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Editorial

Original articles

Strategy for nursing research in Sweden

Clara Aarts[1]

First of all I would like to congratulate the people of Colombia for receiving the Nobel Peace Prize 2016. Peace is one important prerequisite for good health. In Sweden it has been peace for 200 years.

Short Introduction to Health Care in Sweden

Sweden has about 10 million inhabitants. The responsibility for health and medical care is shared by the central government, county councils (*n*=20) and municipalities (*n*=290).[1] Health care in Sweden is largely *tax-funded*, a system that ensures *equal access* to health care services. Health and medical care represents about 7.5 per cent of Sweden's gross domestic product (GDP). Sweden has 61 hospitals, seven are regional hospitals, and about 1200 Primary Health Care Centers, of which > 40% are private centers year 2015. It is common nowadays for county councils to buy services from private health care providers but patients are covered by the same regulations that apply to municipal care facilities. *Research example at our Department, Associate Professor Ulrica Winblad and research group who study the effects of marketization on health care.*[2]

Strategy for Nursing Research

The Swedish Society of Nursing, the professional organization for nurses, updated in 2016 their strategy for nursing research,[3] which I summarized below:

Today more than 1 500 nurses have a doctoral degree and about 120 are professors in the nursing field. The challenges Sweden faces today are an ageing population, increasing migration, high levels of mental health problems and lack of equality between different income groups. My comment: Internationally, Sweden is ranked as one the most equal gender countries in the world.[4] Example of gender equality: Parents are entitled to 480 days of paid parental leave, of those 90 days are reserved for the father/partner.

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In 2014 25% of the total parental leave was taken by the fathers/partners.[1] This example highlights equal gender possibilities for parental leave but unequal distribution, however compared with the possibilities of parental leave internationally Sweden has one of the best regulations in the world.

The *aim of nursing research* is to improve and make care safer and more equal for both individuals in need of care and their significant others. The research should be characterized by strong cooperation among different nursing and healthcare disciplines as well as other relevant areas. It is essential that the research questions are based on problems related to the clinical activities close to the patient. The Swedish Society of Nursing stresses the importance of involving all core competencies in research and quality improvement in nursing. The six competencies are *person-centred care*, *team work and collaboration*, *evidence-based care*, *quality improvement*, *safety* and *informatics*.

Research areas of importance for improved health are the following:

Living with a long-term disease or multi-morbidity. There is a need for research on information, education, self-efficacy, patient-provider partnerships, nursing care with reference to basic needs and the organization of nursing care delivery for this patient group.

Mental health and health effects of migration. Areas in which research can make an important contribution are mental ill health support for marginalized groups as well as the effects of the increase in migration on health and nursing. Three areas are prioritized: Child and adolescent mental health, adolescents and adults with long-term mental illness, and addiction problems and research on the health effects of increased migration. *Research example at our Department, Associate Professor Clara Aarts and research group.*[5]

Ill health and equality of care. The health of the population and access to nursing and healthcare are unevenly distributed and clearly linked to socio-economic conditions, migration and marginalized groups. There is a great need for research that investigates how nursing interventions and nurses' competence can prevent ill health and promote healthy living habits. *Research example at our Department, Child health and Parenting (CHAP) by our new Professor Anna Sarkadi and research group.*[6]

Safety. A key role for nursing research concerns quality as well as safety, for example preventing pressure ulcers, malnutrition, infections and fall injuries. Other vital research areas include a prevention focused safety culture, ensuring staff competence, and a safe care and work environment. *Research example at our Department, Professor Lena Gunningberg and research group who study prevention of pressure ulcers.*[7]

Leadership and the organization of nursing care. Leadership plays a crucial role in the competence of healthcare staff and the quality of nursing care. This is the most important factor when it comes to whether and how new knowledge is implemented in healthcare settings. The structure and organization of nursing care are important research areas. Person-centred care necessitates organization that invites the patient to be a partner and co-creator in his/her own care. *National research example on person-centred care lead by Professor Inger Ekman,*[8] *University of Gothenburg.*

Information and communication technology (ICT). There is a need for nursing research about how digital technology is perceived by users of e-health and welfare technology, how it should be structured in order to support patients, their significant others as well as healthcare professionals and how to improve information management in nursing, healthcare and general welfare. *Research example at our Department, Uppsala University Psychosocial Care Programme (U-CARE) by Professor Louise von Essen and research group.*[9]

Funding

The Swedish Society of Nursing highlights the importance of more resources and further developed structures for nursing research through dialogue with decision-makers, participation in debates, working to eliminate knowledge gaps and dissemination of relevant research results. Moving into the future cooperation with municipalities, county councils and regions should be extended to enable funding of single subject studies as well as larger research programs.

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Original article

Care models for people with chronic diseases: integrative review

Elis Martins Ulbrich[1]
Ângela Taís Mattei[2]
Maria de Fátima Mantovani[3]
Alexandra Bittencourt Madureira[4]
Luciana Puchalski Kalinke[5]

Care models for people with chronic diseases: integrative review

Objective. To identify the care models and the impact of the use of these in the care of people with chronic diseases reported in the literature in the years 2000 to 2014. **Methods.** Integrative literature review in which the following guiding question was adopted: Which care models are used in the care of patients with chronic diseases and what impacts can be verified through their application? We consulted the bibliographic databases Virtual Health Library, LILACS, MEDLINE, Spanish Bibliographic Index of Health Sciences and the Database of Nursing. **Results.** The sample consisted of 17 articles on the topic of interest. Three categories emerged from the analysis: health care costs, model-based care experience, and patient autonomy. The articles addressed self-management, case management and care model for people with chronic diseases. The major impacts on the use of the models were: a better relationship between the patient and the health professional, an increase in the autonomy of the person with chronic illness, and a reduction in personal and health care expenditure. **Conclusion.** The use of care models for people with chronic diseases presents benefits to the patient and to the health system. Nurses must actively participate in the application of these care models of people with this type of illness.

