Strategy for innovation in the teaching of nursing in the home care for the elderly
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ABSTRACT

Objective: To provide undergraduate students with the experience of the expanding of the scope of primary health care activities in home care, introducing complex care activities of home care, for the understanding of the interfaces of the Health Care System. Methods: A report of experience in nursing education with case study, application of NANDA and Calgary Model. Results: The home care is an important tool of technology for access to families and nursing care system in the context of the public policies of health care to the elderly. Conclusion: The primary home care co-existed with complex nursing care and is imperative the expansion of the Family Health Strategy with the constitution of teams for activities of home care, different from family health teams, but in the context of primary care, according to the social demands emerging. Descriptors: Geriatric nursing, Old age assistance, Health services for the aged, Caregivers.

RESUMO

Objetivo: Proporcionar aos estudantes a ampliação do escopo da Atenção Básica para além das atividades de assistência domiciliar, introduzindo atividades de internação domiciliar, para a compreensão das interfaces do Sistema Único de Saúde. Métodos: Relato de experiência no ensino de graduação em enfermagem com estudo de caso, aplicação da NANDA e do Modelo Calgary. Resultados: A assistência domiciliar é importante ferramenta de tecnologia de acesso à família e de sistematização da assistência de enfermagem no contexto das políticas públicas de atenção à saúde do idoso. Conclusão: na assistência domiciliar os cuidados primários co-existiram com cuidados complexos e é imperiosa a expansão da Estratégia Saúde da Família com a constituição de equipes para atividades de internação domiciliar, diferentes das equipes de saúde da família, mas no âmbito da Atenção Básica, dadas as demandas sociais emergentes. Descritores: Enfermagem geriátrica, Assistência a Idosos, Serviços de saúde para Idosos, Cuidadores.

RESUMEN

Objetivo: Proporcionar a los estudiantes la ampliación del alcance de la atención primaria de salud, com actividades de atención domiciliaria com cuidados de enfermería complejos para la comprensión de las interrelaciones en el Sistema Único de Salud. Métodos: Informe de experiencia en la enseñanza de enfermería con estudio de casos, la aplicación de la NANDA y el modelo Calgary. Resultados: La atención domiciliaria es una herramienta importante de tecnología para el acceso a la familia y a la atención de enfermería en el contexto de las políticas públicas de atención sanitaria a los ancianos. Conclusion: en la atención domiciliaria la atención primaria co-existió con cuidados complejos y es imperioso la expansión de la Estrategia de la Salud de la Familia con la constitución de equipos de salud para actividades de cuidados domiciliarios, diferente de los equipos de salud familiar, pero en el contexto de la atención primaria, habida cuenta de las demandas sociales emergentes. Descriptores: Enfermería geriátrica, Asistencia a los ancianos, servicios de salud para ancianos, Cuidadores.
INTRODUCTION

The aging of population is a worldwide phenomenon and, in Brazil, changes have occurred rapidly. But not always the increase of life expectancy in Brazil is linked to significant improvements in health and life conditions, due to a severe social gap, poverty, uncertainty of institutions and high prevalence of chronic disabling diseases. This condition increases the responsibilities of family, health system and society.¹⁻³

Projections from the Brazilian Institute of Geography and Statistics (IBGE) show that the group of more than 60 years old will soon reach 64 million people by 2050, with a predominance of females, i.e., 76 out of 100 elderly will be women.⁴

In less than 40 years, Brazil changed the typical mortality profile of a young population to a framework of complex and costly diseases, which imply a greater number of long-term problems, resulting in costs of hospital and treatments which has been posed as a challenge to sanitary authorities regarding the implementation of new care models and methods for planning and management.⁵⁻⁸

Given these projections, the Ministry of Health (MH)⁶ established social protection policies and implementing change processes of care models, proposing a set of actions performed by an interdisciplinary team at the disabled elderly’s home in order to promote maintenance and improvement of functional capacity, disease prevention, health recovery and rehabilitation of those who may have limited functional capacity, to make sure they keep living in the environment they live in.⁵⁻⁸

Home care is therefore an alternative care for the elderly considering the growing demand of people with chronic and disabling diseases that J. res.: fundam. care. online 2013. jul./set. 5(3):293-303 impair ambulation and access to appointments, reintegrating the elderly in the family, as well as support and a better approach of the health team with the family, contributing to the optimization of hospital beds and ambulatory care, in order to reduce costs.⁶

