a social innovation for an aging population? What are the innovative characteristics of such an incubator?
- What are the opportunities and limitations of business incubators for senior entrepreneurship?
- What is the potential of senior entrepreneurship incubators to contribute to a sustainable transformation in the socio-economic situation (improvement in subjective well-being, health, social support, financial situation, social connectedness) of older adults?

These questions are answered based on the analysis of three case studies of incubators for senior entrepreneurship in three polish cities: Warszawa, Gdynia, and Gdansk. The empirical material chosen for this analysis consists of in-depth interviews with experts ($N = 6$) and senior entrepreneurs ($N = 4$), who participated in the projects of incubators. Secondly, the analysis of final reports and evaluations from the implementation of the three incubators serves as a secondary data source.

The paper consists of four sections. Firstly, a theoretical background to the theme of social innovation and social entrepreneurship is introduced, where most important concepts are characterized, as well as some examples of ways to evaluate social innovation for an aging population. Secondly, the case studies of senior entrepreneurship incubators are shown, where details about this study's methodology, implementation and innovative character of these projects is presented. The third section is the discussion, where the economic and social impacts and sustainability of these models are discussed with reference to the main research questions. A brief section with conclusions closes the paper.

THEORY AND PRACTICE OF SOCIAL INNOVATION FOR AN AGING POPULATION

The Theory of Social Innovation

"Social innovation" as a keyword has increasingly been used in political debates (e.g., Europe 2020 strategy) to promote new solutions for social challenges. However, there is a broad range of what constitutes social innovation, and concomitantly there is a lack of "a universally accepted definition of social innovation and ambiguity surrounds the term" (de Bruin, 2012, p. 373).

Innovation is inherently linked to Schumpeter's (1934) notion of "combination of production factors" and of "creative destruction" (Schumpeter, 1950 [1942]), considering the continuous mechanism of replacing established practices an inherent feature of capitalism. Despite Schumpeter's inclusion of market innovations as well as legal and institutional innovations (Rammert, 2010), the common notion of "creative destruction" has remained omnipresent with a strong focus on technology (Zapf, 1989), which is reflected in the general definition of the [OECD (Organisation for Economic Co-operation Development) and Eurostat, 2018] ("Oslo Manual") of innovation. However, the shift from post-industrial societies toward knowledge and service-based economies brought social innovation into the limelight of academic as well as public discourse (Schwarz et al., 2008). Technological innovation

[1]Project MOMENT—Making of Mature Entrepreneurs. Funded by the German Research Foundation (Deutsche Forschungsgemeinschaft); the implementation period: 01.2017-12.2019.

[2]The empirical data gathered in Germany did not allow for a similar analysis, as no specific incubators for senior entrepreneurship were identified in the project. The cases found in Poland reflect a very specific financing period (2007–2013) of the EU, where Poland was a major beneficiary of funds for social projects which allowed carrying out of these specific incubators.

alone had increasingly been considered insufficient to offer solutions to changes in societies and economies such as aging populations or cuts in the social budgets with ongoing long-term unemployment (Howaldt and Jacobsen, 2010). Social innovation seemed to be the response to these unmet needs. This paper adopts a definition by Howaldt and Jacobsen (2010), who define social innovation as a new combination of social practices in social contexts by a constellation of stakeholders pursuing the goal of tackling problems in an improved manner compared with established social practices. In addition, social innovations need to be socially acknowledged and broadly diffused in society or certain social areas. Further, they are transformed in the context and institutionalized as new social practice. This definition comprises social innovations whether they are marketable or non-profit (ibid., 88–89). Moreover, social innovations transcend the concept of inventions as they need to be turned into "practical approaches" (Evers et al., 2014, p. 11). While for analytical purposes, there is a need to develop distinctive stages or life-cycles (Murray et al., 2010; Bates, 2012) in the social innovation process, in reality, these are rather messy and unorderly. Moreover, not all stages of such life-cycles of social innovations are defining characteristics as (Howaldt and Schwarz, 2016, p. 63) argue.

Inherent to the concept of social innovation is the centrality of values as social innovations—according to the definition given above—is oriented to overcoming problems left unsolved before (Mulgan et al., 2007; Naegele and Heinze, 2012). While some scholars prefer a definition of the concept without including the outcome of social innovation as necessarily good (Degelsegger and Kesselring, 2012; Pue et al., 2016), others, on the other hand, even go so far to include the criterion of "enhancing society's capacity to act" (Hubert et al., 2010) or to bring about change to social relations (Martinelli, 2012). However, they all share the discard of the Schumpeterian ideal of (private) market competition since the goal of social innovation is essentially considered a contribution to the common good (including, e.g., social capital) in contrast to technological innovation (e.g., gerontechnologies and smart technologies including automation and service robotics) (Klimczuk, 2015b).

The mapping and measuring of social innovation practices to analyze the potential success and sustainability or the outcome of practices of social innovation has been diverse, analogous to the various perspectives and social fields the innovations occur. Indicators and tools for the profit sector appear to be rather problematic for the social sector as financial performance is not at the center of social sector activity (Weaver and Kemp, 2017). Moreover, as several processes have not been identified, the given measurable factors might stress the already known over the immeasurable, yet relevant (Weaver and Kemp, 2017). Nonetheless, it has not been identified how social inventions become social innovations or how social practices become sustainable (Howaldt and Schwarz, 2016).

Just as innovation is key in the classical understanding of entrepreneurship according to Schumpeter, social innovation is central to entrepreneurship and social entrepreneurship. Their link gathered momentum when Muhammad Yunus was awarded the Nobel Peace Prize in 2006 with his microfinancing program highlighting the role of pioneers such as "social entrepreneurs." The following section outlines the relationship between social entrepreneurship as an example and drivers for social innovation at the same time.

Entrepreneurship and Social Innovation

With the notion of contribution to the common good as one of the core criteria of social innovation, the connection to social entrepreneurship becomes quite apparent. Sharing this goal, social entrepreneurs aim to create social value as opposed to personal or shareholder wealth (Noruzi et al., 2010). Furthermore, social entrepreneurs make use of social innovation as they create new combinations of services, products, or organizations (Defourny and Nyssens, 2010). Thereby, social entrepreneurship is rather a collective endeavor: created by collective actors in the same social system through interactive learning, not individually by each social entrepreneur (McElroy, 2002; Dawson and Daniel, 2010).

The term *social entrepreneur* was used in 1972 by Joseph Banks' *The Sociology of Social Movements* precisely referring to the same definition of social innovation as to address unmet social needs and additionally addressing business challenges (El Ebrashi, 2013). Social entrepreneurs do need to perform financially, yet the social motive is the real driving force behind their business endeavor (Austin, 2006). Social enterprises often work between the private and public sectors, meeting the welfare needs of citizens affected by social and economic inequalities (Shaw and de Bruin, 2013).

Thus, social entrepreneurship can be defined as "the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner" (Zahra et al., 2009, p. 519). Even more so, they need to bring about a lasting change (Nicholls, 2006): social entrepreneurship needs to fulfill the criterion of sustainability (Austin, 2006; Robinson, 2006; Martin and Osberg, 2007). Social entrepreneurship–similarly to social innovation–can become the strongest where established organizations and institutions are weak or absent (Desa, 2012). This is particularly the case if the change is more drastic which the social enterprise brings about (Moore et al., 2012).

According to the criteria for social innovation described above, social enterprises tend to rely on finding "solutions" to social challenges. Recently, the shift in demographic structures is among the most remarkable dynamics in every society leading to several unmet needs in so-called "aging societies." Social entrepreneurship seeks to find a response to various age-related challenges. In addition, senior entrepreneurship could provide an innovative idea to include older individuals as senior innovators and part of the emerging stream in creating social innovations. The following section gives an overview of social innovations for the aging population and highlights two initiatives in Europe in the field and their attempt in measuring and evaluating successful social innovations.

Social Innovation for an Aging Population

At present, population aging in Europe has now become a significant concern in political debates on future economies, especially concerning national debt. Concomitantly, this trend has impacted the discourse on "social innovation." With fewer young people entering the labor market, negative outlooks predict new competitive situations on the labor market and a possible "innovation lack" in some industries in the EU. Population aging can, therefore, be considered an obstacle to developing new types of social innovations. However, aging populations can also be perceived as a dynamic driver for social innovations addressing the increasing needs of new products or services (Naegele and Heinze, 2012; Khan, 2013; Foster and Walker, 2015). Apart from revising social norms of aging, enterprises, for example, will have to incorporate specific forms of dealing with older customers and communication abilities spanning the generations (Khan, 2013). With demographic change manifesting itself in general aging of society the question is now, what are promising patterns of social innovations concerning the needs of older individuals? Moreover, what can be the role of senior entrepreneurs?

Senior entrepreneurship is only very slowly finding its place in more general theory on age-related social innovations. Nonetheless, the phenomenon of mature entrepreneurship has been studied empirically for over three decades and explored, for example, the perception and differences between younger and older entrepreneurs (Kautonen, 2008). Among the obstacles faced by older entrepreneurs, few financial and social resources, problems receiving preferable credits, ageism and age discrimination, lack of information and communication technology (ICT) skills or health problems may create barriers to entry into successful self-employment (Zissimopoulos and Karoly, 2007; Franke, 2012; Kautonen, 2013; RKW, 2013). However, some specific advantages of senior entrepreneurship have been revealed as work and industry experience, more developed social networks, higher technical and managerial skills, as well as a stronger financial position compared to younger persons (ibid.). In addition, senior entrepreneurship activities often take part in the field of social innovations, especially catering to senior needs, and may benefit from the seriousness and "speaking the same language" as older clients (Franke, 2012). However, the combination of social innovation, social entrepreneurship, and senior innovators seems scarcely noticed.

In the last decade, the EU has supported research on social innovation and active aging. For example, the project FUTURAGE in the EU's Seventh Framework Programme (09/2009-12/2011) aimed to create a Road Map to guide European research on aging and health for the next 15–20 years. During these 2 years, "the FUTURAGE project focused on the necessity for a new vision of aging and innovative ways to develop the science of aging" (Futurage, 2011a, p. 2). From a multi-disciplinary perspective, the consortium identified seven key dimensions (Futurage, 2011b, p. 9) concerning active aging over the life course such as healthy aging, home and community, Biogerontology, unequal aging, social protection, inclusion and social participation, and mental capacity.

Even with an implicit perspective on "social innovation," the FUTURAGE underlined the importance of the participation of older individuals and the inclusion of aging in the strategic innovation agenda of the European Institute of Innovation and Technology (EIT) (Futurage, 2011a). In addition, the Road Map significantly influenced the "2012 European Year for Active Aging and Solidarity Between Generations." However, the potential of older adults in terms of senior entrepreneurship has been neglected.

In 2011, the European Innovation Partnership on Active and Healthy Aging (EIP on AHA) had been established within the EU 2020-strategy as an initiative launched by the European Commission. The initiative of EIP on AHA started with the idea to enable products and stimulate services in the business market for digital solutions in the health care sector (European Commission, 2018).

In its FAQ-paper, the EIP on AHA focused on digital innovations and digital market and made no coherent link to the theoretical concept of "social innovation." Referring to a broad definition of social innovation complementary to technological innovation, solutions are promoted at the individual, social, and social policy level creating market opportunities for businesses driven by a societal challenge, for example, growing relevance of non-communicable diseases (Richardson et al., 2014). The EIP on AHA, therefore, refers to the Schumpeterian ideal of (private) market competition with a focus on technological innovation rather than new social practices or the inclusion of senior innovators.

A landmark model linked to scientific knowledge and research on age-related social innovation was the InnovAge Project (12/2012-11/2015). The project was comprising a three-year-program to "developing and testing, as well as surveying and cataloging, social innovations that will have a solid impact on improving the quality of life and well-being of older people" (InnovAge, 2016). The project concentrated on the active participation and co-production of older individuals in the developing process. Apart from four tried and tested social innovations, the project further aimed to provide a definition and assessment criteria for age-related social innovations:

> "Social innovations are ideas, products, services or models that are new, or being applied in new contexts, and which are designed to improve the well-being and quality of life of people as they age."

This broad definition underlines, in particular, the purpose of social innovations but disregards the question of the new combination of social practices. For the assessment, the project developed a balanced scorecard, which consists of four criteria (Walker, 2014). To be considered a social innovation, all four criteria—social and economic impact, sustainability, tolerance, and implementation—have to be met. The criteria "social and economic impact" refers to health economic indicators such as systems costs savings due to prevention. Sustainability in the second field means the potential of a continuing product or

service with regard to the local infrastructure, costs, and demand. Acceptability of stakeholder and user-friendliness (e.g., co-design) are also key dimensions of social innovations especially with regard to the feasibility of technology-based solutions. The fourth criteria "implementation" deals with the sensitive question of the success of social innovations when it comes to the users, related skills, and the ability to transfer this innovation into different contexts (e.g., by pilot projects).

In addition to the balanced scorecard, the project InnovAge developed eight distinct domains to represent various categories of the aims of social innovation on active and healthy aging:

1. Promoting physical activity among older people.
2. Improving access and provision of health or social care (incl. support for carers).
3. Prevention and management of long-term health conditions (e.g., non-communicable diseases such as diabetes and dementia).
4. Reducing social isolation and preventing loneliness.
5. Providing social support and building social cohesion (e.g., participating in a social or leisure event or performing a daily living task for someone in need).
6. Using ICT to connect (building social connections and improved access to health and social care).
7. Promoting lifelong learning, skills, and paid employment.
8. Intergenerational activity is promoting solidarity.

These dimensions are related to the strategy for healthy aging from the World Health Organization [WHO (World Health Organization), 2012] and reflect an integrated picture of age-related social innovations by providing an analytical tool for complex interventions, services, and products in aging societies. The focus is on health-related changes with age but also on social cohesion, labor, learning, and intergenerational solidarity. ICT is mentioned as one key dimension but might also be a catalyst for other dimensions.

For measuring outcomes and impact of social innovation, InnovAge suggests the idea of "process evaluation" and immediate health and well-being measures such as activities and instrumental activities of daily living (ADL/IADL), disability measure, self-rated health or, for example, proximal measure as weight loss, level of physical activity, or vulnerability. The consortium then developed specific domains for healthy life years with regard to the improvement of health/functions, quality of life and participation/social cohesion (Walker, 2014).

With regard to the participation-strategy of the project, InnovAge also published "Guidelines on involving older people in social innovation development." The guidelines emphasize the essential active co-production of older individuals in the "planning, development, and implementation of social innovations" (InnovAge, 2016). Methods, which are presented in these guidelines are, for example, surveys and questionnaires, focus groups, workshops, or advisory boards. However, besides questions of success, the project also revealed possible obstacles for social innovations. These barriers can be related to stakeholders and users (especially minors, or those with reduced mental capacity), lack of (digital) literacy, security and trust issues, the risks of highly localized initiatives reaching the economies of scale to generate a sustainable business plan, and; developing an evidence base of efficacy (ibid.).

Another approach of assessing age-related social innovation, derived from the Age Platform Europe, an EU network of non-profit organizations of and for older people established in 2001. Age Platform Europe launched in 2013 a project on social innovation, which "aims at helping policy-makers to get an overview of potential policy needs, funders to receive ideas for potential investments, social entrepreneurs to gain inspirations for potential business ideas and social innovation incubators to improve their service... (and to) create a platform of ideas for social innovations which can be scaled-up tackling the challenges of aging" (Age Platform Europe, 2013). This was one of the first stimuli mentioning at least social entrepreneurship as one dimension of social innovation.

Age Platform Europe together with the other partners created a "Social Innovation in Aging: the European Award," sponsored by the King Baudouin Foundation, aimed to encourage social innovators all across the EU to present their specific initiatives in the field of active and healthy aging (ibid.). In addition, 20 case studies of 220 applicants have been chosen for a deeper analysis to identify specific patterns of age-related innovation patterns.