Descriptors: chronic disease; models, nursing; nursing care; nursing, practical.

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Modelos de cuidado de personas con enfermedades crónicas: una revisión integrativa

Objetivo. Identificar los modelos de cuidado y el impacto de la utilización de éstos en el cuidado de personas con enfermedades crónicas reportados en la literatura en los años 2000 a 2014. **Métodos.** Revisión integrativa de la literatura en la que se tuvo la pregunta norteadora: ¿cuáles modelos de cuidado son utilizados en la atención de los pacientes con enfermedades crónicas y qué impactos pueden ser verificados mediante su aplicación? Se consultaron las bases bibliográficas Biblioteca Virtual em Saúde, LILACS, MEDLINE, Índice Bibliográfico Espanhol de Ciências da Saúde y la Base de dados em Enfermagem. **Resultados.** La muestra estuvo constituida por 17 artículos sobre el tema de interés. Del análisis emergieron tres categorías: los costos del cuidado de la salud, la experiencia de atención basada en un modelo y la autonomía del paciente. Los artículos abordaron la autogestión, la gestión de casos y el modelo de cuidado a personas con enfermedades crónicas. Los mayores impactos en la utilización de los modelos fueron: una mejor relación del paciente con el profesional de salud, aumento de la autonomía de la persona con enfermedad crónica y la reducción del gasto en salud personal y del sistema sanitario. **Conclusión.** La utilización de modelos de cuidado de personas con enfermedades crónicas presenta beneficios al paciente y al sistema de salud, modelos en los cueles los enfermeros deben participar activamente en su aplicación.

Descriptores: enfermedad crónica; modelos de enfermería; atención de enfermería; enfermería práctica.

Cuidados á pessoas com doenças crônicas: revisão integrativa

Objetivo. Identificar os modelos de cuidado e o impacto da utilização destes no atendimento à pacientes com doenças crônicas, publicados na literatura de 2000 a 2014. **Métodos.** Revisão integrativa em que a questão norteadora foi: Quais modelos de cuidado são utilizados no atendimento aos pacientes com doenças crônicas e que impactos podem ser verificados mediante sua aplicação? As bases de dados pesquisadas foram o diretório da Biblioteca Virtual em Saúde, nas bases Literatura Latino-Americana e do Caribe em Ciências da Saúde, Medical Literature Analysis and Retrieval System Online, Índice Bibliográfico Espanhol de Ciências da Saúde e a Base de dados em Enfermagem. **Resultados.** A amostra foi composta de 17 artigos sobre o tema de interesse. Na análise emergiram três categorias: custos em saúde, experiência do cuidado com base em um modelo e autonomia do paciente. Os artigos abordaram a autogestão, a gestão de casos e o modelo de cuidados para pessoas com doenças crônicas. Os impactos da utilização dos modelos foram: melhor relação do paciente com o profissional de saúde, aumento da autonomia da pessoa com doença crônica e redução dos gastos em saúde. **Conclusão.** O uso de modelos de cuidados para as pessoas com doenças crônicas apresenta benefícios para o paciente e para o sistema de saúde. Os Enfermeiros devem participar ativamente na implementação desses modelos de cuidados para as pessoas com estas doenças.

Descritores: doença crônica; modelos de enfermagem; cuidados de enfermagem; enfermagem prática.

Introduction

Management of Chronic Diseases (CD) lacks attention and analysis worldwide. Many professionals develop models to minimize the impact of these diseases on people's health, as they are multifactorial conditions that impose requirements on patients, their families and the health system. The care of most of the CD include comparable and effective management strategies, so that similarities start to overlap differences.[1] Patients with CD need support in their community to maintain good health. They lack skills for self-management, and thus, health teams must provide planned and integrated care and treatment to meet their needs and assist them in early detection of signs and symptoms to avoid evolving the disease to an acute exacerbate state.[1] For this to be possible, professionals must acquire specific skills, and health services should work in interconnected, structured and organized through attention models or care models. These consist of careful logical systems that communicate, articulate and bind in a unique way the relationship between the population and its subpopulations divided by risk, interventions and health outbreaks interference.[2,3]

The Chronic Care Model (CCM) and the *Innovative Care for Chronic Conditions* (ICCC) stand out among models for CD. The first was introduced by a North American Institute in mid-1990 in order to transform care through a combination of elements such as health staff, self-management and decision support, and use of information and recording technologies.[4] The ICCC derived from the above was developed by the World Health Organization and is based on the belief that outcomes for chronic conditions are achieved when patients and family members are motivated and informed and health professionals work together.[5] These and other models have been created due to the need for changing the management of CD. They have the purpose of determining what actions and practices are adequate, respecting the peculiarities of their care. Thus, it is understood that there are some care concepts that have become part of the health discourse with the increased prevalence of CD worldwide, such as self-care management and case management (case management and operation are used interchangeably). Given the impact of CD and the need for life-long treatment and monitoring, these diseases require a new approach, such as the models of care. Thus, the present study aims to identify care models and their impact in the care of patients with CD published in literature from 2000 to 2014.