However, there are limitations in the operationalization and strengthening of new models of care, such as home care, which still need to be overcome, such as: insufficient funding⁷⁻⁹; growing primary care, but with speed and quality below required⁹; close to virtual regionalization and integration of municipalities and services⁹; effectiveness and efficiency of hospitals and specialized services below expectations⁶⁻¹⁰; persistent difficulty in achieving the relations of reference and counter-reference⁶⁻⁹; permanent tension between the scheduled offering health actions and spontaneous demands⁵⁻⁹,¹¹; discontinuity of care especially in control of chronic diseases²,⁵,¹⁰; restriction of access to specialized care and difficulties to enforce teamwork¹⁰,¹¹, and finally, non-recognition by health professionals of the innovation potential of home care in promoting comprehensive and humane care for the elderly.¹⁰,¹²

The innovation potential is the introduction of a novelty in a work environment as a means of adding new features or characteristics of a production method, able to adapt a service to market realities and to insert it into the nursing process for use during professional practice and contribute to the construction of public policies.¹³

In this paper, innovation consisted of performing technology of home care as an alternative to institutionalization of nursing practices that traditionally would be developed by students in hospital settings, with a focus on strengthening home care within primary care and not in hospital home, under the reference of hospital systems.
Conceptually, home care includes home care modalities and home hospitalization.\(^3,6,7,10\) Home care “is inherent in the workflow of the Family Health Strategy teams (FHS) which shall be organized to accommodate the health needs of the elderly who need home care”.\(^6:125\)

Home hospitalization is the set of activities provided at home to clinically stable patients requiring intensive ambulatory care procedures above average, but can be kept at home, assisted by a specific team [connected to a hospital].\(^6:125\)

Home care is implicit in the practice of home nursing and home hospitalization and it includes: “A range of services performed at home and designed to support the therapeutic patient which range from personal care activities of daily living (personal hygiene, feeding, bathing, transportation and clothing), their personal care and medication fulfillment of healing wounds, bedsores and ostomy care, to the use of high-tech hospital nutrition as enteral/parenteral, dialysis, blood transfusions, chemotherapy and antibiotics, with medical service and nursing care 24 hours/day, and a support network for diagnosis and for other therapeutic measures”.\(^7:987\)

Unfortunately home care, even though supported by specific laws and regulations in the SUS, has shown that it is still poorly oriented towards meeting the development of health policy projects, as well as institutional development and community projects.\(^11,12\)

Under this perspective, we envisioned a strategy of innovation in nursing education in home care in order to broaden the scope of care model centered on the family health strategy, focused on the emphasis on health promotion, to the health care model centered in health needs, with emphasis on interfaces of the different levels of care, not just basic care, but also specialized care, hospital and urgent care considering the cumulative morbidity of the elderly population.\(^3,6,9,10\)

For the operationalization of the strategy we chose the case study to be applied to two elderly and their caregivers, idealizing up the form: “Nursing process and interview guide with the caregiver of the elderly” with adapted guidelines from the Ministry of Health\(^6\), where we obtained information and conceptual planning of home care to students.

The form contained information on sociodemographic and living conditions of the elderly, disease characterization and history of nursing, affected basic human needs, nursing diagnoses in the NANDA taxonomy and characterization of the caregiver and the family and social network according to the Calgary Model.

The Calgary Model assessment and family intervention is a multidimensional structure based on three main categories: structural, development and functional families. The model has steps that express the phases of the nursing process and although it does not adopt a rating system for nursing diagnoses, it is consistent with the NANDA taxonomy, since it is also referred in it the clinical judgment of families responses to actual and potential problems, identifying links in family relationships and showing the social support networks and the roles that members play in the daily lives of the family as a whole.\(^5,14\)

Then, we aimed that students could experience expanding the scope of primary care, in addition to the activities of home care, homecare introducing activities with complex care to elderly in bed and identifying their networks of family and social support for understanding the interfaces of the Unified Health System (SUS).

