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Fang, Fang; Yang, Xiao

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Socioeconomic status, cultural values, and elderly care: An examination of elderly care preference in OECD countries

Fang Fang [a,*], Xiao Yang [b]

[a] Research and Infrastructure Service Enterprise (RISE), Eastern Virginia Medical School, United States
[b] Department of Psychology, Old Dominion University

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ABSTRACT

Background: With the rapid growing of the older population around the world, care for older adults is becoming a pressing public health issue. To find the optimum and sustainable balance of informal and formal involvement in senior care is urgently important. However, it is still unclear how older adults' preferences for senior care are shaped by a range of factors at individual and country levels. Therefore, the present study aimed to examine the roles of socioeconomic status (SES) and culture values in old adults' attitude toward senior care.
Methods: The data from the International Social Survey Program 2012: Changing Family and Gender Roles were used to construct multilevel mixed-effect logistic regression models, in which the associations between individual-level and country-level factors and their interactions on senior care preference were estimated.
Results: SES indictors, family income and education level, were positively and inversely associated with older adults' preference for family senior care, respectively. Moreover, there was an interactive effect of the individual-level factors and secular-rational values on senior care preference.
Conclusions: Family care is less likely to be preferred by older adults from societies that stress individual independence than those that highly value tight-knit family relationships. However, the cultural gap in the family care preference shrinks at a faster speed as older adults' family income increase.

1. Introduction

Aging populations around the world challenge the old models of state-sponsored and family senior care. Countries are facing the issue of taking care of their aging citizens with fewer resources than ever before [1,2]. Governments and families become increasingly interested in seeking the best and most sustainable balance of informal and formal involvement in senior care. Thus, an investigation of older adults' preferences is urgently important. Convergence on the expectation and the receipt of care facilitates older adults' satisfaction with care and their wellbeing [3]. Awareness of factors shaping older adults' care preference would help them and their caregivers better prepare for future care needs [4–6]. Meanwhile, private care providers and policy makers need to understand these factors so they can plan and implement formal care provisions accordingly [7,8].

Older adults receive care from multiple sources, including kin, close friends, neighbors, community services, private providers, government, etc., which are often grouped into two forms: informal care and formal care. Informal care refers to all unregulated, mostly unpaid care work for children, older adults, or other dependents, and formal care refers to paid care provision that is regulated by law or other contractual arrangements and provided by the state or the market [9]. Researchers have debated how older adults perceive and use these two forms of care. Some argue that older adults prefer informal care and government support can only compensate when family care is unavailable [10,11]. However, others consider informal care and formal care as complementary [13,14]. Older adults' health conditions, availability of informal care, and national care policies and public care service infrastructure are associated with older adults' senior care preference [29]. However, fewer studies have focused on how dominant cultural values at the societal level, particularly the beliefs about the relationship between family and individuals, might have shaped older adults' perception about who should be the primary senior care provider. In addition to the macro-level cultural values, the influence of individual socioeconomic status (SES) on care preference was examined in the present study. SES is not only a construct that indicates individual's access material resources, e.g., the ability to purchase private care, it also fundamentally shapes individuals' psychological and behavioral

* Corresponding author at: Williams Hall A-123, Eastern Virginia Medical School, 855 Brambleton Ave, Norfolk, VA 23510, United States.
E-mail address: fangf@evms.edu (F. Fang).

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Table 1
Descriptive Statistics of Variables (N = 7,337).

Variable	Mean/ Proportion	S.E.	Min	Max
Preference for Family Care (1=yes; 0=no)	0.52	0.01	0.00	1.00
Level 1: Individual Level				
Family income[a]	1.24	0.03	0.00	78.57
Education (0=no formal education to 6=upper tertiary education)	3.27	0.02	0.00	6.00
Women (%)	49.12			
Age (years)	63.16	0.11	50.00	97.00
Living arrangement (%)				
Living with no adult	19.10			
Living with a steady partner	73.22			
Living with other adults	7.68			
Self-rated Health (1=excellent to 5=poor)	3.10	0.01	1.00	5.00
Family caregiving hours	7.20	0.16	0.00	95.00
Living with child(ren) younger than 18 years old (%)	12.31			
Employed (%)	46.87			
Level 2: Country Level				
Secular-rational values[d]	0.54	0.01	-0.78	1.27
Percentage of old age support in GDP[b]	7.30	0.04	1.60	12.50
Female labor force participation[c]	66.48	0.11	45.88	77.37
Women's caregiving hours[e]	13.71	0.05	0.00	95.00
Percentage of aged 65 and older[f]	15.87	0.05	6.12	23.67
GDP per capita[g]	46,423.65	330.27	9812.13	100,575.12