Methods

This is an integrative review, which allows summarizing studies approaching the selected theme, contributing to the understanding of problems and providing information for evidence-based practice. To guide this integrative literature review, a formal and rigid work structure based on a previously developed and validated research protocol was included.[6] The following steps were defined: identification of the theme and definition of the guiding question; establishment of inclusion and exclusion criteria of articles; approximation of material based in common characteristics; analysis and discussion of results, identification of differences and conflicts, and presentation of results. The main question of this study was: What care models are used to assist patients with chronic diseases and what are the impacts of their application? The databases searched were the directory of the Virtual Health Library (VHL), the Latin American and Caribbean Health Sciences (LILACS), *Medical Literature Analysis and Retrieval System Online* (MEDLINE), Spanish Bibliographical Index on Health Sciences (IBECS), and Nursing Database (BDENF).

The search took place from May through June 2014, using the following controlled and non-controlled and associated descriptors: “models of care *AND* chronic disease”, “nursing care *AND* chronic disease”, “nursing assessment *AND* chronic disease”, “patient care planning *AND* chronic disease” and “chronic disease *AND* patient care planning *AND* nursing models”. This resulted in gathering a total of 15677 articles. Inclusion criteria were: articles available in full-length for free, in Portuguese, English and Spanish, published from 2000 to 2014. This resulted in 2,671 articles, for which the main subject filters were applied, reducing the number to 196 articles. These were submitted to exhaustive reading in full-length, independently, to ensure rigor while selecting those articles contemplating the guiding question. Exclusion criteria were: articles with population or sample composed of children or patients with chronic wounds and articles repeated in different databases. After applying these criteria, 17 articles remained (Figure 1).

The aspects identified in the articles selected were: title, authors, publication year, journal, keywords, objective(s), methodology, results and the type of care model. Data were pooled from qualitative analysis, which identified the similarities; Thus, there were three categories: “Health costs”; “Model-based care experience” and “Patient autonomy”.