Based on the application of different social innovation projects, the consortium identified so-called "guiding principles" for social innovation (Kesselring et al., 2014, p. 165–166). These core principles were as followed:

1. Successful innovations need to be simple and clear in their idea to prevent confusion from supporters and clients.
2. Successful innovations show positive user and volunteer experience and benefits.
3. Innovative initiatives recognize societal challenges and the need to innovate social systems instead of simply compensating for their shortcomings.
4. Social innovation should act resource-oriented on user capacities instead of deficits.
5. Social innovation respects active participation and older individuals as co-creators.
6. Social innovation refers to the importance of voluntary work and the new roles of volunteers in terms of benefits for clients, themselves, and the community.
7. Social innovation means a constant process of learning.
8. Evidence-based technologies, practices, and services drive innovative solutions.
9. Increased observability blends service provision with raising public awareness.
10. A combination of social interaction and technology offers the potential for social innovation (ICT, social networks, assistive technologies, etc.).
11. Use of more sophisticated and impact-focused evaluation tools is required (instead of less flexible measures).
12. Extension and diversification of cooperation networks support success.

European Policies seem keen to find new solutions for tackling the aging of society by supporting several initiatives on social

innovation in aging. Similar to the general still existing fuzziness of "social innovation," also the question of social innovation in an aging population arises in terms of definition, specific demands, assessment criteria, and measures for output and impact.

To summarize the activities mentioned above, most notions of social innovation for an aging population entail the idea of catalyzing demographic dynamics, participation, and the improvement of living conditions of older adults in different regions. While the concept of social innovation itself is multifaceted, its interpretation regarding an aging population also comprises a wide range of new types of organizations (e.g., age management in companies), services (e.g., integral forms of co-operation in care) as well as new patterns of social practices (e.g., voluntary work, multigenerational housing). The described projects illustrate a strong focus in the current social, political, and economic discourse on active aging, health, care, intergenerational relations, and active participation also concerning the community level. However, there is still a lack of flexible measures dealing with the complex framework and structure of social innovation activities. Most of the tools are developed for economic and accounting context and rather inappropriate to analyze social impacts. Another consideration is that social innovation for aging depends on the exploration and establishment of cooperation. In this context, platforms for interaction and networks are necessary to enable supportive collaborations. It can also be concluded that social innovation from the employers' perspective regarding age management, social policy innovation or senior entrepreneurship seem neglected topics. Senior entrepreneurship does not stand out in the sense of a technology-based innovation concept, but it holds potential for social innovations, for example, in the field of social entrepreneurship.

SENIOR ENTREPRENEURSHIP INCUBATORS AS MODELS OF SOCIAL INNOVATION FOR AN AGING POPULATION

Senior Entrepreneurship Incubators in Poland

Entrepreneurship or business incubators are "organizations designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services that could include physical space, capital, coaching, common services, and networking connections" (Small Business Encyclopedia, 2018). As such, these organizations (either public or for profit) are a well-known phenomenon in many countries and especially vivid in the branch of new technologies, where mostly technological start-ups are being sponsored. Thus, most of such initiatives are being targeted at younger persons—the ideal type of an entrepreneur (Matricano, 2018). However, some efforts, mostly in Europe, have started to encourage and support senior entrepreneurship. The EU was one of the first organizations to create policy initiatives aimed at stimulating entrepreneurship among older people (Stypinska, 2018). "SeniorEnterprise.ie" in Ireland is an EU-supported initiative through INTERREG IVB NWE, specifically designed to encourage a greater involvement with enterprise by those aged over 50. In this way, senior entrepreneurship addresses the concerns of the many European countries with regard to the challenges posed by an aging population and the need to increase productivity, competitiveness, and entrepreneurial activity across the EU (Isele and Rogoff, 2014). As suggested by Klimczuk, (2015a, p. 4): "Social innovations in Poland are considered mainly in the context of the social economy and social entrepreneurship. Thus, their development and implementation primarily relate to social work and solving social problems such as unemployment, poverty, integration, and employment of people with disabilities, the reduction of the social exclusion, homelessness, and the fight against addiction." Incubators for senior enterprises, as organizations or projects addressing the unemployment, risk of poverty and social isolation of older persons, are innovative ways for addressing these challenges and have the potential for becoming social innovations worth spreading.

Within the framework of EU funds many projects aiming at increasing economic activity in the age group 45/50–65 were carried out (Kubicki, 2012), however, the specificity of targeting this very group with the offer of starting a business was very rare. Most of the projects targeted at unemployed persons age 45/50 were aiming at reintroducing them to the labor market as employees (through training etc.), whereas projects promoting starting a company were not age-specific (or explicitly targeted at young persons) and thus quite often omitted the older age groups due to stereotypical preconceptions that entrepreneurship is for the young only. Thus, a specific niche appeared as space where projects bringing the two dimensions could successfully apply for EU funds.

The starting point for the implementation of these project—incubators in years 2010–2014 were diagnosed problem areas, such as: low professional activity of people aged 50+ in Poland, rapidly progressing population aging process, lack of opportunities to return to the labor market after losing employment, lack of tools for vocational counselors dedicated to work with people 50+ and lack of an appropriate offer of support in the field of entrepreneurial incubation (Kubicki, 2012). The phenomenon of a decline in economic activity was additionally intensified by the pension reform introduced in Poland in 2012, which extended the retirement age to 67 for men and women[3]. Hence the intense interest in addressing this age group. However, the exact number of similar projects carried out in Poland is not available, and thus the presented cases constitute a choice based on the above criteria and the suggestions from experts.

Case Studies Selection

The following section describes the empirical case studies of three incubators for senior entrepreneurship which were operating in Poland between 2010 and 2014 in three cities: Warszawa, Gdansk, and Gdynia. All three were subsidized with public money with

[3]Until 2012 one could retire at the age of 65 or even earlier (for women). After 2013, the retirement age would be gradually increased until reaching the age of 67. Thus, men would reach the target retirement age of 67 in 2020, and women in 2040. The reform was later abolished by the government under the Prawo i Sprawiedliwość (PiS) Party in 2017, and the retirement age returned to 60 for women and 65 for men.

a major contribution from the EU funds for social projects. The case studies presented here were chosen according to the following criteria:

(a) The primary goal of the project was to create an incubator-type of support for the group of persons 45/50 plus with the intention to become self-employed.
(b) The projects are finished.
(c) Visibility and accessibility of information about the incubators on the Internet and through expert knowledge (expert interviews).

The selection of the case studies according to the above criteria allowed to study those projects which could be compared due to the similar structure of funding, management, target groups, and aims. Moreover, they delivered rich data (evaluation reports, experts' evaluations, interviews with participants and experts) which allows a deep and thorough analysis. To the best knowledge of the authors, the case studies presented in the paper represent the whole sample, and no further cases could be found, which fulfilled the above criteria. Thus, it was concluded that the selection strategy allowed to achieve a sample and data saturation, where all possible case studies fulfilling the criteria are taken into consideration and on the basis of the data that have been collected and analyzed hitherto, further data collection is unnecessary.

The analysis presented in this article does not constitute a systematic evaluation of the projects in the strict sense of evaluation of social innovation with the use of a rigid set of indicators (Riess, 2010), as those have been done by appropriate institutions after the duration of the project. The analysis presented here follows flexibly recommendations from the InnovAge project (InnovAge, 2016) to evaluate the social innovation projects but concentrates only on chosen aspects as those which correspond with the research questions of the paper. Thus, the three case studies of incubators for entrepreneurs 45/50+ from Poland are described with regard to four dimensions (a) goals of the project and implementation (understood as actions, measures, effort, etc.); (b) outcomes (understood as immediate results of the project), (c) innovative dimensions (e.g., participation, user-friendliness). The next section, a synthesis of all the models, is presented in relation to (d) social and economic impacts of the projects (changes in society and in the institution, changes in behavior, attitude, relationships among the target group and in the institution) (Riess, 2010) and their sustainability (potential for contributing to a long-term social change). The empirical material used for describing and analyzing the case studies of incubators for senior entrepreneurship includes: self-reporting materials (descriptions of the models developed), external evaluation of projects, expert interviews ($N = 6$), and interviews with participants—senior entrepreneurs ($N = 4$)[4]. The experts were either external actors, not directly involved in the projects, or leaders of institutions implementing the projects. The experts were selected according to their knowledge, experience, and proximity to the projects of incubators, i.e., the level of engagement in the carrying out of projects. The experts represent the following functions: expert 3: external evaluator for the case study II, academic expert in gerontology at the Pedagogical University in Krakow, expert 6: external evaluator for the case study III and academic professional at the Warsaw School of Economics in the area of gerontology; expert 10: project leader for the case study I, developed the idea for the incubator and managed its implementation, based in Warsaw; expert 11: project leader and developer for case study II, based in Gdansk, expert 12: the president of Economic Foundation (Fundacja Gospodarcza, 2014) in Gdynia, responsible for formal implementation in the case study III; expert 13: employee in Economic Foundation, responsible for implementation and running of the incubator in case study III. Three experts expressed their willingness to remain anonymous, and hence we adopted this approach to the rest of the interviewee partners as well. The entrepreneurs interviewed for this study were all participants of the incubators, who participated fully in at least one model of the incubator (one participant took part in two projects). The entrepreneurs 13, 17, and 19 were female; the entrepreneur 15 was male. The interviews were carried out within the framework of the research project MOMENT, which brief description follows.

The Research Project MOMENT

The research project MOMENT is an ongoing project (duration: 01/2017-12/2019) funded by the German Research Association (DFG). It examines the process of becoming an entrepreneur in later life in relation to previous career paths in order to establish how life course experiences determine the shift to self-employment. It explores a basic question about how individual and institutional conditioning impacts on the process of making mature entrepreneurs. The thesis proposed is that the entrepreneurial motivations and activities of older adults are the outcome of a dynamic and reciprocal relationship between their personal and occupational life paths n the one hand, and societal and structural feedback received from institutional (formal and informal) actors on the other hand.

The project methodology is based on individual in-depth interviews with entrepreneurs 45 years and older, as well as expert stakeholders in Poland and Germany. In Germany, interviews have been conducted in the West and the East of the country to obtain the most diversity regarding economic power and industry. In Poland, two voivodeships (Małopolska and Pomerania with their urban capitals of Gdansk and Kraków) and one single urban area (Warsaw) were chosen as fieldwork regions. Małopolska region can be characterized by relatively high labor market activity of older persons in comparison to the average in Poland and has strongly embedded support structures for the activation of older persons in the labor market. Pomeranian Voivodeship was chosen as it has already implemented successful projects of supporting older persons in founding their business activity. Thirdly, Warsaw as the largest urban area in Poland was chosen due to the high propensity of entrepreneurial activity in the area, easily accessible structures of support and assistance for entrepreneurs, as well as lower levels of unemployment among older persons.

[4]The interviews with entrepreneurs are numbered as "ENTR 11," "ENTR 12," etc. The interviews with experts use "EXP" code and a number.

The empirical material gathered until now comprises: qualitative interviews with 13 expert stakeholders[5] (Meuser and Nagel, 1994) and 19 interviews with senior entrepreneurs in Poland. The interviews have been transcribed and analyzed with the method of qualitative content analysis according to Mayring (2000). The empirical data has been analyzed according to the common scientific praxis in sociological research (anonymous transcriptions, rigorous data analysis with the assistance of software MAXQDA).

CASE STUDIES

The Case I "Incubator of Mature Entrepreneurship" (Warsaw, Mazovia Voivodship)

The Project: Goals and Implementation

The project "Incubator of Mature Entrepreneurship" co-financed from EU funds under the European Social Fund was implemented by the "Cooperation Fund" Foundation in partnership with the Foundation for the Promotion of Social Initiatives POLPROM[9]. The project aimed to increase the entrepreneurship of people aged 45+ in the province Mazovia (Mazowsze) through training and advisory support of 50 persons, and through financial assistance for 35 persons intending to start a business. Project activities were carried out from December 2010 until December 2012, and they were guided by the slogan "It is never too late for success" (Fundacja POLPROM, 2012). The starting point for the Incubator was to develop a "Competence Profile of an Entrepreneur," which would be a guiding principle for recruitment phase, as well as the training and counseling phase for the participants. The profile included 17 competencies in four categories: business competence, social competence, personal competence (soft competences), as well as hard competence category of professional skills (hard competencies). The project's recruitment process consisted of two stages—analysis of applications and individual interviews. In the first stage, the original business idea was evaluated, including market analysis, characteristics of potential clients, and competition, as well as an estimate of the total investment and resources; experience, knowledge, and predispositions related to a business idea, as well as motivation, to participate in the project. Finally, 50 persons were accepted, including 27 women and 23 men. Most participants were professionally inactive (32 people), but there were also 13 people employed and at risk of losing their job and five unemployed people. Six participants with disabilities were accepted.

The implementation phase of the project included several types of support: training and counseling, providing office space, where participants could meet and carry out their different activities, and financial support. The training phase involved: psychoeducational workshops (16 h), basic business training (64 h), specialized optional training (20 h), business consulting (12 h), career counseling (4 h), educational consulting (6 h), interventional business consulting (18 h, available in the first year of running a business). The financial support included: one-time subsidy for setting up a business (up to PLN 40,000,∼10,000 euro)−36 people; "bridge support" (PLN 1,000/month)−36 people; extended bridging support (PLN 1,000/month)−12 people.

Outcomes[6]

The tailored model of training/counseling approach used in the project proved to be effective as shown by the level of satisfaction of participants, as well as the implementation of the pre-defined indicators. All participants finished six-month training and consultancy and prepared business plans. However, the scope of training was also problematic due to family obligations or time restrictions. Moreover, the fact that the participants needed to remain in training for more than half a year was a limitation: "This is both a lot and little, I think that it is not enough, and for people and for me too, who want to set up the business the time is stretched, half a year is very troublesome because imagine: people are without work, usually, on the support of spouses, they often have children" (ENTR 13). In the end, 48 business plans (96%) were rated positively. Due to budgetary restrictions, only 36 persons received subsidies for starting a business.

Innovation and Participation

The innovative dimension of the project could be observed in several specific features of this project in comparison to other projects supporting persons wanting to start the business. It could be briefly summarized in the definition of the Incubator for Mature Entrepreneurs itself: "The Incubator is a method of supporting people aged 45+, which creates the best conditions for acquiring knowledge, acquiring competences and taking the first steps toward the enterprise parts—minimizes stress, mobilizes, increases the effectiveness of actions training and consulting and facilitates running the company in the first years' activities. The incubator responds fully to all diagnosed educational needs of this target group" (Fundacja POLPROM, 2012). Another innovative dimension of this project was that the project and office spaces etc. was adapted to the needs of persons with disabilities, which was intended to provide more inclusion for the participants of a certain age. This model constitutes a social innovation in three areas indicated by the guidelines of project InnovAge: reducing social isolation and preventing loneliness, providing social support, and building social cohesion, and promoting lifelong learning, skills, and paid employment (InnovAge, 2016).

The Case II: Pomorska Fabryka Designu "Pomeranian Design Factory" (Gdansk, Pomeranian Voivodeship)

Goals and Implementation

In May 2012, the Gdansk Entrepreneurship Foundation started the implementation of an innovative project "Pomeranian Design

[5]The planned number of expert interviews in Poland is 20 and 30 for the entrepreneurs.

[6]Within the framework of Human Capital Operational Program Priority VI "labor market open for all," measure 6.2 "Support and promotion of entrepreneurship and self-employment."