Note: Means and proportions are weighted. Total sample N is not weighted.
[a] Ratio of respondent's reported family income over the medium family income of respondent's country.
[b] % in GDP in 2011, including pension, early retirement pension, home-help, and residential services and other benefit services for older adults, OECD Social Expenditure Database (SOCX).
[c] % of women aged 15-64 labor market participation rate in 2011, OECD.Stat.
[d] mean standardized scores obtained from World Value Surveys by country.
[e] Aggregated measure from ISSP 2012.
[f] Population ages 65 and above (% of total) 2011, World Bank.
[g] GDP per capita (in 2014 US dollar) 2011, World Bank.

Table 2
Multilevel Logistic Regression of Individual- and Country-Level Factors Predicting Preference of Family Care (N=7,337)

	Model 1 Odds Ratio (S.E.)	Model 2 Odds Ratio (S.E.)	Model 3 Odds Ratio (S.E.)
Fixed Effects: Level 1 (Individual Level)			
Family income	1.04(0.02)*	1.08 (0.02)**	1.04 (0.02)*
Education	0.93 (0.02)***	0.92 (0.02)***	0.95 (0.03)
Woman	0.87 (0.05)**	0.87(0.05)**	0.87 (0.05)**
Age	1.00(0.00)	1.00(0.00)	1.00 (0.00)
Living with a steady partner (ref=living with no adult)	0.99(0.07)	0.99 (0.07)	0.99(0.07)
Living with other adults (ref=living with no adult)	1.09 (0.11)	1.10 (0.11)	1.09 (0.11)
Self-rated health	0.95 (0.03)#	0.95 (0.03)#	0.95 (0.03)#
Family caregiving hours	1.00 (0.01)	1.00 (0.01)	1.00 (0.01)
Living with child(ren) younger than 18 years old	1.04 (0.09)	1.05 (0.09)	1.04 (0.09)
Employed	0.90 (0.06)	0.90 (0.07)	0.90 (0.07)
Fixed Effects: Level 2 (Country Level)			
Secular-rational values	0.16 (0.54)**	0.18 (0.54)**	0.18 (0.55)**
Old age support	0.85 (0.08)*	0.93 (0.08)*	0.85 (0.08)*
Female labor force participation	0.92 (0.04)*	0.92 (0.04)*	0.91 (0.04)*
Women's caregiving hours	0.96 (0.06)	0.95 (0.06)	0.96 (0.06)
Percentage of aged 65 and older	1.40 (0.09)***	1.39 (0.09)***	1.39 (0.09)***
GDP per capita	1.00 (0.01)	1.00 (0.01)	1.00 (0.01)
Cross-level Interactions			
Family income × secular values		0.93 (0.03)*	
Education × secular values			0.95 (0.04)
Random intercept at Level 2	0.34 (0.12)	0.34 (0.12)	0.34 (0.12)
Akaike Information Criterion (AIC)	9033.76	9030.89	9033.18
Bayesian Information Criterion (BIC)	9159.78	9162.00	9164.29
Log likelihood	-4498.88	-4496.44	-4497.59

Note: Coefficients in the regression models were unweighted.
*** $p < 0.001$,
** $p < 0.01$,
* $p < 0.05$,
# $p < 0.1$

tendencies, including being independent from other people for any support [30]. Lastly, the interaction between the macro-level cultural values related to the belief of family interdependence and the individual-level SES associated with individual independence on predicting older adults' senior care preference was also studied.