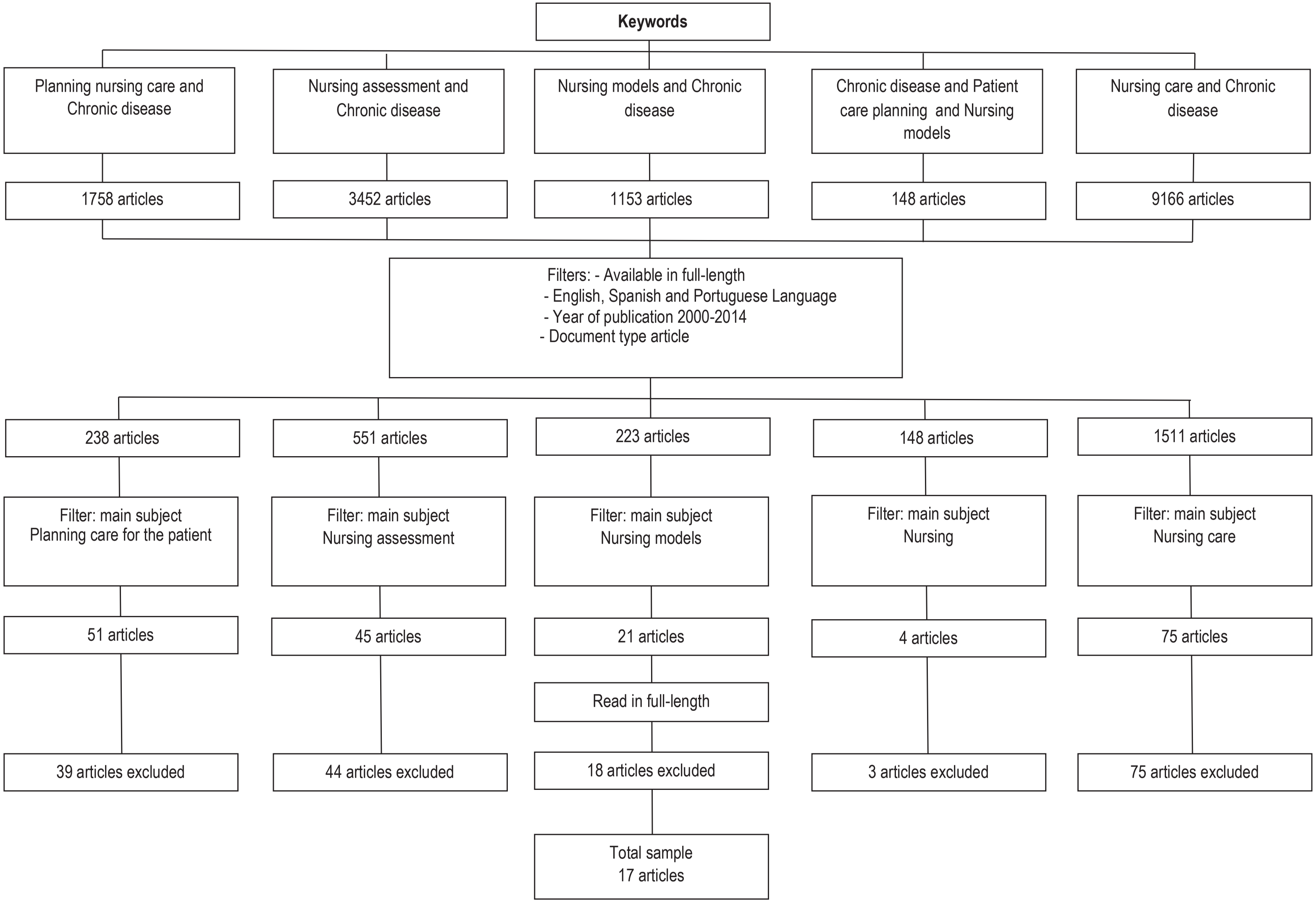

Figure 1. Algorithm of the methodological trajectory

Results

The sample included 17 articles, all published in international journals in English and in the MEDLINE database. Among journals, seven are Nursing journals, seven are Medical journals, one involves both areas, and two are interdisciplinary. Most articles (12) had "Planning Assistance *AND* Chronic Disease" as descriptors. No article was included with the keywords "Nursing care *AND* chronic disease". As for the year of publication, seven were published in 2008 and four in 2012. The CD addressed in the articles represent numerous areas such as genetic, psychiatric, musculoskeletal, metabolic, cardiovascular disorders, among others. Regarding care models exposed in the studies, nine were of the case management model type, six were of the self-management model type, and two were CCM. The evaluation of results led to clustering converging issues, from which three categories derived. These are entitled "Costs for the Health System"; "Model-based care experience" and "autonomy of the patient". In the first and third category, articles covering the case management model predominated, and in the second model, self-management predominated (Table 1).

Table 1. Characterization of articles according to title, year, journal, objective and care model

Title	Authors (year)	Journal	Objective	Model
Experiences of care planning in England: interviews with patients with long term conditions [7]	Newbould *et al.* (2012)	BMC Fam. Pract.	Exploring the care planning experience in patients with long-term conditions in three areas in England.	Case management
A Pilot test of the effect of guided care on the quality of primary care experiences for multimorbid older adults[8]	Boyd *et al.* (2008)	J. Gen. Intern. Med.	To evaluate the effect of a pilot intervention to improve the quality of primary care experiences for seniors with chronic illnesses.	Case management
Improving medical and psychiatric outcomes among individuals with bipolar disorder: A randomized controlled trial[9]	Kilbourne *et al.* (2008)	Psych. Serv.	To examine a health care model to bipolar disorder and to determine if individuals assigned to receive care through the model have better medical and psychiatric outcomes compared to usual care.	Self-management
A goal attainment pain management program for older adults with arthritis[10]	Davis & White (2008)	Pain Manag. Nurs.	To test a pain management intervention, which includes the definition of goals for people over 65 years of age who live independently in residential environments.	Self-management
Introducing the New England 4G framework of guided self-health for people in rural areas with physical and psychological conditions[11]	Stuhlmille & Tolchard (2012)	Aust. J. Rural Health	Discusses the 4G self-management model of New England.	Self-management
Prevalence and benefits of care plans and care planning for people with long-term conditions in England[12]	Burt J *et al.* (2012)	J. Health Serv. Res. Policy	To determine the prevalence and benefits of planned care and care plan for patients with chronic diseases.	Self-management
Pre-hospital discharge planning: empowering elderly patients through choice[13]	Merriman (2008)	Crit. Care Nurs. Q.	To describe the elements of a discharge planning program at Penn State Hershey Medical Center.	Case management
Carelink: Partners in a caring model: a cardiac management program for home care[14]	Shellman *et al.* (2008)	Home Health Nurse	To highlight the main results related to the *Carelink* model.	Self-management

Table 1. Characterization of articles according to title, year, journal, objective and care model (cont.)

Title	Authors (year)	Journal	Objective	Model
Nurse practitioner-led multidisciplinary teams to improve chronic illness care: The unique strengths of nurse practitioners applied to shared medical appointments/group visits[15]	Watts *et al.* (2009)	J. Am. Acad. Nurse Pract.	To describe the roles of nursing professionals in a health care model for patients with chronic disease.	Chronic Care Model
Comprehensive Primary Care for Older Patients with Multiple Chronic Conditions[16]	Boult & Wieland (2010)	JAMA	To describe the results of studies carried out in the US on the effects of care models for elderly patients with multiple chronic conditions.	Case management
The promoting effective advance care for elders (PEACE) randomized pilot study: theoretical framework and study design[17]	Allen *et al.* (2012)	Popul. Health Manage.	To describe the theoretical basis for Promotiing effective Advanced Care for the Elderly.	Self-management
Patient-Centered Plan-of-Care Tool for Improving Clinical Outcomes[18]	Rocco *et al.* (2011)	Q. Manage. Health Care	To compare clinical outcomes of patients who take part in a patient-centered care program and a control group, to verify the effectiveness of the care planning tool.	Case management
Guided Care: a new frontier for adults with chronic conditions[19]	Sherry *et al.* (2008)	Prof. Case Manage.	To describe the Guided Care as a promising model of case management.	Case management
Care Coordination for Patients With Complex Health Profiles in Inpatient and Outpatient Settings[20]	Berry *et al.* (2013)	Mayo Clin. Proc.	To describe the applicability and importance of Gundersen Model.	Case management
Improving diabetes patient outcomes: Framing research into the chronic care model[21]	Dancer & Courtney (2010)	J. Am. Acad. Nurse Pract.	To review the results of recent research that demonstrated improved outcomes for patients with type 2 diabetes and fit them in the Chronic Care Model.	Chronic Care Model
The community case management program: For 12 years, caring at its best[22]	Luzinski *et al.* (2008)	Geriatr. Nurs.	To describe a community case management program	Case management
Coordinated multidisciplinary care for Huntington's disease. An outpatient department[23]	Veenhuizen & Tibben (2009)	Brain Res. Bull.	To describe a plan of care coordinated by a case manager at the home of patients with Huntington's disease.	Case management