Factory." The project was implemented in partnership with the Poviat Office in Gdansk. The project aimed to extend the age of professional activity of people 50+ residing in the province Pomeranian through actions combining creativity and handcraft skills with entrepreneurship, which was an unusual idea based on a similar project in Switzerland (EXP 11). As part of the model, comprehensive support was provided for people who were unemployed, enabling them to create their own workplace, from which, through performing their hobbies and using their manual skills they could earn a living. The initial number of persons who applied for the program was more than 100, which boiled down to 15 participants after the first evaluation and after the final Assessment Center Methodology of recruitment. Moreover, a product distribution tool was launched (an online sales platform), where the participants were allowed to operate under a shared brand (pol. "Sto palców"; eng. "Hundred fingers"). The incubator model consisted of 9 modules: (1) Recruitment process of the participants and supporting team, (2) Training module for the participants and the support team, (3) Advisory module for the participants—design, business, and accounting-legal advice, (4) The business model of the undertaking, (5) Guide to building an online sales platform, (6) The marketing strategy of the undertaking, (7) Guide to creating a brand, (8) Organizational and legal model of the brand and online sales platform management, (9) Financial subsidy for starting a business and bridging support (Rzeczkowska-Owczarek et al., 2014).

Outcomes

The outcomes of the model developed within the project Pomeranian Design Factory were measured in an external evaluation using the testing result indicators. The monitoring covered 11 stages, and 33 indicators were used. Out of this 11 were achieved at 100%, 14 at more than 100%, and 8 at less than 100%. Most testing results have been achieved without major difficulties. The lowest achievement was observed in the indicator "the sale of products via the online sales platform." The index refers to this result was implemented only in 28%. (Rzeczkowska-Owczarek et al., 2014, p. 17). According to one of the interview partners, this problem did not result from the low interest in the brand products, as the sales ratio at other sale points was reached in 450%, but the reasons for low achievements were rather the result of lack of long-term technical support for its operating (EXP 11). One participant commented it this way: "Because this store was very nice, everything was nice, nice. We learned to handle it, but it was not so that someone would run this shop, it would not be, because it would be very labor-intensive, this person would she could not drive her business anymore, right?" (ENTR 19).

Each participant of the project received financial and non-financial support in the form of business and design-creative training, as well as design, business and accounting-legal consulting (Rzeczkowska-Owczarek et al., 2014). The classes with designers, who played the role of both advisers and mentors, were perceived as especially valuable. Three out of five participants pointed out that the most important ("turning point") element of their participation in the project was the cooperation with the designers (ibid.).

In the effect of the project, all participants received the financial subsidy (∼16,000 PLN = 4,000 Euro) for business and opened their own companies. The financial support was recognized as the most crucial element of the whole project and as many as 10 of the 14 project participants (71%) indicated that they would not decide to open own business if they did not receive financial support. The financial subsidy was received positively by the participants, but some critique was also expressed "we got some money, now I will not tell you exactly how much but a dozen or so thousand and it was a bit bad because they told us to spend the money immediately, and we didn't yet know what we needed... Moreover, it terribly annoyed me; I do not like spending money aimlessly (...) if I got money in cash, then I could spend it successively when there would be a need and not so..." (ENTR 17). For another person, the money was actually the motive she did open the business: "it was a good start, that extra money, I could buy the materials and things I needed" (ENTR 19).

Innovation and Participation

The project had several elements which were of an innovative character. First of all, it was the first project addressed to a very particular group of persons 50+, namely those who were highly gifted in their craftsmen skills. Secondly, careful recruitment of the participants was carried out with the use of a method—Assessment Center[7], which had never been used so far to recruit unemployed persons to activation programs. In contrast to the traditional methods used, this tool allowed to verify the competences and identify the strengths of the participants, as well as areas where further assistance and development is needed. The external evaluation showed that it was more effective by selecting participants who were able to meet the challenges posed by the model (Rzeczkowska-Owczarek et al., 2014). Also, according to an expert in the field of andragogy, "the selection of beneficiaries for the project is crucial. Among the unemployed are those who do not want to take up a job, are unfit to manage their own venture, are finally claimable and helpless—this project should not be addressed to people over 50 with such traits" (EXP 3). Another innovative element of the model was a dedicated online sales platform and operating under a shared brand. Relieving the participants from the obligation to create and manage their own online store allowed to limit the bureaucratic activities and allowed them to focus on the production of designer products. The platform was supposed to stay active after the end of the project and be accessible to those who wish to sell their products there. However, the sustainability of this solution needs to be questioned, since after 4 years since the end of the project the platform is not any more actively used by the project participants (EXP 11).

[7]The verifiability of this method is the highest among all known recruitment methods, and its effectiveness is assessed at 43–65% (Gdanska Fundacja Przedsiebiorczości, 2014, p. 5).

The Case III "Mature Entrepreneurship: An Innovative Model of Entrepreneurial Pre-incubation of People 50+" (Gdynia, Pomeranian Voivodeship)

Goals and Implementation

Project "Mature entrepreneurship: an innovative model of entrepreneurial pre-incubation of people 50+" was carried out from February 2012 to September 2014 by the Economic Foundation in Gdynia in cooperation with the Poviat Labor Office in Gdynia[8]. The main objective of the project was to develop and test an innovative model of entrepreneurial pre-incubation of people aged 50+ who were economically active, aimed at activating to set up their own business. Sixty-three unemployed people aged 50+ and 4 vocational counselors participated in the project. "Pre-incubation" of entrepreneurship are actions aimed at building the awareness of the older person to such an extent that he/she can decide to start own business. Pre-incubation of entrepreneurship does not assume that everyone has predispositions, competences, and other resources, as well as operate in an environment conducive to running their own business. The aim of pre-incubation is a reliable analysis of the risk and opportunities of running your own company, the results of which may lead to the conclusion that a solution is much more beneficial for a given person will be to remain an employee (Jurek, 2012).

The implementation of an entrepreneurial pre-incubation model of 50+ people consisted of three components: model of consulting, model of conducting training and a multimedia application "Life Design 50+." Important to underline is that the participants did not receive a financial subsidy to start their companies, what was the practice in two earlier case studies. The counseling model was used to diagnose and supplement the competences of people 50+, which are necessary to be an effective entrepreneur. The model included independent work with the project participants, and they were the basis for designing individual support for each of them. The training model included materials for the implementation of soft skills training in the field of personal development and business training with entrepreneurship and sales skills. This tool was aimed to supplement knowledge of selected areas and support the person in the field of generating business ideas and preparing to run their own business. The Life Design 50+ application (available online at http://www.dojrzalaprzedsiebiorczosc.pl/life-design-50/opis.html) was created as an online tool to structure the process of professional counseling and includes a number of tools and tips useful in the process of estimating the potential of a 50+ person and developing recommendations for effective professional activation. The application consists of three stages closely related to consulting work with a 50+ customer, described in the model of consulting. All intermediate products were based on the skills developed within the framework of the Pyramid project and diagnosed in the study of the needs of people aged 50+ and vocational counselors.

Outcomes

The effectiveness of the innovative entrepreneurial pre-incubation model was demonstrated by the high−52% efficiency (the average effectiveness of programs targeted at people aged 50+ in the Pomeranian Voivodeship was 38%). For 60 people who completed the project 21 people took up employment, five people took up a business and five people set up a social co-operative (EXP 13). The training was mostly evaluated very positively by the project participants, however some suggested changes: "These training showed important things, although I say that the training would be more necessary after starting the company, because I had all the theory on this training, but the problems come in during the first months and years of running a company, it is then that questions arise" (ENTR 15). Also, the length of the training was identified as problematic.

The experts interviewed were very optimistic about the outcomes of the project: "We had the effects of dissemination of our model—these are declarations from career advisers from the Pomorskie Voivodeship, but also from other regions of Poland about the willingness to use the entrepreneurial pre-incubation model in their daily work" (EXP 12).

Innovation and Participation

The project can be identified as being innovative in a few dimensions. Firstly, the target group—economically inactive persons aged 50+—have not been earlier supported in terms of entrepreneurship, but rather in return to employment. In the majority of projects, only those entrepreneurs who had a specific business idea had benefited from the support in the form of financial subsidy and training. People without knowledge in the area of entrepreneurship and concrete business plan could not submit applications for grants. Supporting entrepreneurial skills and becoming self-employed for this age group was perceived as an innovative way to continue their professional activity. Secondly, this model of entrepreneurial pre-incubation helped in diagnosing the entrepreneurial predispositions of a 50+ person, defining competence gaps and completing them, increasing self-esteem, and positively influencing the attitudes of the recipient of support (Zajaczkowska, 2013). Pre-incubation is a process that anticipates and complements the standard incubation path of companies but does not necessarily impose this solution on the participants. The research carried out in the project showed that mature people require dedicated support, taking into account their specific needs and that is why the preincubation model is more convincing than the standard incubator (EXP 12). The innovative character of the model was appreciated and in October 2014, at the Exhibition Fair in Warsaw, received an award for the winner of the second edition of the competition: "Regatta of Development: Leaders of Innovation and Transnational Cooperation, 2007–2013," in the Leader of the Innovation category.

[8] As part of the Human Capital Operational Program, Priority VI "Open market for everyone," Measure 6.1. "Improvement of the access to employment and support for professional activity in the region," Sub-measure 6.1.1. "Support for people without employment in the regional labor market."

DISCUSSION: SOCIAL AND ECONOMIC IMPACT AND SUSTAINABILITY OF INCUBATORS FOR SENIOR ENTREPRENEURSHIP

This section provides an overall synthesis of the impacts and sustainability of the presented incubators. The projects' impact understood as the long-term effects can be divided into two categories: the financial/economic and social impact. The sustainability can be understood as a long-term social change for the target group and/or society/community. It can be viewed from an individual and/or an institutional perspective.

The financial impact of the incubators was usually relatively limited, as due to the high cost of running a one-person company, most[9] of the businesses created within the projects needed to close their operation after 1 or 2 years. Almost all the interviewed respondents, both experts, and entrepreneurs assessed that the main culprit of this situation was the structure of social insurance (ZUS; Zakład Ubezpieczen Społecznych, eng. Polish Social Insurance Institution) paid by the self-employed. The reasons for 'losing the complies do not lie in the lack of capabilities of participants to run a firm or their low motivation. Only a few participants of all the incubators were successful financially. For a woman in the Design Factory the project indeed increased her financial stability: "I mean, what has changed, that I have so much now work that I cannot catch up, it has changed (...) at this moment, when someone comes to me, that I, unfortunately, have to say no, because I do not have time anymore" (ENTR 19). In most of the cases, however, the business closures were related to high costs of ZUS (Interview partners 13, 17, 19), which make the financial sustainability of the senior entrepreneurship (which is in most of the cases a one-person-company) very hard to achieve "I closed the company after 2 years, because it's terribly time-consuming and I just cannot afford to pay ZUS, because after 2 years it went into over 1,000 zlotys there, 1,100, basically I would have to pay extra", "probably all of us knew that after 2 years we would close, but that this ZUS would be impossible" (ENTR 19). Furthermore, all the experts confirmed that the Insurance ZUS is the primary reason for closures "and then this ZUS increases and, unfortunately, it is deadly" (EXP 10). Secondly, the businesses were being closed due to family obligations (caring of older parents) or own health issues. "Well, maybe I gave up too soon because I have a lot of knowledge and willingness, but it was also due to a family situation like that. I have an older mother, 92 years old and if I worked and probably had such a situation, I would probably have to put her in an institution somewhere, right?" (ENTR 13); "Yes, I mean that just because of my and uncle, I do not have such situations that I would have to suspend my business then, right? Because I just cannot, and in this, I am the moment of life that I cannot plan anything simply" (ENTR 19).

[9]The exact number of closures is not known due to the lack of systematic monitoring of the projects, but as some experts suggested, the closures were about 80% of the cases.

The main long-term impact, however, mentioned by the interviewees were not financial, but the personal change and transformation, which proved that the incubators held an empowering role for the older participants in building their own self -esteem: "I know well that people of my age are perceived in a certain way, right? Nobody will believe that I can do it (graphic design) in a modern way. Maybe a little lack of self-confidence? Well, as I started to apply there as well, I did not have any faith that I would get it so well, for me it was incredible, that I got the highest note of women, I did not expect it to be honest" (ENTR 13).

> "I could not get over the admiration of how this man made progress just in terms of a more businesslike approach, some more self-confidence, such opening" (EXP 10).
>
> "That I'm independent, when I'm 60, I suddenly became independent, I was never independent before" (ENTR 17).
>
> "In general, this 100 fingers project, it gave me such self-confidence, right? That... I believed in my strength, right? And that someone was standing behind us, that it was such a support, also I have very good memories about this project, and I think... we all think that it gave us a lot, even if we closed these companies? This gave us such a thing... it changed us, very much (...) in my case that I went out more to people, that I made new friends, new contacts, that we continue to grow, because we are learning more—at least some of us, we go to some classes now, also extra" (ENTR 19).
>
> "I felt more appreciated that I have my own company and that's what it was all about... that was definitely important for me" (ENTR 19).

In the project Design Factory, the individual meeting with designers was highly appreciated by the participants, as they managed to increase the self-esteem of the older participants. One of the participants expressed it this way: "They had yy female designers hired, three girls after art schools and they rated the work. And me just... I'm so modest with these sweaters I'm thinking oh God! Some artists will be there, and it turned out that I had the first place... First place, the most points I got from girls, I was so happy! Jesus!" (ENTR 17).

Secondly, participation in the courses, training, and counseling significantly increased their skills and knowledge (human capital). It was confirmed by the external evaluation report of Case II that the participants gained several new soft skills, such as: developing innovative and creative abilities, development of entrepreneurial features, strengthening faith in one's own strength and abilities. The participants admitted it "gave them a lot" (ENTR 17), and that it provided them with knowledge which they used in their future projects and endeavors (not necessarily for economic gains): "but there were girls who could not talk about themselves introduce themselves, they could not... count the business to get something out there, right? And so, the project helped them" (ENTR 17).

The third category in which the participants, as well as experts, saw a long-lasting impact was the building of social capital: new social networks, both in the business, as well as in the private sphere. "Besides, we met each other, we all like each other—12 were girls, 3 boys but they got lost somewhere along the way, and

the girls still meet (...), yes, after 5 years we still meet" (ENTR 17). Moreover, the business networks were also strengthened by the media coverage of the project featuring one of the participants: "I was on TV in Gdansk, I was interviewed and from such a newspaper... they asked me that such a newspaper for mature ladies (...) and a reporter, she came to me from Warsaw to interview me and... it got a bit loud because I made a sweater for such a famous lady in Poland and this sweater, and then they started to look who made this sweater.. people came to me who was looking for this sweater, but nobody knew who was it because this sweater was in the newspapers and on the Internet portals and everyone... there was such an interest in who did it" (ENTR 19).

The policy suggestion made in the vast literature on senior entrepreneurship underlines that in order to encourage older adults to start their own businesses "the general awareness of third-age entrepreneurship as a viable, positive and attractive late-career option" has to be popularized (Kautonen et al., 2013). In this way, the project Pomeranian Design Factory was extremely successful in gaining public attention and contributing to the improvement of the image of older entrepreneurs in society. The media coverages were positive and pictured the image of older entrepreneurs as very successful. This was furthermore strengthened by professional short videos introducing each entrepreneur and their products.[10]

The sustainability of the senior entrepreneurship could also be observed in the type of some businesses started, especially with regard to the long-term thinking about the needs of aging societies. One of the participants (who previously studies political sciences) opened a podiatry practice seeing a need for this kind of services in the aging population in Poland. It was commented as being almost a revolutionary solution and "it was very brave, because it was like entering a completely new reality (...) because it is not only a cosmetology but already a therapeutic and healing method (...) because diabetes is a civilization illness, so these problems will only increase in the population entering the retirement age (...) so, she thought it would be a very promising and interesting job" (ENTR 13).

The impacts and sustainability of the project also need to be analyzed from the institutional—as opposed to the individual—perspective, i.e., what was the gain/loss for the institutions and organizations implementing the projects. The primary impact identified by all the experts involved (EXP 10, 11, 12, 13) in the projects was an outstanding learning effect from the implementation of the incubators for the project organizers:

> "We learned a lot, our employees who worked in this project got really a whole new set of knowledge. Well, if these assessments, creating... thinking about these entrepreneurial traits, creating these scales and so on, meeting with professionals in this area, also meeting with this group 50+, as well as these designers... so far we have never worked with such environment, so entering a new environment, new areas unrelated to business (...) so we have gained a lot of such new knowledge for us and also for the management of a project that was not so simple, which was multilateral—I think it was extremely interesting and a lot of new knowledge. I was very happy" (EXP 11).