The theoretical-practical nursing program is held in insured health services in the university...
and it included assistance actions in which there is the implicit consent of the students, teachers, families, and staff. Since it was a teaching lab it was not necessary to formalize the procedure of consent and it was emphasized to students the need to observe of Code of Ethics for Professional Nursing and Resolution MS/196, especially the aspects relating to privacy, the confidentiality and non-identification of the institutions and actors involved.

The subject ‘Estágio Integrado II’: primary care and family health, offered to students in the fifth period of the undergraduate course in nursing at the Federal University of Rio Grande do Norte (UFRN) was composed of 225 hours and it was organized in groups of four to five students, with a system based in turns, where groups lived experiences in the area of primary care, in different types of services.

The experiment took place in a Basic Health Unit (BHU) in the municipality of Natal without family health strategy (FHS) deployed, but with the Community Agents Program (CAP) active and recognized by the community. The planning of the discipline at the UBS stipulated that the student group should develop a case study in the application of the nursing process and the Calgary Model to one or more families in the PAC coverage area.

This UBS is one of the health resources of the south district of Natal conducting consultations of Primary Care to the population, in an unplanned form. Assistance is provided by nurses, general practitioners, pediatricians, gynecologists, psychologists and social workers, providing diagnostic support services, dental care, health surveillance and PAC.

The subjects of this case study were two elderly ladies suffering in bed with incapacitating diseases and their caregivers. The first elderly had a condition of epilepsy, she was 85, the caretaker J. res.: fundam. care. online 2013. jul./set. 5(3):293-303 was one of her daughters; the second elderly had a condition of Alzheimer’s dementia, she was 75, and her caregiver was also one of her daughters. Both lived in the area covered by PAC from the UBS.

Initially the PAC community health agents arranged a list of the elderly in bed being assisted by UBS who should be vaccinated at home during the elderly vaccination campaign against Seasonal Influenza and Influenza A in June 2010 and accompanied the students on the geographical location of households. Having vaccinated the seniors, students selected the two ladies who were the object of the case studies, scheduling up with the family the date they would return to new homecare. The family medical records of the elderly were consulted by students at UBS before home care.

In order to establish proper home care to elderly, students performed two homecare in addition to the first, focusing in the immunization of the elderly and characterized as the first performed.

During the application of the forms by students focusing homes, they then proceeded to give instructions to caregivers about the care needed for elderly in bed in order to develop in students the skill of planning, evaluation of health education, that is, the incorporation of clinical-epidemiological model within Primary Care.

With the data obtained from family medical records of elderly and from forms of data collection in homecare, students formulated the affected basic human needs; diagnoses and nursing interventions; the genogram and ecomap.

**RESULTS AND DISCUSSION**

**CASE STUDY RESULTS**

Figures 1 and 2 show the result of the case studies of S.M.C. and I.C.L elderly
Figure 1 - Case Study 1: history of nursing, basic human needs affected, NANDA diagnosis, family caregivers features, genogram and eco-map of S.M.C. Natal / RN, 2010.

Case Study 1. S.M.C. lives with three family members in their own house brick with five rooms (three bedrooms), piped water, electricity, sanitation and bathroom inside the house with flush. Retired farmerdoes not have other sources of income, financially dependent on the genre and the family income is three minimum wages. Displays epileptic seizures and during a crisis, we suspected of cerebrovascular accident (CVA) not confirmed by diagnostic tests, although she has been previously hospitalized. Since the probable AVE, she is restricted to bed and developed pressure ulcers in different anatomical regions. She makes use of antiepileptic, antipsychotic and neuroleptic drugs.

History of Nursing. No schooling, 85 years; widow; Catholic; FC 83, PA 140x80, T 36.5 ° C; irregular sleep; thinned; muscular hypotonia, impaired motor function, urinary and fecal incontinence and use of disposable diapers, constipation, does not wander, restricted mobility, dependence to performing basic activities of daily living; impaired social cognition, is no longer located in time and space; fed orally by syringe with only liquids; stage I pressure auricular E ulcers and E trochanteric and sacral in healing process with bandage, dry skin, pale face and conjunctivae; eyes secretion, impaired visual acuity, pale oral mucosa, absence of teeth, dryness of the lips, upper and lower limbs with joint stiffness, tremors, decreased mobility and strength; hypotrophic muscles, swollen feet.