Culture refers to the shared knowledge, values, attitudes, meanings, artifacts and norms in a particular society or group, which often guides individuals' beliefs and actions in the society or group [35]. Among various cultural values, familial beliefs that center the family in an individual's life have been found to be associated with the preference of senior care [16–18]. Traditionally, family care was the mainstay of senior care, which has been provided by spouse, children, and family relatives and the top choice for older adults as they age. It is widely believed that older adults would prefer informal family care over formal care due to traditions, readily availability, and proximity [10,12]. As countries started building national social security and health care systems, and more private health care providers are joining the forces of caring for aging adults, formal senior care has become an alternative form of care. The availability of formal senior care provided by government or private providers has spurred discussions on the roles of formal care and informal care primarily provided by the family in the overall care infrastructure in contemporary societies [29]. However, the primacy of family in providing and receiving care is common among countries with strong traditional familial beliefs. For example, in China, Confucian doctrines that emphasize the intergenerational interdependence and filial piety lead to a strong preference for family members, particularly adult children, as the primary care provider for older adults [16]. A study on five European countries (Germany, Norway, Spain, the United Kingdom, and Israel) finds that the country variation of the preference of elder care corresponds to the country difference in the endorsement of familial values among older adults (75 years or older) [17]. Ethnic differences in cultural norms and beliefs about family relationships explain the diversity in caregiving preference in the U.S [18]. As such, older adults from ethnic minority groups with stronger familial beliefs, e.g., African Americans and Hispanic Americans, show a stronger preference for family care than whites [12].

The secular-rational/traditional cultural value dimension derived from the World Values Survey [33] is one of validated and widely used indices to measure the diversity in cultural values over 65 countries around the world. The importance of family and parent-child ties to individuals is one of the core components in this cultural value dimension, in addition to religion, national pride, opposition to divorce and abortion, and strong respect for authority [19]. Traditional values

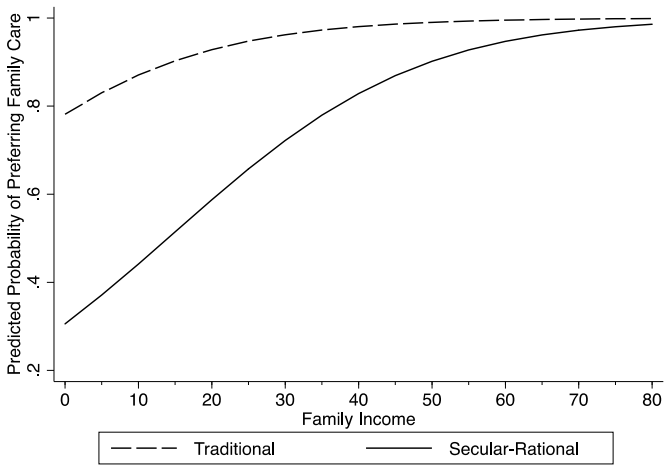
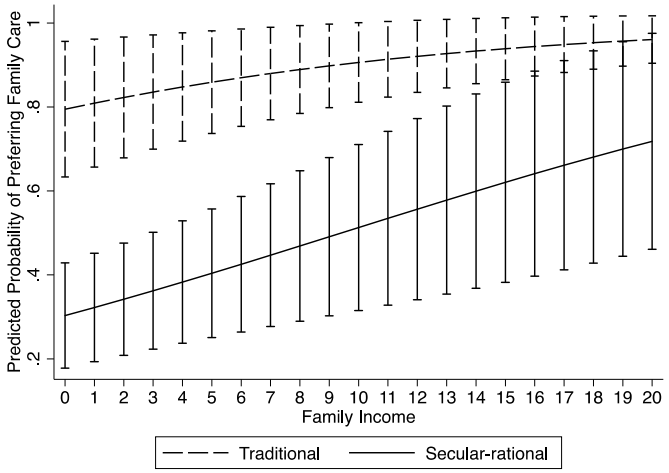


Fig. 1. Interactive Effect between Family Income and Cultural Values at the Country-level. *Note*: Since respondents' family income was originally recorded in respective countries' currency in ISSP 2012, family income was recoded as the proportion of national median family income in respective countries in the analysis.

Appendix Table 1
Items Characterizing Traditional vs. Secular-Rational Values in World Values Surveys

God is very important in respondent' life.
It is more important for a child to learn obedience and religious faith than independence and determination.
Abortion is never justifiable.
Respondent has a strong sense of national pride.
Respondent favors more respect for authority.
Secular-rational values emphasize the opposite.