Secondly, experts mentioned that the biggest hindrance to the sustainability of these solutions is the short-term thinking of grant givers "only the short-term effects are taken into account (...) To spend money is important and to have a result that after a year nobody resigned, right? And that everyone has kept these companies for at least a year, and nobody is interested in anything anymore. Only what for? Why do these projects at all? If you do not study in the long-term perspective of how these people deal with it. And that if you do not offer this support not only this year, because it seems to me that this support would be needed maybe in a smaller sum, in the longer than just this 1 year" (EXP 10). It was admitted that there is also no systematic monitoring of the activities undertaken by the participants 3 months after the end of the project. Further, the role of indicators used to measure the progress and success of the projects was criticized as not flexible enough (EXP 10). Moreover, the experts remained skeptical about the sustainability of financing this kind of projects in the new financing period of the EU (2013–2020) due to long duration of such incubators and high costs of it, as well as changing priorities in the funding programs, where there is less focus on the labor market measures for older persons.

Another hindrance to the sustainability of the developed model of the incubator in the Case I in Warsaw was that even though model and recommendations exist, they are not used: "it is just a shame that these solutions that are worked out are transferred to the ministry and are lost in some official drawer and then just after a year or two, someone else works out a model in Gdansk" (EXP 10). Sustainability of the model of preincubation in Case I can be seen in the availability of the online tool, which can be used by both persons with the intention to start a business, as well as counselors who work with 50+ clients. The online availability of the platform 4 years after the end of the project is an outstanding result in comparison to other websites, which are no more active and thus the materials (models, instructions, reports, and recommendations) developed within the projects are no more accessible. Therefore, the transfer and the potential for scaling -up of these social innovations was hindered. The expert proposed a solution: "to create some kind of base, a well-made database of national projects such a database of projects in which you could search for such a specific subject, yes, some specific whether it is a model or is there some other type of solution in some field and to make it available. For example, I want to do such a different project, and I have an idea to create an incubator model for mature people, I check if someone has already invented it, right? Because maybe he came up a few years ago and it could be adopted but something to change because something has already changed, right? (EXP 10). The sustainability of the Incubator was thus envisioned, in the creation of a systematic national network of Incubators of Mature Entrepreneurship, which would operate under a single brand and would be recognizable similarly to the Academic Incubators functioning at the universities" (Fundacja Fundusz Współpracy, 2012).

[10]The videos are still available at the https://www.voutube.com/watch?v=q7dwAz11rbE.

CONCLUSIONS

This paper aimed to illustrate senior entrepreneurship as a potential driver for social innovation in aging societies by presenting three case studies for incubators in Poland. It can be summarized, that the concept of social innovation itself is multifaceted, but its interpretation regarding age-related social innovation seems even more diffuse. So far, most activities related to social innovation for aging populations refer to initiatives regarding health, care, intergenerational relations, and active participation also concerning the community level. However, senior entrepreneurship as a progressive form of integrating seniors in social innovation processes seems a neglected topic. Older entrepreneurs might be especially able to gain older clients and "demographic related" branches in the senior market. The three case studies presented in the paper give evidence for the importance of incubators as a platform for exchange and support for older persons, who decide to become self-employed in later life. However, some limitations and obstacles to the incubators becoming a scalable social innovation solution were also observed.

There is evidence that although the incubators do not sustainably contribute to the improvement of the financial situation of the entrepreneurs 50+, they do hold potential for improvement in: (1) social connectedness (social capital), and thus—decrease in social isolation, loneliness, prevent from social exclusion, (2) personal self-confidence which leads to social and psychological empowerment of the participants, allowing them to participate more fully in social and economic life, "it drags them out of homes," and (3) skills, knowledge and experience (human capital)—the participation in incubator activities broadened the repertoire of skills and know-how of the participants preparing them to actively pursue further economic activities (not only related to the self-employment status, but also as an employee).

With regard to the economic sustainability of the firms established within the framework of the senior incubators, the results are not as clear-cut. Firstly, some firms still exist, but have low income, usually due to the character of the activity (small input, one-person, based on small capital). Secondly, the majority of firms closed down after 1–2 years of activity, and the reasons for that are mainly related to purely economic/market factors and the characteristic of starting a small business in Poland: the burden of ZUS (social contributions including social insurance) is simply too high. Other factors for closing the firms: the burden of care (usually aging parents), and also own health problems. Therefore, the economic impact of the incubators can be evaluated as relatively short-term and limited to the financial subsidies received from the incubators. However, as shown in the cases of senior entrepreneurs, even after formally closing the enterprise, many of them continued economic activity in another form, which for some of them constituted a steady income.

It can be concluded that the depicted incubators do fulfill the criteria of social innovations with regard to their goals and impacts, that is to: "improve the well-being and quality of life of people as they age" (InnovAge, 2016). It can be assumed that the well-being and quality of life of the participants of incubators were increased due to the identified increases in the three domains: social capital, human capital and the effect of empowerment gained by the participants. According to the so-called "guiding principles" of social innovation, as identified by Kesselring et al. (2014), the incubators for senior enterprisers fulfilled at least 5 out of 12 criteria. Firstly, they were "simple and clear" solutions. The incubators received a very positive public resonance due to a simple idea of supporting older persons in their entrepreneurial activities, which previously had not been done in any systematic way. Secondly, these incubators were based on a thorough analysis of competencies and capabilities of the participants, which was visible in the long and precise recruitment process, especially in the Case II where handcraft skills were a particular focus. Thirdly, active participation of older individuals was seen in the implementation of the project in Case II, where the participants needed to create a common brand for their products. Fourthly, all the incubators reflected the idea that social innovation means a constant process of learning. The training, counseling and further assistance of the senior entrepreneurs provided for a large increase in the human, cultural and social capital of the participants. Lastly, the guidelines define that "A combination of social interaction and technology offers potential for social innovation," which criteria were met by two incubators (Case II and III), where the technology—Internet platforms (for selling the products, as well as for training and counseling for older adults to entrepreneurship) were one of the core elements of the incubators.

The scale-up possibility for the incubators as a social innovation for the aging population was mentioned by all the experts. However, certain modifications need to be implemented: "I think that this is a very good way to support entrepreneurship such an incubator, only acting according to other principles, right? (...) In other words, greater individualization and the possibility of such more flexible paths in the project for these people" (EXP 10). Moreover, the timing of the implementation of these solutions also plays a significant role in the possibility of spreading social innovation. The problematic situation of the older adults on the labor market in Poland at the time of these projects has in the meantime improved significantly. The employment rates of older population increased and according to many experts, the better economic situation in the labor market and more options for employment decrease the interest and willingness of older adults to start or continue the self-employment, as a steady job position is considered a more attractive alternative to entrepreneurship (EXP 6, EXP 10).

The results from the MOMENT project indicate that even despite the relatively low economic sustainability of the entrepreneurial activities started within the incubator, there is a strong potential for entrepreneurial activities in older age, in the sense of age productivity and social innovation. It needs to be bear in mind, that starting an entrepreneurial activity is a risky endeavor under any circumstances and at any age. According to Small Business Trends, the success rate of first entrepreneurship lies at 18% and the major reasons for failure are incompetence, unbalanced experience or lack of managerial experience, neglect, fraud, and lack of experiences related to goods or services (Mansfield, 2018). The economic benefits of the incubators should therefore not undermine the importance

of senior entrepreneurship as an innovative way to tackle the economic inactivity of older adults. Moreover, experts underlined that costs of such incubators could be significantly lowered in the future if one model of support would be established, and further replicated in other locations and target groups without the initial costs of model development. And although similar social benefits could also be derived from other projects at lower costs (e.g., social inclusion projects), the innovative character of the senior entrepreneurial incubators cannot be underestimated, as the long term impact on the participants, as well as social and cultural outcomes for the society at large, are more difficult to quantify and measure and are perhaps still to be seen. Additionally, as stated by Khalil and Olafsen (2010): "Business incubators provide a proactive platform for early-stage entrepreneurial activities and trigger connectivity between different entrepreneurs, trainings and business advisory services. Regarding the interactions between like-minded incubates the value of a psychologically supportive environment cannot be overemphasized" (Khalil and Olafsen, 2010, p. 73).

Finally, attention should be drawn to the issue of qualitative measurement and evaluation of outcomes and impacts of social programs, such as senior entrepreneurship incubators. The assessment of the social impact of social innovations is a challenging task, as there is no coherent approach to the measurement of social effects. By their very nature, it is hard to measure social and environmental value due to the danger that such important benefits become subordinated to economic indicators that can claim greater rigor in terms of data quality (Arvidson et al., 2010). One of the approaches in measuring social impact is the Social Return on Investment (SROI) approach, which is still in its development stage rather than being an established methodological approach. SROI is described as an "approach toward identifying and appreciating value created. It involves reviewing the inputs, outputs, outcomes, and impacts made and experienced by stakeholders of an organization in relation to the activities of an organization, and putting a monetary value on the social, economic and environmental benefits and costs created by an organization" (ibid., 6). The approach is focused on attributing financial value to inputs and outputs, leading to the final process of calculating the SROI ratio. Other principles of SROI approach include: stakeholders' engagement, understanding the change, valuing what matters, or being transparent and the general approach should guarantee a very careful judgment of the social and/or environmental impacts. Arvidson et al. (2010) underline: "In order for a comprehensive and credible SROI assessment to take place, organizations will need access to evidence based on both quantitative and qualitative data, some of which is quantifiable and some of which is not." The implementation of a qualitative approach to the evaluation of social projects is both challenging and necessary. In case of the senior entrepreneurship incubators, the quantitative outcomes and impacts were measures in all the cases but were at the same time criticized by the implementing organizations themselves as being too narrow. This approach stems from the requirements of the funding institutions, which demand hard quantitative data about the results of financing. The qualitative approach to the evaluation of results was less common and did not adhere to any specific pre-defined criteria and is also not among requirements for final reports. This qualitative approach to measuring outcomes would need to involve additional resources (e.g., for in-dept interviews with participants or other stakeholders) and be significantly extended in time (to allow for estimations of long-term impacts). Moreover, a for qualitative evaluation would be needed in order to reflect the SROI guidelines, such as to "measure what matters." For a proper qualitative evaluation of impacts of the senior entrepreneurship incubators on the individual, communal, as well as organizational level it would be recommended to adapt an approach close to or similar to SROI approach, which simultaneously would require an investment in additional financial and personal resources, as well as methodological rigor of the qualitative evaluation.

ETHICS STATEMENT

The individual interviews in the project were carried out in accordance with the ethical principles of good scientific practice of German Research Foundation (Deutsche Forschunsgemeinschaft). The approval of an Ethics Committee was not required for this study as per applicable institutional and national guidelines. Before each interview an explanation of the purpose of the study and the information about the audio data gathered during the interview was given to each participant. All the participants were asked for a permission to record the interviews and an oral informed consent was received from all of them.

AUTHOR CONTRIBUTIONS

The leading author of the paper is JS. The parts she prepared are: the general concept and outline of the publication, the introduction, the empirical part, as well as discussion and conclusions. AF and JM prepared the whole theoretical part, made comments, suggestions and corrections to the rest of the article.

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REFERENCES

Age Platform Europe (2013). "Social Innovation for Ageing," in *Age Platform Europe*. Available online at: https://www.age-platform.eu/project/social-innovation-ageing (accessed November 18, 2018).

Ainsworth, S., and Hardy, C. (2008). The enterprising self: an unsuitable job for an older worker. *Organization* 15, 389–405. doi: 10.1177/1350508408088536

Arvidson, M., Lyon, F., Mackay, S., and Moro, D. (2010). *The Ambitions and Challenges of SROI, Third Sector Research Centre*. TSRC Working Paper, no. 49. Birmingham: University of Birmingham. Available online at: https://www.birmingham.ac.uk/generic/tsrc/documents/tsrc/working-papers/working-paper-49.pdf

Austin, J. E. (2006). "Three Avenues for Social Entrepreneurship Research," in *Social Entrepreneurship*. eds J. Mair, J. A. Robinson, and K. Hockerts (Basingstoke: Palgrave Macmillan), 22-33. doi: 10.1057/9780230625655_3

Bates, S. M. (2012). *The Social Innovation Imperative: Create Winning Products, Services, and Programs That Solve Society's Most Pressing Challenges*. New York, NY: McGraw-Hill.

Brockling, U. (2007). *Das unternehmerische Selbst. Soziologie Einer Subjektivierungsform (The Entrepreneurial Self: Fabricating a New Type of Subject)*. Frankfurt am Main: Suhrkamp Verlag.

Dawson, P. M., and Daniel, L. (2010). Understanding social innovation: a provisional framework. *IJTM* 51, 9–21. doi: 10.1504/IJTM.2010.033125

de Bruin, A. (2012). "Towards advancing understanding of social innovation," in *Challenge Social Innovation: Potentials for Business, Social Entrepreneurship, Welfare and Civil Society*. eds H.-W. Franz, J. Hochgerner, and J. Howaldt (Berlin; Heidelberg: Springer VS), 367–378. doi: 10.1007/978-3-642-32879-4_22

Defourny, J., and Nyssens, M. (2010). Conceptions of social enterprise and social entrepreneurship in europe and the United States: convergences and divergences. *J. Soc. Entrepr.* 1, 32–53. doi: 10.1080/19420670903442053

Degelsegger, A., and Kesselring, A. (2012). "Do non-humans make a difference? the actor-network-theory and the social innovation paradigm," in *Challenge Social Innovation. Potentials for Business, Social Entrepreneurship, Welfare and Civil Society*. eds H.-W. Franz, J. Hochgerner, and J. Howaldt. (Berlin; Heidelberg: Springer), 57–72. doi: 10.1007/978-3-642-32879-4_4

Desa, G. (2012). Resource mobilization in international social entrepreneurship: bricolage as a mechanism of institutional transformation. *Entrepr. Theory Practice* 36, 727–751. doi: 10.1111/j.1540-6520.2010.00430.x

El Ebrashi, R. (2013). Social entrepreneurship theory and sustainable social impact. *Soc. Respons. J.* 9, 188–209. doi: 10.1108/SRJ-07-2011-0013

European Commission (2014). *Social Innovation. A Decade of Changes*. Luxembourg: Publications Office of the European Union.

European Commission (2018). *Progress of the European Innovation Partnership on Active and Healthy Ageing, SWD (2018) 437 final*. Brussels: European Commission. Available online at: https://ec.europa.eu/eip/ageing/about-the-partnership_en

Evers, A., Ewert, B., and Brandsen, T. (2014). *Social Innovations for Social Cohesion: Transnational Patterns and Approaches From 20 European Cities*. Liege: EMES.

Foster, L., and Walker, A. (2015). Active and successful aging: a European policy perspective. *Gerontologist* 55, 83–90. doi: 10.1093/geront/gnu028

Franke, A. (2012). *Gründungsaktivitäten in der Zweiten Lebenshälfte: Eine empirische Untersuchung im Kontext der Altersproduktivitätsdiskussion (Start-up Activities in the Second Half of Life: An Empirical Investigation in the Context of the Age Productivity Discussion).* Wiesbaden: Springer VS.

Fundacja Fundusz Współpracy (2012). *Inkubator Dojrzałej Przedsiebiorczości - Model (Incubator of Mature Entrepreneurship: A Model)*. Warszawa: Fundacja Fundusz Współpracy.

Fundacja Gospodarcza (2014). *Opis Produktu Finalnego: Innowacyjnego Modelu Preinkubacji Przedsiebiorczej Osób w Wieku 50+ (Description of the Final Product: Innovative Model of Entrepreneurial Pre-incubation of People Aged 50+)*. Gdynia: Fundacja Gospodarcza.