Affected basic human needs. Hydration, nutrition, intestinal and urinary elimination, sleep and rest, exercise and physical activity, skin integrity; neurological regulation, locomotion, auditory, tactile, visual, olfactory, gustatory and painful perception; communication; immune regulation; gregarious; spiritual.

NANDA diagnosis . Self-care deficit; ineffective individual coping; risk for deficient fluid volume, risk for imbalanced nutrition; risk for aspiration; risk of impaired swallowing, urinary and fecal incontinence, colonic constipation, disturbance in sleep patterns; potential for disuse syndrome; impaired skin integrity; altered mental processes, impaired physical mobility, changed sense-perception; verbal and written communication compromised; risk for impaired social interaction, family processes, impaired motherhood; role of caregiver strain, impaired verbal communication family; impaired home maintenance, disabled family coping; risk for infection, risk for infestation.

Family Caregivers Features. daughter and family caregiver of SMC, 49, married, moved in with her husband at the residence of the elderly, has two daughters, of which the older, although she does not live in her grandmother’s house, helps in wound dressing. Regarding the question: how is your daily life, we got the answer: it’s good, I like to work but somedays there’s no time left for anything [at home]. I think my sister should be more present here, because besides taking care of her [SMC] I also have to take care of the house. Today I did nothing ... it rained yesterday and I didn’t feel like washing her hair [SMC] then today it didn’t rain and I washed it, so the house is all messed up because there was not time to fix. At night, I don’t sleep very much because I am always waking up to take a look at her.
Case Study 1. I.C.L. lives with six family members in their own brick house with four rooms (two bedrooms), piped water, electricity, sanitation and bathroom inside the house with flush. She is retired, does not have other sources of income, and she is financially dependent on family income of two minimum wages. She had recurring complaints of headache and dizziness, when she was diagnosed with high blood pressure (HBP), she took several medications for hypertension. Five years ago Cerebral aneurysm was detected; she suffered a cerebrovascular accident (CVA), which, 8 months later, resulted in memory loss. Currently, she still has sequelae of stroke and was diagnosed with Dementia of Alzheimer's. She takes aspirin.

History of Nursing. Name: ICL, 75, widow, Catholic, low education level, HR 73, BP 150x100, RR 22, T 36.7 º C; obese; hypotonic musculature, impaired motor function, muscle atrophy, urinary and fecal incontinence, using disposable diaper, does not wander without help, restricted mobility, dependent to perform basic activities of daily living; impaired social cognition; little verbal interaction, is no longer located in time and space; is fed with smooth food; sleepy; incomplete dentition, thick whitish saliva, distended abdomen with central obesity, low tone and range of motion.

Affected basic human needs. Nutrition, exercise and physical activity, skin integrity; neurological regulation, locomotion, auditory, tactile, visual, olfactory, gustatory and painful perception; urinary and intestinal elimination; gregarious; spiritual; communication.

NANDA diagnosis. Self-care deficit; ineffective individual coping; risk for imbalanced nutrition; risk for aspiration, urinary and fecal incontinence, constipation colonic; disturbance in sleep patterns; tendency for disuse syndrome, impaired skin integrity, altered mental processes, impaired physical mobility; sense-perception changed; verbal and written communication compromised; risk for impaired social interaction, interrupted family processes, impaired motherhood; role of caregiver strain, impaired family verbal communication; impaired home maintenance; family coping disabled; risk for infection; risk for infestation.

Family Caregivers Features. M.G.S. daughter and caregiver of I.C.L., 58, married, lives at home with her husband and their two children, but spends most of the day at her mother's house which is near her home. Besides her mother, she had to take care of other sick family members in the past. She is obese. As for the question: how is your daily life, we got the answer: My bones are sore, especially the spine, because sometimes I have to carry my mother alone, since the others are not too careful with her [the elderly]. She also complained of: headache and pain in the left eye; I'm not taking care of my health because I do not have much time to go to a UBS. I sleep poorly because I am concerned about my mother at night since I do not sleep in her house. I take care of her with love and affection.