Note: Adapted from Inglehart and Baker (2000).



Appendix Fig. 1. Predicted Probabilities of Preferring Family Care with Standard Errors by the Interactive Effect between Family Income and Secular-Rational Values

emphasize the importance of strong parent-child ties, while secular-rational values emphasize these family ties less. In a traditional society, parents should provide for their children and children should be obedient and respect parents unconditionally. Such kind of parent-child tie is less expected in a secular-rational society. Older adults from more traditional societies would value an intimate family relationship in which the older generation can receive support from the family, especially from the younger generation, more than those from more secular-rational societies. The priorities in societies with strong secular-rational value shift from an overwhelming emphasis on family interdependence to individual independence and self-fulfillment. Everyone takes care of themselves and their immediate nuclear family. Taking care of aging parents or other older adults in the extended family is not culturally expected in societies with strong secular-rational values, where extended family has more of a symbolic than a functional role. Therefore, a tight-knit family network and culturally expected caregiving roles would motivate people to provide care for family members and to choose family members rather than formal institutions or private providers as caregivers in societies with traditional values, whereas such preference is weaker in societies with stronger secular-rational values [15].

Previous research has found that higher socioeconomic status is associated with stronger preference of formal services provided by non-family members. Older community residents with higher socioeconomic status prefer long-term formal care provided by professionals rather than family caregivers [20]. People with higher incomes can better afford to pay for professional senior care, while lower-income people prefer informal care because they cannot afford paid care. Older adults with lower SES only prefer informal home care for short-term housekeeping but residential care for long-term housekeeping care [21]. The preference for formal care among low SES older adults is likely driven by the concern for long-term care strain imposed on family members. Meanwhile, higher level of education is associated with preference for formal care, since they have better knowledge of formal care services [4, 18].

Meanwhile, the effect of SES on older adults' care preference is likely conditioned by the dominant cultural values their societies embrace. High SES has been found to be associated with an independent orientation and personal choice to express a good and unique self, while low SES is associated with an interdependent orientation and more prosocial behaviors. Research has shown that the association between SES and independent/interdependent orientation can be modified by the cultural context where individuals live in [30]. In a study using World Values Survey for 60 countries, a positive association between SES and the tendency to providing support to others was found in East Asian countries that have strong traditional cultural values, whereas a negative association between SES and the tendency to support others was found in the United States, Australia, and New Zealand, which have strong secular-rational cultural values [31]. Together, these findings suggest that higher SES individuals are likely to fit themselves to culturally sanctioned ideas and practices. Therefore, older adults with higher SES from societies with strong traditional values would have a stronger preference of family senior care, which fits the cultural norms of family interdependence, whereas older adults with higher SES from societies with strong secular-rational values would have a weaker preference of family senior care that is consistent with the dominant cultural beliefs that highly value individual independence with less interdependent family ties.

Despite the existing studies of care preference, several issues have not been addressed. Specifically, it remains unclear, for older adults aged 50 years and older, whether the family or formal institutions, such as government and private providers, should be the primary senior care provider of instrumental help. Moreover, how older adults' preferences are shaped by their individual characteristics and family relations, as well as their country characteristics related to caregiving for older adults, has not been adequately studied. Therefore, the present study aimed to examine how societal cultural values and individual SES is associated with older adults' attitude toward senior care in 17 Organisation for Economic Cooperation and Development (OECD) countries and investigate how the effect of individual SES on care preference are conditioned by the prominent culture values in these countries.

In light of the literature, we hypothesized 1) family income and levels of education would be negatively correlated with the preference of adults aged 50 years and older for family members as the primary

provider of senior care; 2) compared to those from a country with traditional values, adults aged 50 years and older who live in a country with secular-rational values would be less likely to prefer family members, rather than formal institutions, as the primary provider for instrumental senior care; and 3) the cultural effect would be larger among these adults with higher family income and higher levels of education.