Fundacja POLPROM (2012). *Dojrzała Przedsiebiorczość. Klucz do Sukcesu Osób 45+ (Mature Entrepreneurship: Key to Success for People 45+)*. Warszawa: Fundacja POLPROM.

Futurage (2011a). *FUTURAGE. A Roadmap for Ageing Research*. Sheffield: University of Sheffield. Available online at: https://cordis.europa.eu/result/rcn/162491_de.html

Futurage (2011b). *FUTURAGE. A Roadmap for Ageing Research, Supplement to 4.1 Final Publishable Summary Report*. Sheffield: University of Sheffield. Available online at: https://cordis.europa.eu/project/rcn/92038/reporting/en

Gdanska Fundacja Przedsiebiorczości (2014). *Opis Produktu Finalnego Projektu Innowacyjnego Pomorska Fabryka Designu (Final Product Description of the Innovative Project Pomeranian Design Factory)*. Gdansk: Gdanska Fundacja Przedsiebiorczości. Available online at: http://efektywni50plus.wwsi.edu.pl/upload/list/publikacja/opis%20produktu%20finalnego.pdf

Howaldt, J., and Schwarz, M. (2010). "Soziale Innovation-Konzepte, Forschungsfelder und -perspektiven (Social Innovation-concepts, research fields and perspectives)," in *Auf dem Weg zu einem postindustriellen Innovationsparadigma (Towards a Postindustrial Innovation Paradigm),* eds J. Howaldt and H. Jacobsen (Wiesbaden: VS Verlag für Sozialwissenschaften), 87–108.

Howaldt, J., and Schwarz, M. (2016). *Social Innovation and its Relationship to Social Change: Verifying Existing Social Theories in Reference to Social Innovation and its Relationship to Social Change (D1.3)*. Dortmund: TU Dortmund University. Available online at: https://www.si-drive.eu/wp-content/uploads/2016/07/SI-DRIVE-D1-3-Social-Change-final-260416-2.pdf

Hubert, A., Bonifacio, M., and Konings, J. (2010). *Empowering People, Driving Change: Social Innovation in the European Union*. Brussels: Bureau of European Policy Advisors.

InnovAge (2016). *Final Report Summary*. Sheffield: University of Sheffield. Available online at: https://cordis.europa.eu/result/rcn/182216_en.html

Isele, E., and Rogoff, E. G. (2014). Senior entrepreneurship: the new normal. *Pub. Pol. Aging Rep.* 24, 141–147. doi: 10.1093/ppar/pru043

Jurek, P. (2012). *Metody Pomiaru Kompetencji Zawodowych (Methods of Measuring Professional Competences)*. Warszawa: MPiPS, Departament Rynku Pracy.

Kautonen, T. (2008). Understanding the older entrepreneur: comparing third age and prime age entrepreneurs in Finland. *Int. J. Business Sci. Appl. Manage.* 3, 3–13.

Kautonen, T. (2013). *Senior Entrepreneurship. A Background Paper for the OECD Centre for Entrepreneurship, SMEs and Local Development*. Turku: University of Turku and OECD Publications.

Kautonen, T., Down S., and Minniti, M. (2013). Ageing and entrepreneurial preferences. *Small Business Econom.* 42, 579–594. doi: 10.1007/s11187-013-9489-5

Kesselring, A., Smith, S., Dobner, S., and Schrammel, M. (2014). *Social Innovation for Active and Healthy Ageing: A Case Study Collection*. Brussels: King Baudouin Foundation.

Khalil, M. A., and Olafsen, E. (2010). "Enabling Innovative Entrepreneurship through Business Incubation," in *The Innovation for Development Report 2009–2010*. ed A. López-Claros (Basingstoke: Palgrave Macmillan), 69–84. doi: 10.1057/9780230285477_2

Khan, H. (2013). Five *Hours a Day: Systematic Innovation for an Ageing Population*. London: Nesta.

Klimczuk, A. (2015a). *Economic Foundations for Creative Ageing Policy, Volume I: Context and Considerations*. New York, NY; Basingstoke: Palgrave Macmillan.

Klimczuk, A. (2015b). "Social Innovation Europe: Country Summary: Poland. Social Innovation in Poland," in *Social Innovation Exchange, European Commission's DG Enterprise and Industry*. Available online at: https://ssrn.com/abstract=2598560

Kubicki, P. (2012). *Ocena Kompetencji Osób 50 + w Zakresie Przedsiebiorczości Oraz Działan Słuzacych Wydłuzeniu Aktywności Zawodowej - Analiza Desk Research (Assessment of Competences of People 50+ in the Field of Entrepreneurship and Activities Aimed at Extending Professional Activity: Desk Research.)*. Warszawa: Fundacja Gospodarcza.

Mansfield, M. (2018). "Startup Statistics – The Numbers You Need to Know," in *Small Business Trends*. Available online at: https://smallbiztrends.com/2016/11/startup-statistics-small-business.html (accessed October 23, 2018).

Martin, R., and Osberg S. (2007). "Social entrepreneurship: the case for definition." in *Stanford Social Innovation Review*, Vol. 5, 29–39. Available online at: https://ssir.org/articles/entry/social_entrepreneurship_the_case_for_definition

Martinelli, F. (2012). "Social innovation or social exclusion? Innovating social services in the context of a retrenching welfare state," in *Challenge Social Innovation. Potentials for Business , Social Entrepreneurship, Welfare, and Civil*

Society, eds H.-W. Franz, J. Hochgerner, and J. Howaldt (Berlin; Heidelberg: Springer VS), 169–80. doi: 10.1007/978-3-642-32879-4_11

Matricano, D. (2018). Grey vs. young entrepreneurs: are they really that different in terms of entrepreneurial intentions? Empirical evidence from Italy. *Int. J. Business Manage.* 13:76. doi: 10.5539/ijbm.v13n2p76

Mayring, P. (2000). Qualitative content analysis. *Forum Q. Res.* 1. doi: 10.17169/fqs-1.2.1089

McElroy, M. W. (2002). Social innovation capital. *J. Intell. Capital* 3, 30–39. doi: 10.1108/14691930210412827

Meuser, M., and Nagel, U. (1994). "Expertenwissen und Experteninterview," in *Expertenwissen: Die institutionalisierte Kompetenz zur Konstruktion von Wirklichkeit (Expert knowledge: the institutionalized competence to construct reality)*. eds R. Hitzler, A. Honer, and C. Maeder. (Wiesbaden: Vieweg+Teubner Verlag), 180–192. doi: 10.1007/978-3-322-90633-5_12

Moore, M.-L., Westley, F. R., and Nicholls, A. (2012). The social finance and social innovation nexus 1. *J. Soc. Entrepr.* 3, 115–32. doi: 10.1080/19420676.2012.725824

Mulgan, G., Tucker S., Ali, R., and Sanders, B. (2007). *Social Innovation: What it Is, Why it Matters and How it Can Be Accelerated, 3rd edn*. Working Paper. London: Young Foundation.

Murray, R., Caulier-Grice, J., and Mulgan, G. (2010). *The Open Book of Social Innovation, Social Innovator Series: Ways to Design, Develop and Grow Social Innovation*. London: The Young Foundation.

Naegele, G., and Heinze, R. G. (2012). "Social Innovations in Ageing Societies," in *Challenge Social Innovation. Potentials for Business, Social Entrepreneurship, Welfare and Civil Society*. eds H.-W. Franz, J. Hochgerner, and J. Howaldt (Berlin; Heidelberg: Springer VS), 153–67.

Nicholls, A. (2006). *Social Entrepreneurship: New Models of Sustainable Social Change*. Oxford: Oxford Univ. Press.

Noruzi, M. R., Westover, J. H., and Rahimi, G. R. (2010). An exploration of social entrepreneurship in the entrepreneurship era. *ASS* 6, 3–10. doi: 10.5539/ass.v6n6p3

OECD (Organisation for Economic Co-operation and Development) and European Commission (2012). *Policy Brief on Senior Entrepreneurship: Entrepreneurial Activities in Europe*. Luxembourg: OECD Publishing.

OECD (Organisation for Economic Co-operation and Development) and Eurostat (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th edn: The Measurement of Scientific, Technological and Innovation Activities*. Paris; Luxembourg: OECD Publishing.

Pue, K., Vandergeest, C., and Breznitz, D. (2016). *Toward a Theory of Social Innovation. Innovation Policy Lab White Paper 2016-01, 2015*. Available online at: https://ssrn.com/abstract=2701477

Rammert, W. (2010). "Die Innovationen der Gesellschaft (Innovations in society)," in *Soziale Innovation: Auf dem Weg zu Einem Postindustriellen Innovationsparadigma (In Social Innovation: Towards a Post-Industrial Innovation Paradigm)*, Dortmunder Beiträge zur Sozialforschung. eds J. Howaldt and H. Jacobsen (Wiesbaden: VS Verlag für Sozialwissenschaften), 21–51.

Richardson, R., Healey, A., and Morgan, K. (2014). *Smart Specialisation for Regional Development: Embracing Social Innovation, Project Deliverable 2.1 2014*. Available online at: http://www.cardiff.ac.uk/cplan/research/smartspec

Riess, B. (2010). *Corporate Citizenship Planen und Messen mit der iooi-Methode (Corporate Citizenship Planning and Measuring With the iooi method)*. Gütersloh: Bertelsmann.

RKW (2013). *Gründerinnen und Gründer ab Dem Mittleren Alter: Schlüsselfaktor Für Die Wirtschaft (Middle-Aged Entrepreneurs: Key Factors for the Economy)*. Eschborn: RKW. Available online at: https://www.rkw-kompetenzzentrum.de/gruendung/studie/gruenderinnen-und-gruender-45plus/

Robinson, J. (2006). "Navigating social and institutional barriers to markets: how social entrepreneurs identify and evaluate opportunities," in *Social Entrepreneurship*. eds J. Mair, J. A. Robinson, and K. Hockerts (Basingstoke: Palgrave Macmillan), 95–120. doi: 10.1057/9780230625655_7

Rzeczkowska-Owczarek, M., Iranska, A., Owczarek, D., and Pokropinska, E. (2014). *Raport Koncowy. Ewaluacja testowania Modelu Aktywizacji Zawodowej osób 50+ Zamieszkałych w woj. Pomorskim Łaczacego Kreatywność z Przedsiebiorczościa, w tym Wpływu Modelu na Uczestników (Final Report: Evaluation of Testing the Professional Activation Model of People Aged 50+ Living in the Province Pomeranian, Combining Creativity and Entrepreneurship, Including the Impact of the Model on Participants)*. Szczecin: Zachodniopomorska Pracownia Badawcza.

Schumpeter, J. A. (1934). *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge: Harvard University Press.

Schumpeter, J. A. (1950 [1942]). *Capitalism, Socialism and Democracy*. New York, NY; London: Harper.

Schwarz, M., Kopp, R., and Howaldt, J. (2008). Innovationen (forschend) gestalten – Zur neuen Rolle der Sozialwissenschaften (Shaping innovations (in research): on the new role of social sciences). *WSI-Mitteilungen* 61, 63–69. doi: 10.5771/0342-300X-2008-2-63

Shaw, E., and de Bruin, A. (2013). Reconsidering capitalism: the promise of social innovation and social entrepreneurship? *Int. Small Business J.* 31, 737–46. doi: 10.1177/0266242613497494

Small Business Encyclopedia (2018). "Business Incubator," in *Small Business Encyclopedia*. Available online at: https://www.entrepreneur.com/encyclopedia (accessed November 12, 2018).

Stumbitz, B. (2013). *Social Entrepreneurship Shaped by the Life Course: A Case Study of Older Social Entrepreneurs in the UK*. A Thesis Submitted in partial fulfillment of the Requirements of Middlesex University for the Degree of Doctor of Philosophy. London, UK: Middlesex University.

Stypinska, J. (2018). The enterprising self: a panacea for all or new fictitious social role for older adults? The analysis of European policies for senior entrepreneurship. *J. Popul. Ageing* 11, 1–23. doi: 10.1007/s12062-017-9214-2

Walker, A. (2014). "Social Innovations Promoting Active and Healthy Ageing," in *Paper presented at InnovAge Forum Riga*, September 25. (Latvia) Available online at: http://www.innovage.group.shef.ac.uk/assets/files/Walker_INNOVAGE_Forum_2_-_25.09.2014.pdf

Weaver, P. M., and Kemp, R. (2017). "A review of evaluation methods relevant for social innovation: with suggestions for their use and development," in *TRANSIT working paper EU SSH.2013.3.2*. Available online at: http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/267%20TRANSIT_WorkingPaper%2014_Monitoring_final_pmw.pdf

WHO (World Health Organization) (2012). *Strategy and Action Plan for Healthy Ageing in Europe, 2012-20*. Copenhagen: World Health Organization European Region. Available online at: http://www.euro.who.int/__data/assets/pdf_file/0006/161637/WHD-Policies-and-Priority-Interventions-for-Healthy-Ageing.pdf.

Zahra, S. A., Gedajlovic, E., Neubaum, D. O., and Shulman, J. M. (2009). A typology of social entrepreneurs: motives, search processes and ethical challenges. *J. Business Ventur.* 24, 519–32. doi: 10.1016/j.jbusvent.2008.04.007

Zajaczkowska, A. (2013). *Raport Ewaluacji Zewnetrznej Wstepnej Wersji Produktu Finalnego pt. Model kompleksowego Wsparcia osób 50+ prowadzacego do Wywołania w Nich Gotowości do Załozenia Własnej Firmy - Preinkubacja Przedsiebiorcza (External Evaluation Report of the Preliminary Version of the Final Product "A Model of Comprehensive Support for People Aged 50+ Leading to Their Willingness to Set Up Their Own Business - Entrepreneurial Pre-incubation")*. Gdynia: Fundacja Gospodarcza.

Zapf, W. (1989). Über soziale Innovationen (On social innovation). *Soziale Welt* 1–2, 170–183.

Zissimopoulos, J., and Karoly, L. A. (2007). "Transitions to self-employment at older ages: the role of wealth, health, health insurance and other factors," in *Labour Economics,* Vol. 14, 269–95. Available online at: https://EconPapers.repec.org/RePEc:eee:labeco:v:14:y:2007:i:2:p:269-295

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Proxy Users Enable Older People Creative Writing on the Web

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This paper presents several state-of-the-art concepts within Internet studies and applies them to the creative writing of older people using the Internet. For more than 10 years two creative Web users aged 80+, assisted by younger proxy users, were involved in preliminary action research. It was aimed at finding patterns of inducing older people's creativity and sharing their wisdom with the general Internet audience. The effectiveness of conducted action research in transferring wisdom using silver digital content is high. It is demonstrated with (a) qualitative participants' insights, (b) the quantitative description of statistics of blog visits, and (c) the social significance of the topics covered in the created content. Lasting for more than a decade and located within the space of socio-technological solutions in Central and Eastern Europe, the results delivered patterns of emerging technologies aimed at enhancing older people's creativity on the Web. The insights from those two action-based case studies enabled the development of new hypotheses. New directions of further, more advanced research of older users' activity are based on interdisciplinary studies at the crossroads of public health, sociological theory, gerontology, and human-computer interaction studies. New research questions are presented, to be explored within the social scientific studies of the next-generation Internet. Departing from the established concepts and preliminary research, the authors hypothesize that: (1) in order to optimize non-human technology-based assistants, human proxy users should be researched; (2) voice assistant technology could become the primary proxy for a production of silver digital content; and (3) interactive and intelligent technology will be the substitute for social actors that prevent exclusion and disengagement. The remaining research question also refers to the conditions under which the technology can be a viable substitute for proxy users.