Discussion

One of the models used for care is the case management. This is a strategy that health services and social services use to support patients in their care, and that can result in the organization of a care plan in the form of a document with definition of agreed goals.[7] This model is also understood as a process of cooperation between a health professional, the patient with complex conditions and the social support network, to plan, monitor and evaluate care alternatives, in order to provide a qualified care, that may increase the functional ability and preserve the individual and family autonomy.[5]

The English Department of Health seeks a care planning based on case management. In this model, the person with a chronic condition comes into contact with the nurse or other health professional, discusses his care plan, implement it in written or electronic form (via email) and schedules a new meeting to review goals. This planning allows shared decisions, supports the patient to manage his condition and promotes care based on scientific literature.[7] In North American countries, there are case management programs adopted by health insurance companies, such as *Guided Care*, *Geriatric Resources for Assessment and Care of Elders* (GRACE), *Program of All-Inclusive Care for the Elderly* (PACE), among others. All these are models used in primary care and make the development of a comprehensive care plan possible, incorporating protocols based on evidence, the implementation of a long term care plan, proactive monitoring of the patient's clinical status, adherence to the care plan, and coordination of primary care in hospitals and emergency services.[16]

Another case management used in the United States by the health insurance companies is the Gundersen. This calls for improved communication between health professionals and patients in order to make them partners in the decisions taken on their care and in the pursue of better health conditions.[10] It was observed in a Brazilian study that the planning of care used as a tool served as a guide to record goals and to facilitate the case management. It was found that when guidelines are agreed between patients and professionals, and recorded, this helps to give continuity to the care in the homes.[24] Self-management is considered another model of care that is associated with teaching skills for problem solving. Its purposes are to incite changes in behavior, to teach the patient to recognize signs and symptoms of exacerbation of the disease and act before these.[25] An example of this model is the 4G, in which the health professional distributes information and guide self-management, in identifying the problem and of habits and lifestyle changes necessary. This takes place in three stages: meeting, generation and conduction. At first, the patient analyzes his situation through the five W, *What? When? Where? Who? Why?* and questions the impact of this in his life. Then, the professional helps the patient to understand the problem and to set medium-term goals, acting as a guide in the evaluation and review of such goals.[11]

Another self-management program is the Carelink. This was designed to assist the elderly in self-management of chronic conditions, with home visits, nursing interventions, health education and continuous monitoring. Nursing students, in partnership with communities, conduct training activities to promote and maintain health.[22] In addition to case management and self-management, the CCM, developed by Wagner *et al*.[26] assists in chronic situations of high prevalence and in the failure of systems to take care of them. The objective is to turn the daily care for patients with CD into something preventive and proactive by combining planned actions with community support, integrated decision and records, to promote teamwork and patient autonomy.[4,15]

To identify the impact of these models, the first category "Costs to the health system" refers to the use of the health care models by professionals in order to reduce financial costs of CD. Studies carried out with health insurance companies in North-America that adopt some case management and self-management programs showed that such companies reduced by 23% their cost by avoiding conducting unnecessary hospital care, which are performed in homes. When programs are not used, this results in 75% more costs for the health system.[16,19,20] The second category "Care experience based on a model" refers to the accounts on the experience of being assisted based on case management and self-management. One study found that when patients are assisted based on case management, they felt surprised and were not familiar with the term "care planning".[7] Other studies reported that case management can improve the quality of communication between the health team and patients and help to satisfy those involved in the experience of care, whether doctors, patients or families.[8,16,19] The use of the GRACE and PACE models and Gundersen program, patients reported receiving more information about their conditions, they had fewer needs that were not cared for, and the last aspect led to change the outbreak of the disease for the patient.[16,20]

A trial with bipolar affective disorder patients tested the case management and noted that patients whose care was performed with this model showed improved physical and mental health quality when compared to the usual care group. In the case of applying the Carelink model, it was found that the patient started to manage his illness safely and effectively and had no readmissions in the period.[9,22] The last category "Autonomy of the patient" concerns the role of the patient in making choices before the guidelines provided by the health team. Therefore, the will of one will prevail over the other, as exemplified in the case study that employed a home care plan for two patients who had Huntington's disease. One of them reported satisfaction with the care and returned to his work and leisure activities while the other refused to follow the guidance provided and his choice was respected.[23]

Conclusions. The use of case management model predominated and as benefits were found the close relation between patients and professionals, patients' autonomy, reduced expenses to individuals and health systems. We emphasize the importance of using these models in Brazil, since there was no national study included in this work. Thus, we suggest that health professionals share their experiences in the application and/or creation of other care models adapted to the Brazilian reality with a view to incentive the active participation of nurses in the use of these new technologies that can be applied in the care of chronically ill patients.