2. Methods

2.1. Data

The individual-level data from the International Social Survey Program (ISSP) 2012: Changing Family and Gender Roles [36] were used for the analyses in the present study. ISSP is a repeated cross-sectional survey of nationally representative samples of adult respondents aged 18 and older in over 30 nations administered annually. Each year has different respondents and specialized modules on topics of interest. The 2012 ISSP module includes information about respondents' family network roles and expectations, and attitudes toward support for older adults [32]. We focused on OECD countries and the analytic sample included $N = 7{,}337$ respondents aged 50 years and older from 17 OECD countries, including Australia, Canada, Chile, Czech Republic, Finland, France, Germany, Japan, South Korea, Mexico, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland, and the United States. 24 other countries in ISSP 2012 were excluded from the analyses due to the lack of information on key variables.

2.2. Measures

Dependent variable. The dependent variable measured individuals' attitudes toward the care for older adults. The item asks, "Thinking about elderly people who need some help in their everyday lives, such as help with grocery shopping, cleaning the house, doing the laundry etc. Who do you think should primarily provide this help?," and responses were coded as: 1 = family members; 0 = government agencies, non-profit organizations, or private providers.

Independent variables-individual level. SES was measured by two variables, family income and education level. Family income was originally reported in local currency in ISSP. Considering the differences of cost of living across the 17 countries, the family income was recoded as the ratio of the respondent's family income to the median family income in the respective country to measure respondent's relative economic standing in their own country. Education level was coded as 0 = *no formal education*; 1 = *primary school*; 2 = *lower secondary (equivalent to U.S. middle school)*; 3 = *upper secondary (U.S. high school)*; 4 = *post-secondary, non-tertiary (higher than U.S. high school but lower than U.S. college education)*; 5 = *lower tertiary (U.S. associate degree)*; and 6 = *upper tertiary (U.S. bachelor's degree or higher)*. The education level in ISSP is based on International Standard Classification of Education maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO) [33]. ISSP has utilized this education standard to harmonize different education categorizations across the 17countries.

Independent variables-country level. The scale of secular-rational/traditional values from World Values Survey (WVS) [33] was used to measure the cultural values. Five items from WVS (See Appendix Table 1 for the item statements) were used to calculate the cultural value score for each country in ISSP: The scores of traditional/secular values ranged from -0.78 to 1.27 (the mean of five standardized scores based on the WVS' original scales). Higher scores represent more secular values.

Control variables. At the individual level, age, gender, self-rated health, living arrangement, caregiving hours for family members, and SES were included in analyses. Gender was coded as 1 = *woman*; 0 = *man*. Self-rated health was coded as 1 = *excellent*; 2 = *very good*; 3 = *good*; 4 = *fair*; and 5 = *poor*. Living arrangement refers to whether the respondent has adults living in the same household to indicate the availability of the family care: living with adults (1=*yes*; 0=*no*) and living with a steady partner (1=*yes*;0=*no*), with the reference of living with no adult. Caregiving hours for family members refers to the number of hours respondent spent on caring for family members. Variables that indicate whether the respondent lives with a child younger than 12 years old in the household (1 = *yes*; 0 = *no*) to measure whether there is a need for childcare in the household and whether the respondent is currently employed (1 = *yes*; 0 = *no*) were controlled in the analyses. At the country level, governmental expenditures on old age support measured as the percentage of old age support in Gross Domestic Product (GDP) and labor force participation rates for women aged 15 to 64 in 2011 were drew from OECD databases [22]. The population percentage aged 65 years or older in 2011 and GDP per capita in 2011 [23] and family caregiving hours by women from ISSP 2012 (i.e., the average hours women spent caring for family members) were controlled in the analyses.

2.3. Analytical Strategy

All statistical analyses were conducted using STATA v17. Multilevel mixed-effect logistic regressions were used to estimate the associations between individual-level and country-level factors and their interaction terms on senior care preference for family versus formal care. Multilevel modeling is a preferred method for nested data structures, which includes individuals nested within countries. The multilevel analyses estimated variance at both the individual and country level, which allows for more accurate estimation of coefficients [34]. We also tested cross-level interactions between individual-level family income and education and country-level secular-rational values.