Figures 1 and 2 show that the elderly in the case studies showed functional disabilities to perform the basic activities of daily living and
therefore many basic human needs affected due to consequent physical injuries and complex nursing diagnosis, which demanded constant and continuous attention. Functional disability is a major problem of an aging person, which has close relationship with chronic illness and functional impairment in the elderly. Study on the profile of patients with functional losses and dependence served by the PSF in São Paulo found predominance of older women with mild disabilities and requiring less complex care, mainly related to hypertension, diabetes mellitus and senility, compatible with primary care, though, in older age groups, it was noted growing complexity of care required for oxygen, pressure ulcers, some kind of probe and tracheostomy.

The chronic degenerative diseases that affect the elderly imply decades of use of health services. The most common, ie, hypertension, stroke, heart failure, chronic obstructive pulmonary disease, cancer, fractures, amputations, arthritis, blindness caused by diabetes, depression and anxiety disorders, dementia, particularly Alzheimer’s, affecting 80% of people over 65 and 10% of them have at least five of these pathologies. After they are 75, the elderly have on average six of those chronic conditions that can lead them to a limitation in the ability to perform basic activities of daily living.

Epilepsy and dementia are common in elderly patients and the overlap between the two conditions is significant. The chronic epilepsy can result in cognitive decline due to the lack crisis control, to the neurobiological abnormalities and to adverse effects of antiepileptic drugs, condition shown by the elderly in the table of the case study I, S.M.C.

Besides the prevalence of chronic conditions that lead to reduced functional capacity in the elderly, the very physiology of aging helps to raise the risk of developing pressure ulcers, affecting all stages of healing, regardless of comorbidities that do interfere in the tissue repair process.

The elderly constitute an important risk group for vascular complications associated with hypertension and 85% of strokes occur in this population, being it the major cause of functional dependence in addition to lead to relevant complications such as urinary incontinence, dysphagia, depression and chronic pain.

Cognitive deficits resulting from stroke can impair a person’s ability to concentrate, decrease the level of attention and cause memory loss for short or long periods. Furthermore, the elderly who use benzodiazepines have less energy in daily life, greater locomotion difficulty, trouble sleeping and difficulties in basic activities of daily life, as we can see in the elderly of study case 2, I.C.L.

Genograms and ecomaps depicted in Figures 1 and 2 show the conformation and family relationships of the elderly S.M.C. and I.C.L. (people indexes). To construct the genogram and eco-map we used the concept of extended family like that made by the nuclear family which adds to other direct relatives, ie, people who have family ties and also the unrelated cohabiting with the person index.

In Figure 1 the genogram and ecomap show family relationships of elderly index S.M.C. The index elderly is a widow with five children. She lives with her daughter A.L.M., her caregiver, married to M.J.B. The index elderly, the caregiver daughter and her husband are in the nuclear family. In the four generations represented as extended family, the other children, the grandchildren and the great-grandchildren of SMC are included. The index elderly has a strong relationship with two daughters, one of them her caregiver, and two granddaughters, described by solid lines. With the other members of the extended family she maintains a weak
relationship, represented by the dotted lines, showing a lower family support network in relation to the case study 2.

In Figure 2 the genogram and ecomap show family relationships of index elderly I.C.L. She is a widow and has four children. She lives with her daughter, but her caregiver, L.L.C. lives with her husband and three children in another house. The index elderly, a daughter with her husband and four other family members constitute the nuclear family, living in the same house, however, the other members of the four generations of the extended family co-inhabit enclosed constructions in the grounds of I.C.L.’s house. Index elderly I.C.L. maintains very strong relationships with two of her daughters and two granddaughters, described by the continuous lines and maintains a large network of family support also strong with all the relatives listed in genogram, which are present, without providing care.

It is observed that the elderly S.M.C. and I.C.L., respectively are 85 and 75, both long-lived. The longevity affects the marital status of the elderly, where there is a predominance of widows in the aging population\(^4\), this is the situation of elderly in this study.