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Educational process in palliative care and the thought reform

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Educational process in palliative care and the overhaul of thinking

Objective. To know the contributions of the educational process in Palliative Care during the undergraduate level for the professional action of nurses in the care of patients at the end of life. **Methods.** This is a qualitative research, with discursive thematic analysis, based on Morin's theory of complexity. It was attended by seven newly-trained nurses and six nursing teachers from a Nursing Undergraduate Course. **Results.** It has found disruptions and the development of new ways of thinking and caring for patients at the end of life, highlighting that these patients should be treated with therapies to mitigate their signs and symptoms until death, focusing on quality of life; moreover, their psychosocial and spiritual aspects should be appreciated. **Conclusion.** The educational process in palliative care seems to be essential for nurses, as a way of organizing and systematizing patient care. It becomes indispensable that nursing programs also provide the students with the development of the awareness of the complexity of the human being and its relationship with the multiple biopsychosocial and spiritual aspects

Descriptors: education, nursing; terminally ill; palliative care.

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Proceso educativo en cuidados paliativos y reforma del pensamiento

Objetivo. Conocer las contribuciones del proceso educativo de cuidados paliativos realizado en el pregrado para el trabajo profesional de las enfermeras en el cuidado de pacientes con enfermedad terminal. **Métodos.** Investigación cualitativa con el análisis temático discursivo fundamentado en la teoría de la complejidad de Morin. Los participantes fueron siete enfermeros graduados y seis profesores del curso de graduación en Enfermería. **Resultados**. Se evidenciaron rupturas y la construcción de nuevas formas de pensar y cuidar a los pacientes con enfermedad terminal, destacándose que estas personas necesitan ser cuidadas con terapias para el alivio de los signos y síntomas hasta la muerte, por lo que el cuidado debe centrarse en el mejoramiento de la calidad de vida, valorando sus aspectos psicosociales y espirituales. **Conclusión.** El proceso educativo en cuidados paliativos fue fundamental en la forma de organizar y sistematizar la atención de estos pacientes. Es indispensable que los programas de Enfermería también promuevan en los alumnos el desarrollo de la consciencia de la complejidad del hombre y su interrelación de los múltiples aspectos biopsicosociales y espirituales.

Descriptores: educación en enfermería; enfermo terminal; cuidados paliativos.

Processo educativo em cuidados paliativos e a reforma do pensamento

Objetivo. Conhecer as contribuições do processo educativo em Cuidados Paliativos na graduação, para atuação profissional das enfermeiras no cuidado de pacientes na terminalidade. **Métodos.** Pesquisa qualitativa, com análise temática discursiva, fundamentada na teoria da complexidade de Morin. Participaram sete enfermeiros egressos e seis enfermeiros docentes de um curso de Graduação em Enfermagem. **Resultados.** Evidenciaram-se rupturas e a construção de novas formas de pensar e de cuidar de pacientes na terminalidade, destacando-se que esse paciente necessita ser cuidado com terapias para alívio dos seus sinais e sintomas até sua morte, enfocando a qualidade de vida; ter valorizados seus aspectos psicossociais e espirituais. **Conclusão.** O processo educativo em cuidados paliativos parece essencial aos enfermeiros, como forma de organizar e sistematizar o cuidado dos pacientes. É indispensável que os programas de Enfermagem também promovam aos estudantes o desenvolvimento da consciência da complexidade do ser humano e a sua relação com os múltiplos aspectos biopsicossociais e espirituais.

Descritores: educação em enfermagem; doente terminal; cuidados paliativos.

Introduction

Palliative Care (PC) is characterized as the approach that promotes the quality of life of patients and their families facing diseases that threaten the continuity of life through the prevention and relief of suffering.[1] Such care can and should be offered during any potentially fatal chronic disease. They aim to ensure an approach that improves the quality of life of patients and their families, in the presence of problems associated with life-threatening diseases, by preventing and alleviating suffering by early detection and treatment of pain or other physical, psychological, social and spiritual problems, and even in the mourning phase[1-3] In this perspective, patients requiring PC are characterized by a problem of enormous social impact and having an increasing importance in public health. In Brazil, there is not yet a PC structure adequate to the existing demands, both quantitatively and qualitatively.[4] Among the difficulties for the use of PC in Brazil, there is the way health professionals understand the health-disease process, death and dying. The scientific, technical progress of health not only increased the hope of living more and better, but also it generated difficult and complex situations about the end of life.[5,6]

Science prioritizes the pursuit of health and healing, understanding death as a failure and defeat. In diseases with slow development and poor prognosis, treatment may be more painful than the disease, and obstinate behaviors that are characterized by the continuation of healing treatments may occur, even when it is no longer possible, leading to a medically slow and prolonged death, accompanied by suffering.[7,8] In this sense, it is not possible to think about the possibility of effective use of PC without thinking and rethinking the training of health professionals in the care of people in the death and dying process. When researching how PCs have been used in the categories of work in medicine, social work, psychology, and nursing, it has been shown that nurses refer to feeling unprepared to deal with patients who are in the dying and dying process. This lack of preparation contributes to inadequate communication with the dying patient because nurses sometimes avoid talking to the patient or giving him apologies and promises of recovery that are not true.[9]