Keywords: technology and older people, gray digital divide, creative writing, social inclusion, artificial intelligence, digital wisdom, voice assistants, participatory action research

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INTRODUCTION

The aging population is not sufficiently self-represented in social media. Why do senior citizens not write and publish online, and in effect disengage from larger digital public sphere? In terms of disengagement and activity, there should be space for consistent and enjoyable activity in the lives of aging people.

This article broadens the discussion on the means by which to prevent digital disengagement, already started in a semi-peripheral Eastern European context. The results of preliminary action research on the creative writing and publishing of older people are helpful in developing the concept of so-called "silver digital content," first presented in literary studies focused on creative

writing (Toczyski, 2017), and transferring it to the area of social sciences. There is no lack of proven opinion leaders among senior citizens, but there is a lack of digital skills and in effect unavailability of social media interfaces for older people. As long as technological innovation and entrepreneurship cannot sufficiently respond to this challenge, social innovation can fill the gap. The role of inclusive design in making social innovation happen has already been noticed. The concept of a digitally wise human, capable of using others' digital skills to achieve their goals online has been developed within Internet studies. Departing from innovation and digital inclusion studies, the idea of including successful and productive seniors to the social Web is developed.

Writing further on silver digital content (rather than gray content) and discussing the procedure for its development and publication, we reveal our attitude to the research problem posed, in accordance with the approach adopted in research in action. Namely, we think that older people can be great creators of textual (and perhaps logo-visual or audiovisual) digital content. By metaphorically coining this term with reference to the color of silver rather than gray, we try to appreciate the postulated digital presence and digital wisdom of people in the last stages of life: advanced maturity and old age.

Creating such metaphorically described content can be achieved with the cooperation of helpful proxy users and older people. It enables older users to develop their creative writing on the Web. Theorizing such cooperative exchange in terms of digital wisdom leads to the action research report, which describes the research that has been conducted for over 10 years.

A large part of the article will be devoted to the description of how older people currently publish content on the Internet. This is done through another person, a proxy user. The digitally wise human does not have to be a digital native as even a digital immigrant can achieve digital wisdom. For people aged 85 or more and publishing on the Web (digital sages 80+) creative writing results in social media connection and new media inclusion. However, it is mainly an expression of intergenerational transfer in which seniors' wisdom matches the digital competences of their younger cooperators. Such a model of seniors' creative writing on the Web is illustrated by action research and metaphorically named silver digital content.

Proxy users have heard from participants that this digital work has an essential function in their lives, including a therapeutic and compensatory function. They receive motivating feedback from readers, often further inspiring, challenging and stimulating them to maintain their intellectual readiness.

Why do we write about proxy users, when there are already technological devices such as smart assistants? Because their functionality is limited as there is no software yet to create a voice and have a blog written and published. We want to show why this is the direction that the development of technology should take.

We are talking about a barrier that we want to overcome in practice, not just in theory. The article will, therefore, help those responsible for the design of new technologies and human-computer interactions.

We want to show what is still missing: what functions the imagined assistant lacks, so that older people can simply speak to the assistant and after 10 min have a Facebook entry and a discussion with the public. Our thoughts are focused on the fact that assistants could in the near future take over the role of technological facilitators for older people, for example, proxy users.

Business circles are already working on developing similar technologies, and soon voice interfaces will be ready and will even improve the creative use of Facebook or other social media spaces. This article indicates new dilemmas and directions of development of technologies for older people.

After describing the issues of the gray digital divide and digital wisdom created by tandems of older users and younger intermediary users, we present a report on a study in action, which may serve as a pilot study for people interested in improving the creative well-being of older people.

We write that voice interfaces combined with artificial intelligence (AI) pose new challenges and questions. To what extent should the AI interfere with an older person's writing style? Press interviews are not literal quotations either; the journalist prepares them. To what extent should technology interfere with the content? The assistant knows more quickly than an older artist what he or she wants to say, although the creator does not find the right words. As a grandson may suggest to his grandmother, when she cannot find the right words, technology might assist her in doing so. We will also raise the question of the extent to which the assistant can be given a topic, for example, to write it in such a style that it evokes emotion such as when AI uses words that increase the chances of a recipient being emotionally moved. Ultimately, the question is whether the roles will turn around at the end of the process. Older people will need technology as a generator of interesting threads in content and wisdom, but the message itself will be prepared by AI. AI will collect and search for wisdom among people and pass it on to others.

However, we start with basic conceptual categories and research in action that has lasted over a decade.

Let us begin with an obvious statement, but rarely expressed. One of the few who formulated it is the media expert (Brake David, 2014, p. 595, 598). He states that although older people have many more experiences which they might want to share; it is young people who are more intense creators of Internet content than older people. Developing this idea, it can be added that the multiplicity of experiences that older people might want to share is already derived from their own birth certificate. With time, experiences accumulate, and this accumulation could encourage the sharing of some of them—subjectively considered to be particularly worth telling.

Anticipating the metaphors present in the literature, which we would like to recall, one could say that older people—figuratively: gray (gray-haired)—do not take on the role of digital sages, because they feel that they are digital immigrants—people with a lower status in the digital world than digital natives. Meanwhile, in cooperation with natives, they could achieve the ideal of digital wisdom and offer silver content to online readers. Only this last slogan—silver content—is the new complement to the metaphors already well-established in the literature on Internet science. The author of the digital wisdom is Prensky (2009), who, after

several years decided that to divide netizens into age groups is insufficiently accurate. He decided to complement it with the concept of digital wisdom, which can become a part of both groups: younger and older.

We place our reflections on the above topics in the analysis of several types of exclusion: media, information, and digital. In the literature one can find the term media exclusion. What does it mean? The authors usually understand this phenomenon as excluding a group from the media content or selection of topics presented in the media, when one group gets much more attention than others (Zbyrad, 2013, p. 98). We suggest enriching these two terms with a statement that media and information exclusion can take the form of not only the consumption of media content, but also their production. At a later point in this paper, we will focus on the issue of exclusion from the production of the content, of new media, and on creative writing and cooperation in publishing as well as its effect as a mechanism to counteract exclusion.

BETWEEN THE GRAY OF THE DIGITAL DIVIDE AND THE SILVER OF THE DIGITAL ECONOMY

The British scholar Selwyn (2010) uses the concept of the digital divide. However, in earlier works, he (Selwyn, 2004) was one of the few who asked the question about the validity of the use of the term "divide" or "exclusion" in relation to Internet technology. He noted that as early as the nineties political discussion in the Western world focused on the haves and have-nots of information, that is, people with or without information resources. At that time, the concept of informational and communicative poverty also appeared, but over time the most popular slogan became the concept of the digital divide, or digital separation (Selwyn, 2004, p. 344).

What are the sources that divide those into the excluded and those actively using information technology? Social resources are conducive to the active use of technology. As Selwyn says, we should note that when an individual has obtained the right conditions for access to different technologies, the lack of significant use of them is not necessarily due to technological factors (such as lack of physical access, skills or operational efficiency) or even psychological factors (such as restraint or anxiety related to the use of technology), as it is generally accepted by technologists (Selwyn, 2004, p. 349). So, what affects the involvement of individuals in the use of information and communication technologies? Selwyn responds with a complex mix of social, psychological, economic, and above all pragmatic reasons (Selwyn, 2004, p. 349)—to what extent people can use social resources to make access useful (Selwyn, 2004, p. 349). Physical access to the technology itself—which we often forget—is not yet a social resource.

Now, let us discuss old age. Old age is conceptualized as a gray period of life, and commonly metaphorically referred to as the "gray tsunami". If the great wave is to flood a land, then this land—it seems—is less numerous in Western societies, than young people. The younger ones are to be flooded by a wave of seniors (why, however, destructive?). In 2003, Peter Millward, then a British student and volunteer working for the social organization Age Concern, used the term gray, digital divide. In this way, he referred to the social digital divide he observed, which resulted in the declared disinterest of older people in using the Internet.

This exclusion of older people from the Internet space was associated with the lack of sufficient skills to use the Internet. This is at least partially due to a fact that a typical WIMP (windows, icons, mouse, and pointer) paradigm seems to be problematic to use by older adults because of, for example, their lowered motor control, which may cause problems in operating a mouse as well as the need to get acquainted with the vast set of concepts connected with current standard computer or mobile devices (such as folders, files, or programs). The step in the evolution of computer systems that encouraged older adults to use computers and especially touchscreen devices was the development of speech-to-text technology, and in effect, voice search and voice typing, which has been rated positively by users (Kumar et al., 2012). In effect, these technologies have become very popular in recent years, and not only among older adults. Currently, disconnecting voice search from a smartphone, and enhancing it with AI creates a product (namely voice assistant) potentially very interesting for older adults, which is connected to Brandtzaeg and Følstad (2017) conclusions that unlike other devices and software, conversational agents ought to be created as tools, toys, and friends at the same time. Such devices can become facilitators of silver digital content creations in the near future. Because they use a natural voice as their interface, voice-assistant devices are also very interesting from this perspective, because they are one of the few examples where technology itself can be a means to lowering the digital divide.

On the other hand, the declaration of lack of interest in participating in online activities, is an expression of reluctance to admit to others that such skills are lacking. Peter Millward was the first to publish his observations under the slogan "gray digital divide" (Millward, 2003). Moreover, even though in his later career he did not study this subject scientifically, his work was noticed, and the metaphor of the gray digital divide began to be used by other authors as well.

It seems that this metaphor carries a certain amount of kindness for older people, but it also implies a problem. What is gray—it is problematic, because it is either non-descript (mediocre) or not fully unambiguous (such as "gray zone"). Meanwhile, the metaphor of the silver economy has already settled in two cycles: academic and public policy analyses, referring to silver as a symbol of old age when talking about the purchasing power of seniors. Silver is to be an economy in which consumers—but less often producers—are older people. What is silver? According to Klimczuk (2011), it refers primarily to senior-oriented and gerontechnology-oriented, understood as a new scientific-research and implementation paradigm.

One could consider for a long time whether the deep source of this metaphor is merely an image associated with age reflected by gray hair, or something more. When talking about the silver economy, the question about the silver digital economy should appear immediately when considering Internet science. This is a

question about older producers, brokers, and consumers in the online environment. Old age in combination with the Internet is sometimes imagined in the form of silver surfers Choudrie et al. (2013). Before that, the concept of silver surfers has already appeared in other work by Jyoti Choudrie, written with Susan Gray and Nicholas Tsitsianis—on how to encourage older people to use the Internet (Choudrie et al., 2010). On the other hand, it is almost impossible to find links between the old and the silver in old age, with reflection on the work of older people and the digital content they produce. As the Internet can be used to stay active and engaged in the social interactions, for example, through social media, we could assume, according to the activity theory of aging, that silver content creators' quality of life will be enhanced thanks to participation in the new media.

WISDOM AND DIGITAL WISDOM

Let us now consider more closely the most-known metaphor of the digital divide: the distinction between digital natives and immigrants in comparison with digital wisdom. The author of this very popular distinction of people as native digital and inflow to the digital world is Prensky (2001a,b). The distinction, which appears in over ten thousand texts, has long been associated with its author. Separated from him, it remains one of the most widely known snapshots between Internet users of all ages. However, following the history of this concept in Prensky's work, we reach the third and least known concept from his theory—the category of digital wisdom.

For the sake of sufficient deliberate consideration of digital wisdom, we first need to know what wisdom is as such. So, before we discuss digital wisdom, let us look at wisdom.

It turns out that the unambiguous and commonly shared definition of wisdom is simply lacking, and even the link between wisdom and old age is not apparent and unambiguous in the literature. Nevertheless, although the concept of wisdom has not been agreed on so far, it is used colloquially and academically, with the intention of emphasizing the positive, beneficial aspects of acquiring life experience.

As Susanne König and Judith Glück wrote in an encyclopedic entry on the topic of academic wisdom, researchers are still arguing about its universal definition. They are only in agreement on two points. First of all, wisdom is to be an ideal final state of human development, which is fully achieved by human beings with difficulty—if at all (König and Glück, 2014, p. 7143). Second, researchers agree that wisdom is multifaceted, as it concerns the cognitive, emotional, and motivational sphere. On the other hand, the distinction and the disagreement over it concerns, above all, general wisdom—the knowledge and understanding of life in general (König and Glück, 2014, p. 7143)—and personal wisdom, or knowledge and understanding based on personal experience throughout the course of life (König and Glück, 2014, p. 7143).

Regardless of this distinction, it can also be assumed that there are two paths to defining wisdom. The first is the cataloging of the components of wisdom. Glück and Baltes (2006) recall the decades of research by the team of Paul B. Baltes on the psychology of wisdom, resulting in the so-called Berlin model of wisdom or the Berlin paradigm of wisdom. In this model, wisdom is defined as expert knowledge about the basic pragmatics of human life. The criteria for measuring knowledge related to wisdom were developed in the course of research, and the result of this reflection is an attempt to identify interventions that encourage individual expression of knowledge associated with wisdom (Glück and Baltes, 2006, p. 686). These interventions are simple and boil down to asking respondents to try to provide a wise answer to the dilemmas presented to them (Glück and Baltes, 2006, p. 686). In the second approach to defining wisdom—referred to by König and Glück (2014)—the authors understand it as referring to the integration of different dimensions of personality: those connected with the cognitive, reflective and affective function of the mind.

Interestingly, wisdom is not necessarily bound to old age—and there are even arguments for the opposite. Edmondson (2013, 2015), an Irish researcher of issues related to old age and wisdom, writes in the syllabus of her university seminar on aging, life course and sociology of wisdom, that for millennia, human aging has been associated with the development of wisdom— based on accumulated opportunities, hidden, or open, responding to other people, to oneself and deep problems of human existence, for which there is no answers (Edmondson, 2013). Achieving this socially recognized state is supposed to balance the emotional pain of aging, but also to increase the possibility of older people participating in social life. Therefore, wisdom appears as a factor that alleviates old age and as a valuable resource offered to the public by older people. Furthermore, Edmondson says that older people are expected to be wise, but the concept of wisdom becomes unclear, which makes it more difficult for older people to respect themselves (Edmondson, 2013). In this brief observation of Irish social reality, there is a statement of change in the social perception of wisdom and old age. Both the image of older people ceases to be clearly associated with wisdom, and the image of wisdom ceases to have evident attributes—to the extent that it is not even always known to what it refers to.

Traces of this approach can already be seen in the previous literature. Meacham (1990) recognizes that wisdom does not have to be associated with old age and presents a long discussion on this subject. It can be summarized as follows: older people do not like to speak about their competences in terms of wisdom; they are more distanced from determining their life experience as wisdom. At a younger age, people tend to describe older people as wise. Nevertheless, older people are also forced to use the category of wisdom in their thinking. Why? In a society where entering old age has for centuries meant entering the risk of losing control over resources in your life as well as losing power, respect, and status, it is reasonable to believe that some special properties have been achieved that in the course of life younger people cannot break away from (Meacham, 1990, p. 197). Among these properties are learning through experience, being mature and respected, being a source of good advice—but also knowing when to stop yourself—and understanding others and being interested in them. The list also includes features such as philosophy, insight, and discernment. Such a social perception

of wisdom also includes the appreciation and valorization related to old age. These are features that are entirely unattainable other than through six or seven decades of professional and emotional life.

However, Meacham complicates the picture, indicating that this experience is the greatest threat to wisdom, especially if it only leads to the accumulation of information, success and power (Meacham, 1990, p. 209). Thus, experience can also lead to the risk of losing wisdom, which may occur, for example, in the social atmosphere of the growth of stereotypes and intolerances or during the sudden technological or cultural change. Therefore, with increasing age, —one must take more effort to preserve wisdom. This is a unique view, showing the complexity of linking wisdom with age. It is particularly worth remembering the idea that it is difficult to attribute wisdom to all older people, and the development of technology can lead to seniors losing of wisdom.