Simplified versions of model equations are as follows:

Individual level (Level 1):

$$Y_{ij} = logit\ (p_{ij}/(1-p_{ij})) = \beta_{0j} + +\beta_{1j}(family\ income)_{ij} + \beta_{2j}(education)_{ij} + \beta_{3j}(control\ variables)_{ij}$$

Country level (Level 2):

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(secular - rational\ values)_j + \gamma_{02}(country - level\ C.V.s) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(secular - rational\ values)_j$$

Combined model:

$$\begin{aligned} Y_{ij} = logit\ (p_{ij}/(1-p_{ij})) = \Big[&\gamma_{00} + \gamma_{10}(family\ income)_{ij} + \gamma_{20}(education)_{ij} \\ &+ \gamma_{01}(secular - rational\ values)_j + \gamma_{11}(family\ income)_{ij} \\ &\times (secular - rational\ values)_j + \gamma_{21}(education)_{ij} \\ &\times (secular - rational\ values)_j + \beta_{3j}(individual - level\ C.V.s)_{ij} \\ &+ \gamma_{03}(country - level\ C.V.s)_j\Big] + u_{0j} \end{aligned}$$

The individual-level (Level 1) model examines the effects of family income and education on the preference for family care (Level 1), whereas the country-level (Level 2) model examines the direct effects of secular-rational values on the preference for family care (Level 2). The country-level and the combined model show the test of cross-level interactions between individual-level family income and education and country-level secular-rational values.

Specifically, Y_{ij} is the preference for family elder care for respondent i in country j. Since Y_{ij} is defined as a binary variable, it is assumed that Y_{ij} has a Bernoulli distribution. Therefore, the probability of the response equal to one is defined as $p_{ij} = P(Y_{ij})$ and $logit\ (p_{ij}/(1-p_{ij}))$ is approximately normally distributed. In the combined model, γ_{00} is the intercept, or mean, for respondents across all countries, $\gamma_{10} - \gamma_{20}$ are the average effects of family income and education respectively for the ith respondent in country j. γ_{01} is the average effect of secular-rational values in country j on the intercept. γ_{11} and γ_{21} are the average effects of secular-

rational in country *j* on the effect of family income and education for the *i*th respondent in country *j*, or on the slopes of family income and education, respectively. β_{3j} are the average effects of control variables for the *i*th respondent in country *j*. γ_{03} are the average effects of control variables for all respondents in country *j*. Finally, u_{0j} is the random residual term for level-2 analysis. No residual term is estimated at level-1 analysis because the variance is completely determined by the mean [34].

3. Results

3.1. Descriptive Statistics

The descriptive statistics are presented in Table 1. On average, most respondents ($M = 0.52$) preferred family members as the primary provider of senior care over formal assistance. Their family income was 24% higher than the respective national median family income. The average education level was equivalent to high school education (M=3.27, range 0-6). The mean value of secular-rational values is 0.54 (ranging from -0.78 to 1.27).

3.2. Multilevel Mixed-Effect Logistic Regression Models

Multilevel mixed-effect logistic regression models are presented in Table 2. Model 1 shows that, at *the individual level*, having higher family income was associated with a higher likelihood of preferring family care, and having a higher level of education was associated with a lower likelihood of preferring family care. At the country-level, secular-rational value was associated with lower likelihood of preferring family care. Model 2 with the interaction term between individual family income and national secular-rational value shows that the effect of family income on the likelihood of preferring family care was modulated by national secular-rational value (see Fig. 1). The negative association of secular-rational values with the preference for family care weakened as family income increased. Model 3 included the interaction term between individual education level and national secular-rational value. While most coefficients of individual-level predictors in Model 3 were similar in values of those in Model 1 and 2, education level and its interaction with secular-rational value in Model 3 were not statistically significant.

4. Discussion

The present study investigated older adults' preference of family instrumental help for older people among 17 OECD countries and how their preference was influenced by SES and cultural values. We found that slightly over 50% of older adults from these countries preferred family members as the primary senior care provider over formal help. Family income was positively related to older adults' preference for family senior care, while education was negatively related to their preference. In addition, their care preference was also explained by the country-level cultural values (secular-rational vs traditional), and the cultural effect was modulated by individual older adults' family income.

The hypothesis regarding family income and education level was partially supported. Unlike our prediction, older adults with higher family income were more likely to choose family members as their primary provider of instrumental help for older adults. However, previous studies reported that higher income is associated with a preference for formal care [20,24]. This inconsistency may be explained by the fact that the effect of income on care preference might also depend on whether the care is short term or long term, and lower income older adults prefer formal care to family care in long-term instrumental help for older adults [21]. Moreover, a non-specified duration of care could contribute to the relationship between family income and the preference for family care. The care burdens associated with a possible long-term instrumental help for older adults could discourage older adults with lower family income from choosing their family members to be the primary provider of such care.