In a study carried out with nurses who work in a PC unit, they affirmed to recognize as fundamental to adequately assess the patient´s pain for an effective care to cancer patients and in PC. However, they reported difficulties for this evaluation, both for their lack of knowledge and for the lack of specific protocols for nursing in assessing the pain of patients with cancer.[10] Thus, based on a contextualization of the Brazilian reality in PC, it is believed the need to rephrase the way how this theme has been predominantly addressed in nurses´ education. Thinking from the complexity proposed by Morin, when he states that the overcoming of the crisis in which mankind is found must be sought from education through a reform of thought through a reform of teaching, it is possible to reflect that the mission of the education is not to transmit mere knowledge, but a culture that allows understanding the human condition and helps to live, favoring an open and free way of thinking.[11]

In the perspective of complex thinking, it is considered that it is not enough that the PC theme is present in a subject or as content to be developed in a subject. It is necessary that the principles underlying this philosophy of care are present transversely in undergraduate curricula throughout nursing education. Among these principles, it is possible to visualize aptitudes and domains such as the sensitivity to deal with the human being, understanding the different aspects that involve the process of dying; the respect for the patient´s autonomy; skills for dialogue and to deal with feelings and emotions; solidarity; the social commitment; ethics; the transverse and interdisciplinary collective work, the acceptance of death as a life process and the knowledge for the management of symptoms and pain control.[11] Thus, it is understood that the possibility of an educational process in PC will only be achieved if the predominant paradigms of the university are questioned and rethought, enabling the exercise of thought. Morin[11] proposes a reform in education that leads to the thought reform, and the reform of thought to the reform of education in the university.

Therefore, it is believed that the knowledge of how the educational process has influenced the professional practice of nurses in an undergraduate nursing course that offers a PC subject can contribute to the care of the terminal patient, to the strengthening of the need for insertion of PCs into nursing curricula, as well as identify possible gaps that can be strengthened in this educational process. Therefore, seeking to qualify the care of patients who require PC, the following research question emerged: How did the educational process of nurses in PC, in undergraduate courses, contribute to their performance in the care of terminally ill patients? Therefore, the objective of this study was to know the contributions of the educational process in PC, in the undergraduate course, for professional work of the nurse in the care of terminal patients.

Methods

The research used a qualitative approach, based on the complexity of Morin. It was developed at the Undergraduate Nursing Course of the Universidade Católica of Pelotas. The study participants were 13 subjects: 7 were nurses from the course under study, who attended the course of PC and who work in the care of terminally ill patients, and 6 teaching nurses who work in subjects with the approach to terminology and PC. The subjects agreed to participate in the study, allowing the recording of the interviews and the dissemination of data analyzed in scientific areas. Data were collected through a semi-structured interview, with prior contact with the subjects, informing them about the research objectives and, through their acceptance, day, place and time were scheduled for the individual interview, according to their availability. The interviews, recorded by a voice recorder, focused on the topic of death, terminality and PC in training, preparation and experienced difficulties in the care of terminally ill patients, among others. The statements of the graduates were identified by the letter E and the teachers by the letter D. No other identification was used in the speeches to ensure the anonymity of the study informants.

Data analysis followed the discursive textual analysis. First, the data were unitized, by fragmenting the interviews into units of meaning. After these, they were categorized and organized into the production of a textual structure constructed by categories and subcategories, which included the description and interpretation of the data, expressed through written productions.[12] Ethical aspects were respected, ensuring the protection of rights according to the recommendations of Resolution 466/12 of the National Health Council, with the approval of the Research Ethics Committee of the Federal University of Rio Grande, according to opinion Nº 97/2013.

Results

From the data analysis, the following categories were constructed: The educational process of PC and ruptures in the way of thinking about care in the terminality and the thought reform and the PC presented below.

The educational process of PC and ruptures in the way of thinking about care in the terminality

The educational process in PC contributed to the construction of spaces for reflection on the issues that involve caring for people with life-threatening and poor prognosis. The graduates emphasized their process of approaching the assumptions of PC philosophy, such as the need to improve and maintain the quality of life and to positively influence the course of the disease, as perceived in this testimony: *A very shocking case in my performance was a 45-year-old female patient. She had an intestinal necrosis, and her bowel was very short; so, she stayed in the hospital for a couple of months with parenteral nutrition and from these two months, she made the decision that would stop everything and go home to stay with her daughter. It was very shocking to the entire staff; In fact, we did not accept such behavior at the time; and when, then, I studied a little more about palliative care, so I understood, that at that moment she had that right. This acceptance came to me more when I did the subject until then I could not understand it. Today I can; Today, I understand, in fact, that for her to remain here for an indeterminate time, with a parenteral nutrition was not provided a life with quality. She did not have the family relationship; the daughter had been able to come here only once; A five-year-old girl. So today, I understand, but at the time I had quite a difficulty* (EPC).

It is emphasized that improving the quality of life in PC means to prioritize the patient in his subjectivity, respecting his desires and needs, maintaining the coexistence with his relatives, controlling the symptoms and improving the course of the disease. Moreover, they demonstrated that the PC educational process seems to have provided space for reflection on care in terminality and the importance of the professional to help patients understand their illness, to discuss the process of their finitude, and to make important decisions to live better their time remaining, as noted in the following testimony: *I had such difficulty [...], I usually say that the subject really has changed a lot; I had even difficulty in accepting death; even the way of thinking about accepting my death or that of a family member changed after I did the Palliative Care subject. It has changed, the way we talked about supporting the person, the patient as a whole, helping him understand,* *accepting, preparing, I think this causes us to have less resistance to death* (EPC).