As Meacham says, only a rather limited and unique set of experiences can be helpful in maintaining or restoring wisdom, and these experiences take place in an atmosphere of safety, as part of a supportive interpersonal relationship where people can safely discover and reveal limitations and doubts, concerning what they know (Meacham, 1990, p. 209). Such an atmosphere is conducive to shaping wisdom. It is not the essence of wisdom—Meacham says—that the quality of our words and deeds change to more complex, sophisticated, or even deep words and deeds, because experience, and maturity only changes the quality of how wisdom is expressed—from simple to profound words—without touching the heart of wisdom (Meacham, 1990, p. 209). The core of this is to have an attitude that combines the belief that knowledge is unreliable with the struggle for a balance between knowing oneself and doubting oneself. One would think that this is a call to cognitive prudence—but is undoubtedly beyond measure. Excessive doubts is a factor unfavorable to wisdom.

When we look at the functioning of the notion of wisdom in literature, let us assume that wisdom is where people from a given population are relatively unanimous in recognizing it. A person that is considered wise will be such in perception and opinion of individual people or social groups. The measurement of wisdom is difficult, for example, because measuring tools would have to be made by people who are wiser than those subject to measurement. However imperfect this conclusion is, it seems sufficiently concise with the further goal—to understand digital wisdom.

THE DIGITAL WISDOM OF AN IMMIGRANT

Let us return to the question of whether you can be digitally incompetent but digitally wise. In 2009, when the debate on binary digital divides had not yet been heard, Marc Prensky faced such a question. Prensky was already known at the time for introducing concepts that were well-suited to academic and social needs. In 2001, he used the distinction between digital natives and digital immigrants, which then spread widely in the debate on the development of the Internet in academic circles and among practitioners (Prensky, 2001a,b). That short work in two episodes—as the citation index indicates—was referenced in over ten thousand other texts over the past decade. These were often critical texts about the simplified distinction used by Prensky (Helsper and Eynon, 2010), and this opposition itself is sometimes described as dangerous (Bayne and Ross, 2007).

It cannot be doubted, however, that this distinction is one of the best known, where the Internet is mentioned with reference to the dissonance between different age groups. The author himself later developed his concept, writing about, for example, the immigrant accent of newcomers to the Internet (Prensky, 2003). After 10 years, in the collective volume on the deconstruction of the digital natives, Prensky has already clearly associated his divide with digital wisdom (Prensky, 2011). This concept was used for the first time 2 years prior—in a work titled with various metaphors; digital intelligent human, digital natives, digital immigrant, and digital wisdom (Prensky, 2009).

Undoubtedly, through these metaphors, Marc Prensky opened up new horizons for meditations on the Internet—if he did not say anything new, at least he said it more understandably, and thus submitted to a wider and more penetrating discussion. Let us try to look at the concept of digital wisdom and how it is understood in literature.

It is worth noting that although this is a discussed concept, it seems to arouse less interest (also critical) than the divide into online natives and newcomers. This was criticized by scholars as almost offensive (Brown and Czerniewicz, 2010). There are geographical spaces in which the word native does not refer to superiority or the future, but rather to what is lagging behind and civilized only by settlers. Critics note that Prensky first used these colonial metaphors, which he later replaced with an evolutionary metaphor: homo sapiens digital. This, in turn, implies superiority, progress, advantage, and prospects for those who evolve in the digital direction—but also stagnation for those who do not evolve. It is an assumption that people are born into something that determines them and cannot change them—it is also problematic for critics (Brown and Czerniewicz, 2010). On the other hand, there are also authors who read Prensky's idea differently: Originally pushing away older people, and especially older teachers, as digital immigrants who have to try to adapt to the use of digital technologies, Prensky admitted finally that they could aspire to achieve "digital wisdom" (Richardson and Jelfs, 2015, p. 91).

So, emerges the third concept next to the native and immigrant, which should be labeled as a digital sage. Although Prensky (2009) used the slogan homo sapiens digital, digitally wise human, or digital sage seems more accurate. It goes here not only for thinking and the resulting efficiency in the use of digital technologies but also for the general capital of wisdom, only taking into account this digital efficiency. Therefore, it is digital wisdom, not digital thinking which is helpful in understanding the relationship between the two processes of immersion—deepening—in the Internet space: between digital media education of natives and the digital inclusion of immigrants. The slogan "digital wisdom" supplements the processes of digital education and digital inclusion with the intergenerational transfer of a potentially valuable resource: wisdom.

The path of digital immigrants to digital proficiency deserves special attention. The internship of digital natives in the use of the Internet is often longer even though they are younger people: in the situation of the rapid development of technology they gain experience in the course of their lives with the Internet—and thus experience—at a much earlier stage than older people. Older people—who in turn, as Biller (2013) states, create a gray digital divide—represent an inflow to the digital world of the population or immigrants.

Digital immigration is still ongoing. Tim Riley notes that in Britain the increase in the use of digital technologies—including the Internet—among pensioners is on the rise. The majority use the Internet according to the consumption pattern—they search for and consume online goods and materials (Riley, 2013, p. 51). Some, however, exhibit a creative pattern, providing their own contribution. They create and share their own content. Riley looked at the online activity of people over the age of 65 and said that some of them are learning digital technology even without intending to get closer to technology. This is a consequence of changes in interests during retirement, such as a new hobby or a re-deepening of the hobby once abandoned due to lack of time. Riley calls this phenomenon re-education of retired content creators in the field of digital technology, following their own initiative.

One would think that although an older person delivering their own content is a digital immigrant, in certain circumstances they can achieve digital proficiency. This is an observation coinciding with the proposal of three authors—Wang et al. (2012)—who propose to move away from the divide into digital natives and digital immigrants. Instead, they propose to adopt the concept of digital proficiency, which would be the ability to reform knowledge and produce information in order to express themselves creatively and appropriately in the digital environment (Wang et al., 2012, p. 409). However, can digital proficiency lead to an increase in the amount of Internet content created and shared by older people on the Internet? Schradie (2011) notes the class gap between producers of Internet content, and the critical mechanism of this inequality is the control of digital tools and the elite habitus, the element of which is the use of the Internet—and information in general (Schradie, 2011, p. 165). The creators of online content differ in terms of resources and opportunities they have—and the class is a differentiating factor. This is the thesis about the equality nature of the Internet. However, the social class is not related to age; different age categories are represented in various social classes. In other words, a higher social class can promote digital proficiency even in older age. Hence, a digitally proficient native does not have to be digitally wise, and a digitally wise immigrant does not have to be digitally proficient. This lack of digital competence and the lack of wisdom can, however, complement each other, leading to the creation of an optimal situation.

The figure of the wise human and his or her wisdom requires determining the place of the latter in the structure of life goals or side effects of the unplanned effects of life. Let us remind that wisdom is often understood as what we are aiming at. Considering the concept of wisdom as such—not digital—an observation was made that very few people are seen as wise. Paradoxically, a wise human is one who knows that the ideal of wisdom is in principle unattainable. This definition, however, does not apply without a valid reason, and when the community considers someone to be wise, it is assumed that wise is the one who was not only in the process of gaining knowledge but is also a resource of life experience. Thus, if we ask who is more likely to bring wisdom to the online communication space, we would point not at digital natives, but at immigrants.

By formulating the above assumption, we make a reservation here that linking wisdom with age is only probable and certainly not absolute. Although there are many people who are colloquially perceived as "old fools," the social understanding of wisdom suggests a multitude of experiences as a condition—(a necessary, though insufficient) wisdom. Life experiences and reflections around them usually accumulate over time. The above mentioned phrase in socio-lingual circulation expresses a certain disappointment with the lack of archetypal wisdom in old age. It can, therefore, be assumed that the wise old man is an archetype, while the wise young man is an exception.

However, with the development of technology, many experiences become less useful—and older people usually cannot use new technologies freely. Still, more often than young people, they have the knowledge or even wisdom flowing from experience in non-internet spaces of social life. This situates them in both a pre- and post-figurative culture, in which they have resources unavailable to young people.

Is it possible to complicate this picture, including the features of a collective culture in which exchange takes place between peers? There are certainly old digitals who can help each other know about effective and active functioning in the new media space. There are also digitally incompetent young people. However, here we focus only on this segment of social reality—in these situations—where we deal with digitally competent young people and digitally incompetent or even excluded seniors. Even if this class of social phenomena was rare, it is worth formulating a particular program of activities for the digital inclusion and solution of even a rare social problem. The proposal of such a program is a suggestion of the solution to the above dilemma through the cooperation of the digitally indigenous and immigrants in tandem.

What would such cooperation require? Probably a bilaterally active—even proactive, with initiative—commitment, and understanding of the above diversity by both parties. A digitally wise human can creatively find himself in the space of the Internet, not so much because of their fluency in using hardware and software that publishes content, but mainly through the interesting content resulting from the experience to convey. Sharing by such experiences of immigrant-seniors is possible through the cooperation of digital natives who could handle hardware and software tools for them. Moreover, the goal of such activity is creative self-expression and maximization of the manifestations of wisdom available on the Internet. The condition for the existence of such cooperation, however, is the awareness of the importance of the digital world in the hierarchy of the digital immigrant's values—even though their decision is to engage in Internet communication, and not, for example, writing letters to the editor.

METHODS

Although this hypothesis paper is mostly conceptual, aimed at developing hypotheses and concepts in terms of interdisciplinary theoretical frameworks, the authors wish not to remain groundless. In order to do so, we will illustrate this concept with several points from the action research report, with reference to research that one of us has conducted for 10 years. Our goal in this part of the text is to recall the research procedure in order to illustrate the problem that has been discussed above in theoretical terms. We use the phrase "silver content," and adopt the study in action method for this reconnaissance. We do not present the full report here but only general comments on the course of the research and main findings. We want to show that silver content requires a lasting and satisfactory existence of at least three elements: design decisions, stimulation, and active support in essential supporting activities.

The term silver digital content has probably been used only once before (Toczyski, 2017). This conclusion has been drawn from the literature review, as presented in the first part of the text. This new term is based on the proxy user's reflections on the participation of older people in the digital space, particularly in terms of creative activity. In our view, silver content meets two criteria of "digital wisdom": firstly, it results from the life experience of the older people and, secondly, it is published in adequate digital forms of communication where one can expect to reach an audience who can access the content on social media platforms or elsewhere online.

Action Research as a Source of Insights in Internet Studies

Well-known in educational research, the action research method is located on the borderline between academic work and social activism. It involves the implementation of socially desirable activities while subjecting them to critical consideration in order to improve the quality of its implementation. It involves an effort to examine the studied phenomenon by provoking its existence, empowering participants to undertake joint action, taking place in non-laboratory conditions, for example, in social reality. The concept of the creative process emerging from this experience of collaboration has provided the participants with the label digital sages 80+, which refers to digital wisdom and to the age of people whose creative activity we have observed, inspired, and enhanced.

While the testing in action method adopted here is not perfect, it is difficult to get a better view of the issues of the silver digital economy and the gray digital divide. A description of the path from the gray digital divide to the silver digital economy, including the issue of creative and productive participation of older people in the online space, could be based on existing data. However, if we search for cases involving the effective creation of such content, this would not necessarily provide us with insight into the process of their creation and publishing. Put simply; it is probably more economical and informational to research in action than to look for effectively completed activities with the purpose of describing them.

The purpose of the research in the action method, used primarily in educational research, is in line with the systematic assistance the proxy users provided to two senior citizens, in their individual processes of creative writing and attracting interested audiences through creativity. The people proxy users work with are aged over 85 and have rich, creative professional life stories. Paradoxically, but also in line with the above-mentioned categories of gray digital divide or new-media exclusion (Siapera, 2011), the development of information and communication technologies excluded their free participation in contemporary creative communication. Both authors were able to create the content through their own efforts while additional activities related to publishing were beyond their capabilities.

Publication of a text requires several auxiliary technical activities, for example, selecting a catchy title that will effectively compete for viewers' attention. This calls for familiarity with the nature of online social media. The approach that proxy users have proposed in this particular study in action combines the media- and content-related perspective. Equally interesting in this approach is the extra-textual question, that is the selection of appropriate digital media, as well as the intra-textual issue concerning just the attributes of the content published in a given medium.

Participants of the Action Research

Two well-educated older people joined the action research: one in 2007 and another in 2012. The first subject, a woman born in 1931, was 75 at the time the research began. The second subject, a man born in 1929, was 83 when joining the action research. This means that the participants grew up in a pre-1939 (e.g., pre-war) Poland, but their potentially critical life events took place during the war and in the post-war People's Republic. They both had successful academic track records in this Central European society, with some exposure to the Western experience. They are considered authorities in their fields but had little experience with new media and Internet-related technology. They were co-initiators of the action. While accessing the action research, they were informed about the academic context of their inclusion into the action. Moreover, they have both willfully become meta-reflective, for example, oriented toward discussing and sharing with both researchers and their readers their emerging creative experience in new media. At the start of the action, this experience was focused on their blogs, but later they changed the digital medium from weblogging to Facebook podcasting or Facebook writing.

The results hereby presented and discussed refer to the 2006 to 2019 period in the case of the first subject and to the 2012 to 2019 period in the case of the second subject. However, 2016 is a landmark because of the change in the Polish digital ecosystem, which resulted in the business-motivated closing of the blogging platform. Both subjects decided to transfer their activities to Facebook. Thus, only the quantitative effects of the research intervention up to 2016 are summarized below.

RESULTS

The effectiveness of action research is illustrated with three indicators: the qualitative insights, the quantitative description

and the social significance of the topics covered in the created content.

Qualitative Effects of the Intervention

The study in action, in this case, consists of being an editor and quasi-publisher of texts published by authors in a multidimensional space of social media: blogs as well as Facebook or Twitter. Proxy users have created an online environment for older people interested in writing and sharing their work. It allows senior citizens to talk about their lives and share their experience and opinions with members of younger generations. Proxy users heard from the authors that this digital work has an essential function in their lives, including a therapeutic and a compensating function. They receive motivating feedback from readers, often further inspiration, which serves as a challenge, stimulating them to maintain intellectual readiness. However, the benefits are mutual. Such work allows the authors to integrate and reinterpret their life experience but also helps readers develop (as evidenced by numerous reactions and comments with thanks: a total of over 8.8 thousand on one of the blogs). In the comments, the word wisdom is also present, which clearly indicates that this work is perceived in this light. Undoubtedly, this activity also encourages the editor to act as a spokesperson for both sides, linking the author and the reader.

Quantitative Effects of the Intervention

Both blogs were popular and gained hundreds of thousands of visits (for detailed information see paragraph below). The number of reads and comments for the published content clearly indicates that there is a need for consumption of silver digital content and that digital wisdom can be effectively transmitted using the Internet.

One of the blogs illustrating the concept of silver digital content has existed since June 2007, on a dedicated blog platform. Until October 9, 2016, it recorded over 170,000 reader visits to sub-pages covering a total of 915 entries. On average, one entry has over 180 visits. A total of over one hundred entries are created per year, and since 2016, the publication of texts has been transferred mainly to Facebook, where some entries are displayed more than 10,000 times and generate vivid reactions (likes, sharing, and other signals that the text has been noticed). This disproportion between, on average, merely hundreds of visits to a single blog entry and thousands of visits to Facebook entries illustrates the media change that took place in nearly a decade of the public existence of the blog. The popularity of Facebook as a space for creative writing has outpaced the popularity of dedicated blog platforms.

The other blog does not exist on a separate blogging platform but, instead, within a journalism portal. It has existed since November 2012, and the visitor counting system has registered over 1.48 million visits to a total of 434 entries until 2016. On average, therefore, over 3.4 thousand people read each entry, and more than one hundred entries are created each year. In addition to the blog as a source of visits, posts to a Twitter account are also occasionally sent. However, most traffic to the blog comes from the new entries appearing on the main page of the journalism portal. In 2017 the blogging platform was closed, the content archived, and the publishing transferred to Facebook. It gained popularity there, resulting in two exceptional blog posts read more than 400,000 and 500,000 times.