In contrast to family income, education level was negatively associated with the preference for family care, which is consistent with the hypothesis. According to several prior reports [4,18], older adults with higher levels of education have better knowledge of formal senior care services and thus are more inclined to seek resources from governmental and/or paid private care providers.

Our hypothesis of secular-rational values was supported. The present results show that secular-rational values at the country level were negatively associated with older adults' preference for family senior care. Traditional values emphasize religion, family traditions, and parent-child ties, whereas secular-rational values stress less on interdependent family relationships [19]. Along with previous studies [15–17], our findings suggest that culture values play a vital role in older adults' decision making about the primary source of senior care: older family members with stronger secular-rational values are less likely to choose their family members as primary caregivers than those with traditional values.

Importantly, the effect of secular-rational values on preference for family care was modulated by family income but not education level. The current results do not support our hypothesis regarding the interaction between secular-relational values and family income. As family income increases, older adults from countries with stronger secular-rational values become more like their peers from countries with more traditional cultural values, in terms of their preference of family senior care. A closer examination revealed that exceptionally richer older adults from countries with more secular-rational values were as likely to prefer family care as the primary source as those from traditional countries. In Appendix Fig. 1, the lines represented secular-rational countries and traditional countries started to converge at the point that marked the family income three times more than the median family income in respective countries. No significant difference between the two types of countries was found around the point that marked the family income 15 times more than the respective country's median family income. Previous studies found that for older adults with higher incomes their ability to pay for professional care is driving the formal care preference [25–27]. The unexpected findings may be explained by unique psychological process of affluent older adults, for example, high self-esteem and low level of trust of non-family members and authority. As shown in Fig. 1, secular-rational and traditional countries converge among individuals from the upper class in the 17 OECD countries. In other words, social class transcends cultural boundaries in older adults' preference of care.

Finally, other country-level factors were associated with preference for family care. Previous studies have found that national care infrastructure determines whether individuals would choose formal care as their preferred source of care [9,25,26]. In the present study, older adults in countries with greater national expenditure on old age support indicating the availability of formal care, showed a stronger preference for formal care. In addition, women's potential *un*availability for providing senior care due to employment measured by female labor market participation rate is a strong indicator of why older adults would prefer formal assistance to family care with instrumental help for older adults. Low availability of informal/family care provided by women could motivate people to seek other sources for senior care. As one of women's social status indicators, the significant effect of female labor force participation suggest that care preference is associated with the level of gender equality in their country.

The present findings need to be evaluated in the light of several limitations, First, the measure of senior care preference is limited to two care sources, family or formal care, and respondents did not have options to have both sources of care complementing each other or utilize them sequentially. Moreover, care provided by government, non-profit organizations, and private providers were grouped as one source of senior care as formal care. The heterogeneity among the three providers

was omitted due to small percentages of respondents who reported non-profit organizations should be the primary provider of senior care. Care provided by government and non-profit organizations is much more financially accessible than that provided by private providers. In addition, the measure does not specify the duration of the care, which has been found to influence people's evaluations about the potential burden on members from informal social network [18,21,28]. More specific response items such as various combinations of care sources and duration of care, as well as care delivery setting, i.e., at-home care or institutional care, would benefit future cross-national research about care preferences. Next, cultural values likely change over the years and there could be a generational effect on secular-rational values. Future cross-national studies are expected to explore more interactions between micro-level and macro-level factors. Additionally, future research should explore psychological mechanisms of how older adults make health care decisions at the individual level.

5. Conclusion

In sum, the present study is among the first comparative studies of senior care preference and focuses on the interactive effects between individual-level factors and country-level factors. Family care is much less preferred by older adults from societies that stress individual independence than those from traditional societies that highly value tight-knit family relationships. However, the cultural gap in the family care preference shrinks at a faster speed as older adults' family income increase. Our findings are particularly informative to social policy markers about the outcomes of any senior care policy and how to implement policies to benefit a society with diverse cultures.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

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