S.M.C. and I.C.L. though Catholics, no longer attend religious services routinely, but it is known that religious beliefs and practices appear to contribute to the well-being in old age, particularly the social support network and the ways of dealing with stress, although there is a lack of studies that show dynamically how the possible relationships between quality of life for seniors and religion.\(^{19}\)

As for schooling, S.M.C. and I.C.L. have no and low educational level respectively. Elderly with little education added to the variables that denote low socioeconomic status and poor quality of monitoring makes them more vulnerable to preventable hospitalizations; poorer health; poorer perception of health; business interruption due to health problems; remain in bed; worse physical chronic disease function and lower use of health services.\(^5-7\)

This situation is called ‘syndrome of frailty in the elderly’, which is defined by the difficulty to develop essential activities to live independently, in addition to clinical and biological factors, it is determined by modifying factors such as: low income, low education levels, lack of social network support and lifestyle conditions, which may occur between 10 and 25% of seniors over 65 and 46% over 85 living in the community.\(^6,20\)

Particularly among older women there is a significant occurrence of living with their sons or relatives for their care in basic activities of daily living, to medical appointments, hospital admissions and when there are difficulties of physical mobility, which may come along with a subjective feeling of protection against loneliness and insecurity. Thus, home care mainly involves family members because it is the main source of care for the elderly in crippling situations, predominantly as an alternative to informal support.\(^5,11\)

From the point of view of caregivers, the profile of informal caregivers are usually female, daughter or wife (often elderly too) that often splits this activity among their daily life.\(^5,7\)

According to the reports given by the caregivers, as Figures 1 and 2 show, this daily task is exhausting and of incessant repetition, with an overload of daily activities, and most of the times a restless and solitary activity, which can lead to emotional and social isolation. The caregiver faces the rupture of social bounds, her health may deteriorate, she has no holiday, low social participation and often has to manage disagreements among family members.\(^6\)

We noticed that, from the point of view of the UBS, there were limitations to be faced in home care. The first referred to the fact that the
health team served precariously to requests made by the PAC community health workers to monitor the elderly at home, because human resources were scarce and the service was not structured according to the FHT model.

Another limitation was related to basic human needs of the affected elderly which generated complex nursing diagnosis but that could have been prevented with early intervention of the UBS primary care health team, such as control of blood pressure, control of hypertension, ulcer prevention, pressure control and clinical changes characteristic to the aging process. In fact, there are still high rates of morbidity and unnecessary hospitalizations for conditions that could be better managed with basic care in primary care.18 When health units (without ESF) do not perform health checks, like the health unit in this case study, there is a limitation that may result in greater association with the lack of bonding with the family health team, making it impossible to provide ambulatory care as well as primary care.18

CONCLUSION

Home care through the application of the form: “Nursing process and interview guide with the caregiver of the elderly” was an important technology of access tool to get in contact with the family, useful for portraying the disease situations in which the elderly were and to systematize nursing care in the context of public policy for health care of the elderly6 and home care health.12

The case studies showed that home care was possible in economically disadvantaged environments and without ESF deployed, but it had limitations related to the difficulties in achieving the relations of reference, in the offering of planned and continued health actions and to carry out team work. Consequently, the lack of families without ESF monitoring can be an aggravating factor to control health of elderly in the community.

It was clear the sense of completeness and humanization of medicine, it was added primary care, such as immunization and health promotion with complex care, such as the treatment of pressure ulcers in a joint work with the caregivers, family and community health agents, within the household.

We could also see that basic care related to home care within Primary Care presented potential demand for more complex nursing procedures in view of nursing diagnosis found as deficient fluid volume, imbalanced nutrition, impaired swallowing, urinary and fecal incontinence and impaired skin integrity. From the point of view of family and social support we found alterations in family processes, a stressful caregiver role, impaired family verbal communication, impaired home maintenance and disabled family coping.

The elderly women studied were aged between 75 and 85, they had low education, low income, were bedridden and frail, they lived in relatively good housing conditions, but with discontinued and incomplete social, religious and health control. The genogram showed that they had a social support network constituted solely by the nuclear family and extended family, in homes with more than one resident. The ecomap showed that they lived with a person emotionally attached to them, without interpersonal relationships that may generate conflicts or family difficulties. They had community health workers tracking and poor participation of UBS and health team to their care needs.

The case studies also showed that, in home care provided to the elderly, primary care towards prevention and health promotion co-existed with complex care needs in the sense of health and it is imperative to expand the ESF with the constitution of specific teams for home care
activities, of different family health teams, but within Primary Care, since the elderly may have many basic human needs affected and complex nursing diagnosis that require preparation of the team, as well as specific material and specific attention given the emerging social demands.

REFERENCES

Lagana MTC, Malveira FAS, Melo JKF et al.

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