Forms and Themes of the Created Content in Relation to Digital Wisdom

One element of the adopted action research approach that was particularly important for the effects of the intervention and for the genres, was the lack of delays in publishing. The texts were released at most within 24 h after their delivery, and usually immediately. It resulted in specific results of the intervention.

One of the first interventions made in both cases took place during the initial phase of each blog: proxy users encouraged both bloggers to devote one entry to one issue. The authors' habits developed when they used to manage regular sections in various periodicals and, as a result, they tended to use the space available at a given moment, without perceiving the digital space as unlimited and divisible. Meanwhile, raising a few topics in one entry resulted in readers being less engaged in the content, for example, there were fewer comments, diverging discussions into several directions, undermining the overall dynamics. In turn, when topics were allocated to separate entries, this boosted readers' response.

Interestingly, neither of the authors wanted to join the discussions under their texts on a regular basis. They only did it occasionally. However, they were happy to comment on the content of the readers' comments in their next entry, summarizing the discussion. Most often, they referred only to selected topics and had no ambition to comment on all comments made by readers. This inspired new discussions, and the process was repeated.

A genre common to both blogs was a journalistic article bordering on a commentary and a column, mostly personal but not jocular. These texts were written in a journalistic style, sometimes in a harsh tone of opposition to reality. These articles were often related to public affairs because both authors devoted their professional lives to working in both formal and informal education (universities, scouts groups, and group animation) and in the health care system (a hospital, a clinic, and a hospice).

During the presented period regular memories also appeared in their works, mostly referring to the current situation and pointing to some analogies to the personal experience of the past. These memories in both blogs reached back to the authors' childhood, for example, to the pre-war years. The authors invoked the Second World War and post-war years, international cooperation (whether academic or ecumenical) in the 1970s and 1980s, as well as the situation of becoming and being an older human. It can be assumed that writing was a function of organizing these experiences.

In both blogs, debates on morality, ethics, axiology, civilization, religion, European values, the problem of anti-Semitism, violence, and collective memory also appeared in the discussed period.

One of the blogs repeatedly revoked the topic of quasi-retreat reflections, which is a record of reading religious texts. This corresponded with the author's professional specialization. The

popularization of developmental biomedicine can be considered as its equivalent in the other blog because the other author's professional specialization is related to that area.

The authors' own hobbies were presented by inviting the audience to share the experience. In one case, the author offered recommendations for opera music whereas the other recommended specific reportages.

A rare yet regular type of entry involved farewells, commemorating deceased friends or public figures who were known to the authors.

Whenever the public debate in Poland focused on specific issues related to world-views, both authors were vividly involved in these discussions, usually with a slight delay vs. the press releases. These were critical-political and ideological texts at the time of publication: their usefulness may be evidenced by the fact that readers were interested in discussing their content or sharing them on social media.

The selection of topics by both subjects participating in the research leads to the conclusion that their potential of wisdom has been successfully transferred to the sphere of digital genre-communication forms. In this process, the concept of digital wisdom, as it has described in the introductory sections, has been clearly manifested.

FURTHER RESEARCH QUESTIONS AND DIRECTIONS FOR FURTHER REFLECTION

Given the above theoretical categories and action research, we formulated four new research questions. They should be considered within interdisciplinary studies at the crossroads of public health, sociological theory, gerontology, and human-computer interaction studies.

Human Proxy Users Should be Researched in Action in Order to Optimize Non-human Technology-Based Assistants

Given the technological development toward artificial intelligence simulating human behavior and actions, the successful and fruitful cooperation of older creative Web users and human proxy users will become the pattern for advanced technology focused on digital wisdom enhancement.

Both people the proxy user worked with were over 85 years old and had rich creative professional life stories. Stimulation and help in publishing their creative writing such as journalism, non-fiction, and memories allow authors to integrate and reinterpret their life experience. The word wisdom in the term digital wisdom should, therefore, be taken seriously and literally—as real-life wisdom, resulting from experience and reflection, skillfully transferred to the digital world. After the action research was conducted, we identified several interesting areas of further research which are presented below.

By developing the concept of silver content, we would like to suggest analogical research in action for people interested in understanding creative writing. It would be interesting to see how the silver digital content is consumed and integrated into a modern digital workflow media—especially to the social media space.

The next research question pertains to the optimization of the roles of proxy assistants. Since even homo sapiens digital from Prensky's concept (2009)—relatively young, from the academic and public affairs circles—only after 6 years of consultant-mediated presence on Twitter set up his own profile. Thus the digital sage creating silver content—before he or she becomes self-sufficient in its publishing (if at all)—can and should use the support of digitally assisting consultants. It is worth studying the possible need for offering and constantly researching this type of service as a public service.

Reflection on the Conditions Under Which Technology Can Be a Viable Substitute for Proxy Users

The solutions that enable the creation of silver content can also come from the area of the technology itself. The development of digital technologies prompts us to think about ways in which they can participate in preventing the disengagement and exclusion of older people. So finally, another research question in this area is whether the proxy user that we employed in our action research can be substituted by currently emerging technological solutions that will empower users to create silver digital content autonomously.

In the last decades, digital interfaces have become increasingly simpler. The peak of the process of complexity was programming in assembler, which was then replaced with the DOS operating system, and next—by a graphics system (Windows, iOS). These systems have been modified and further simplified by entering the market of mobile technologies in which, instead of a cursor or a stylus, the finger was used to control. Voice interfaces are the next stage of this process.

The use of simplified interfaces, with particular reference to voice interfaces, makes the technology more accessible to older people. Content and application manufacturers are also beginning to see the growing market of older people, which results in the design of technologies and software aimed at this target group, and takes into account its specificity (weaker sight, weaker motor control). It can, therefore, be said that the threshold of barriers caused by the technology is getting lower. As an example, we can point that as of the end of 2018, a new type of device which incorporates voice assistant technology is announced by major Internet and hardware companies like Facebook and Lenovo. This type of device extends the simple voice assistant that until now was only available in screenless devices (in the form of diverse types of speakers) or as a mobile phone software. The major upgrade vs. current voice assistant hardware is the addition of the screen that allows video-conferencing or posting to social media using voice recognition and speech to text technology. One can easily imagine that such devices could be successfully used by older adults as a tool to generate silver content replacing the current role of the human proxy. This replacement probably couldn't be comprehensive, because voice assistant devices still require installation and configuration. Thus, the role of a proxy would be changed and diminished, but not eliminated in the near future. In the long run however, machines will be able to replace proxy users.

Voice Assistant Technology Could Become the Main Proxy for Production of Silver Content

The potential use of voice assistant technology as a proxy for production of silver content generates a number of new challenges. Voice assistants have the ability not only to listen to voice commands. Artificial intelligence algorithms on which voice assistants are based today can for example, paraphrase an article from Wikipedia. One can imagine that more advanced algorithms will be able to actively engage in the editing of content. New research questions therefore arise. First, to what extent can an assistant interfere with style? Spoken language is different than written language and interviews printed in the press are not transcribed from a tape but edited and processed from journalistic text. Should voice assistants be something of an advanced voice recorder or rather an intelligent, conscious journalist? Second, to what extent can the assistant correct content (e.g., factual mistakes that can be checked in the encyclopedia, but also about facts from the life of an older person)? Third, to what extent can the assistant give a tone to the content (e.g., emotionally moving, cheerful, playful)?

One can imagine the spectrum of such an assistant's activity from a passive recorder, to a proactive journalist who takes the natural speech of older people as material and constructs something based on this. The question arises as to whether the development of technology will reverse the situation. Finally, intelligent technology may use the ocean of data and experiences produced and recorded by people, and after transforming it into knowledge provide it to recipients.

Interactive and Intelligent Technology Will be the Substitute for Social Actors That Prevent Exclusion and Disengagement

The above-discussed case is a situation in which technology is a mediator (proxy) between older people and other members of society. Thanks to this, the risk of excluding older people from society is decreasing. One can imagine another role of technology—not as a link to the community, but as a substitute of community.

The phenomenon of treating technologies as social beings was described in the 1990s by Byron Reeves and Clifford Nass in the book "The media equation." In a series of experiments with computers, they proved that people tend to perceive technology in social categories. Even a computer displaying information on the screen is perceived and described in categories that define people (e.g., malicious, reliable, nice, and friendly) (Reeves and Nass, 1996). This tendency, natural for human perception, is strengthened in the case of voice assistants by the fact that they use natural language and speaking, interacting verbally with the user. After a dozen or so minutes of use, some users tend to treat this technology in terms of talking to a person (e.g., they thank the voice assistant for answering questions and providing information, or they formulate their request in the polite form).

One can imagine virtual assistants as peculiar companions with whom you can talk, ask to tell a joke, sing a song, or check something in Wikipedia. The advantage of such a virtual companion would be proactivity (in contrast to today's radio or television, which also serve as a fulfillment of silence). In comparison with other people—an advantage may be continuous availability. A virtual companion always has time and can give the user his or her attention; he or she will never excuse himself or herself from the conversation. Now voice assistants can substitute the social interaction in a very restricted manner, but with the development of this technology, these interactions can become more meaningful and may become a way to provide aging people with the opportunity to maintain social interactions on the level necessary to stay active.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

REFERENCES

Bayne, S., and Ross, J. (2007). "The "Digital Native" and "Digital Immigrant": A Dangerous Opposition," in: *Annual Conference of the Society for Research into Higher Education (SRHE)*, 20. Available online at: https://www.mindmeister.com/generic_files/get_file/115922?filetype=attachment_file (accessed January 24, 2019).

Biller, N. (2013).*Gray Digital Divide: Consideration of Internet usage of the Generation 60plus*. Munich: GRIN Verlag GmbH.

Brake David, R. (2014). Are we all online content creators now? Web 2.0 and Digital Divides. *J. Comput. Med. Commun.* 19, 591–609. doi: 10.1111/jcc4.12042

Brandtzaeg, P. B., and Følstad, A. (2017). "Why people use chatbots," in *Lecture Notes in Computer Science*, Vol. 10673, eds Kompatsiaris I. et al. (Cham; Springer; Internet Science INSCI), 377–392. doi: 10.1007/978-3-319-70284-1_30

Brown, C., and Czerniewicz, L. (2010). Debunking the "Digital Native": Beyond Digital Apartheid, Towards Digital Democracy. *J. Comput. Assist. Learn.* 26, 357–369. doi: 10.1111/j.1365-2729.2010.00369.x

Choudrie, J., Ghinea, G., and Songonuga, V. N. (2013). Silver surfers, E-government and the digital divide: an exploratory study of UK local authority websites and older citizens. *Int. Comput.* 25, 417–442. doi: 10.1093/iwc/iws020

Choudrie, J., Grey, S., and Tsitsianis, N. (2010). Evaluating the digital divide: the silver surfer's perspective, electronic government. *Int. J.* 7, 148–167.

Edmondson, R. (2013). *SP619 Ageing, the Life Course and the Sociology of Wisdom.* [University course syllabus downloaded from nuigalway.ie in 2014].

Edmondson, R. (2015). *Ageing, insight and wisdom: Meaning and practice across the lifecourse*. Bristol-Chicago: Policy Press.

Glück, J., and Baltes, P. B. (2006). Using the concept of wisdom to enhance the expression of wisdom knowledge: not the philosopher's dream but differential effects of developmental preparedness. *Psychol. Aging* 21, 679–690. doi: 10.1037/0882-7974.21.4.679

Helsper, E. J., and Eynon, R. (2010), Digital natives: where is the evidence? *Br. Educ. Res. J.* 36, 503–520. doi: 10.1080/01411920902989227

Klimczuk, A. (2011). "Transfer technologii w ksztaltowaniu srebrnej gospodarki (Technology Transfer in Shaping the Silver Economy)," in: *Transfer Wiedzy*

w Ekonomii i Zarzadzaniu, Wydawnictwo Uczelniane Akademii Morskiej w Gdyni, ed M. Grzybowski, Gdynia, 57–75.

König, S., and Glück, J. (2014). "Wisdom," in: *Encyclopedia of Quality of Life and Well–Being Research*, ed A. C. Michalos (Dordrecht: Springer), 7143–7147. doi: 10.1007/978-94-007-0753-5_3247

Kumar, A., Paek, T., and Lee, B. (2012). "Voice typing: a new speech interaction model for dictation on touchscreen devices," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI'12)*. (New York, NY: ACM), 2277–2286. doi: 10.1145/2207676.2208386

Meacham, J. A. (1990). "The loss of wisdom," in *Wisdom: Its Nature, Origins, and Development*, ed R. J. Sternberg (Cambridge; New York, NY: Cambridge University Press), 181–211. doi: 10.1017/CBO9781139173704.010

Millward, P. (2003). *The "Grey Digital Divide": Perception, Exclusion and Barriers of Access to the Internet for Older People, First Monday*. 8(7). Available online at: https://www.firstmonday.org/article/view/1066/986 doi: 10.5210/fm.v8i7.1066

Prensky, M. (2001a). Digital natives, digital immigrants, Part 1. *Horizon* 9, 1–6. doi: 10.1108/10748120110424816

Prensky, M. (2001b). Digital natives, digital immigrants, part 2. Do they really think differently. *Horizon* 9, 1–9. doi: 10.1108/10748120110424843

Prensky, M. (2003). *Overcoming educators' digital immigrant accents: a rebuttal*. The Technology Source, 7 (accessed June 22, 2016).

Prensky, M. (2009) H. Sapiens digital: from digital immigrants and digital natives to digital wisdom, innovate: *J Online Educ*. 5:1. Available online at: https://nsuworks.nova.edu/innovate/vol5/iss3/1

Prensky, M. (2011). "Digital wisdom and homo sapiens digital," in: *Deconstructing Digital Natives,* ed M. Thomas (London; New York, NY: Routledge), 15–29.

Reeves, B., and Nass, C. (1996). *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places.* New York, NY: Cambridge University Press.

Richardson, J. T. E., and Jelfs, A. (2015). "Technologies across the adult lifespan," in *The Wiley Blackwell Handbook of Psychology, Technology and Society*, eds L. D. Rosen, and N. Cheever, L. M. Carrier (Hoboken, NY: Wiley-Blackwell).

Riley, T. (2013). Self-initiated (Re)education of digital technology in retired content creators. *Northern Lights Film Media Stud. Yearbook* 11, 51–69. doi: 10.1386/nl.11.1.51_1

Schradie, J. (2011). The digital production gap: the digital divide and Web 2.0 Collide.*Poetics* 39:145–168. doi: 10.1016/j.poetic.2011.02.003

Selwyn, N. (2004), Reconsidering political and popular understandings of the digital divide. *N. Media Soc.* 6, 341–362. doi: 10.1177/1461444804042519

Selwyn, N. (2010). Degrees of digital division: reconsidering digital inequalities and contemporary higher education, RUSC. *Univ. Knowl. Soc. J.* 7, 33–42. doi: 10.7238/rusc.v7i1.660

Siapera, E. (2011). *Understanding New Media*. London: Sage.

Toczyski, P. (2017). Srebrne treści cyfrowe: miedzypokoleniowy transfer madrości poprzez internetowe twórcze pisanie osób starszych (Silver Digital Content: Intergenerational Transfer of Wisdom through Seniors' Creative Writing on the Web). *Zagadnienia Rodzajów Literackich Probl. Lit.Genres* 60, 95–113.

Wang, Q., Myers, M. D., and Sundaram, D. (2012). "Digital natives and digital immigrants: towards a model of digital fluency," in *ECIS 2012: Proceeding of the 20th European Conference on Information Systems (ECIS 12), Paper 39*. Barcelona. Available online at: https://aisel.aisnet.org/ecis2012/39

Zbyrad, T. (2013). Wykluczenie spoleczne a wykluczenie medialne (Social exclusion and media exclusion). Annales Universitatis Paedagogicae Cracoviensis. *Soc. Sci.* 5, 96–107. Available online at: https://depot.ceon.pl/bitstream/handle/123456789/15154/wykluczenie.pdf?sequence=1&isAllowed=y

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