Similarly, teachers were mobilized by student demonstrations not only to reflect and insert the topic of terminality and PC in the subjects, but also to strengthen and to be instrumental in participating more actively in this educational process for care in the terminal patient: *From the moment that the subject was placed in the curriculum and the students began to study, the students who had passed, began to make this demand and it was where the need arose, in my case, of getting Knowledge, because students began to bring these issues. So, sort of out of obligation, I started to get more of that. Moreover, then, I see that the students bring the need to discuss palliative care in the different subjects and I think we end up doing it, but more inside the hospital* (D). *I always try to address in the Child Health subject the issue of terminality, because I think that terminality you have to think it as you think birth. So, there is no way for me that is already on me, so I always approach it. Yesterday, there was a lesson, even for the students, that it was kind of shocked. I worked on the health of the child focused on pediatric oncology, because, more and more, we have more children diagnosed with cancer... because I think it is important to graduate to this market that absorbs, needs people who have sensitivity to understand this process and to deal with it, not to go away, to develop the skills also to deal with the terminality of children. So, I bring all the questions of treatment, approach, diagnoses, nursing diagnoses, during the treatment process, chemotherapeutic, radiotherapeutic, and surgical, and then, what I put it, around seventy, eighty percent of children with a diagnosis of cancer progress to cure, but from twenty to thirty per cent they develop into terminality. So, in the end, I bring the whole question of palliative care with this child that the diagnosis progresses to terminality* (D).

Despite the recognition of terminality and that the cure is no longer the purpose of the actions of health and nursing workers, manifestations of discomfort for not using cardiopulmonary resuscitation measures in a terminal patient can be noticed; in the reference of crying, when discussing this theme; as well as in the feeling of obligatoriness of the teacher to seek instrumentalization for care in the terminality. These manifestations of suffering seem to reflect how heavily the biomedical paradigm is inscribed in interviewees. *When I did the Palliative Care subject, I was one that said I had to reanimate the patient, what was that it was life: stop it, you have to go and call the doctor, try to revive him. Then, on a day-to-day basis, you will see that you have nothing else to do, that you will prolong the suffering of the patient. You will reanimate the patient and, soon enough, the patient will stop again, there is nothing to be done! That the patient´s time has come; but it took me a long time to accept this. Talking to the teacher, she was telling me there are things we cannot do. It arrives, at a certain point, that no longer depends on you. So, what do we have to do? We have to give that support to the patient, the best patient. However, after that, there is nothing we can do. So, at first, it was very complicated, I cried in Palliative Care classes* (EPC).

In this perspective, the care in the terminality still constitutes a challenge, since the education of the nurses prioritizes the death like professional defeat. The construction of the knowledge for the care in the terminality in the graduation made it possible, in a more systematic and emphatic way, to the graduates of an educational process in PC, to question, and put in doubt, how the care has been occurring in the terminality, allowing them to visualize and to implement other possibilities, such as when the cure of the disease does not seem possible, it is important to prioritize therapies that do not cause more discomfort than the disease, with the goal of promoting comfort and a dignified end of life: “Recognition that it is a period when people are no longer seeking healing.” If we did not have this subject, perhaps, I would not know how to act; I would treat him with the same condition as a patient who has conditions of rehabilitation... that it is not that question of bringing health to him, but to bring about that patient´s condition to be well, to feel good, to say goodbye in a good way (EPC).

Thus, ruptures with the Western culture system of ideas and the biomedical model involving death and dying were evidenced in the interviewees´ statements. Among them, there were the recognition of the uncertainty of cure being reached, changing, as the disease progresses, the perspective of healing to the perspective of care; that the patient in terminality needs to be taken care by the use of therapies for relieving signs and symptoms, so that he can live well until the moment of his death; of the need to consider the psychosocial and spiritual aspects of the patient. This perspective of care is emphasized in the following statement: *To do what he wants, right? Leaving the family member with him, not being too restrictive of family members, caring for pain [...] especially in pain. Of course, you must take care of the food, the nutrition, right? Besides the skin, integrity, everything, only the main thing is the care with the pain and the part of spirituality, in the sense that the preparation of it in relation, right? Because no one is prepared for death, right?* (EPC).

The thought reform and the PC

The discussion of PC for terminally-treated care allowed the estrangement of standardized practices in hospital institutions, such as, not dismissing care measures that are routinely offered to patients with a prospect of cure, and may be neglecting care to the patient in the process of dying and of death, as can be observed in EPC's speech: *You see. So, for example, there have been cases of me saying, 'Oh no ... that is SPP or ... it is care ... it's ... patient that is going to die, I do not know what; in a little while we will go and give some medicine'. However, he is an equal human being, right?* Thus, the understanding of the needs of patients in the terminal seems to have allowed a differentiated action and aimed at the maintenance of the patient's well-being, in the care of the biological aspects, until his death: *I took a patient to the medical clinic that was in a terminal phase; We treated him like a normal patient. What is a normal treat? Ah, it did not make any difference, because he is in the terminal phase, not..., the patient is short of breath, ah he is in the terminal phase, he has shortness of breath, understood! I am going there, I am going to change his oxygen, give a better quality to the patient, better support fo ... He is going to die, but he is going to die, but do not leave it there, God willing... give a qualityILife better, in fact, better death* (EPC).

Nurses who have undergone undergraduate PC subject report changes in their thinking, care for terminality, recognizing the relevance and need to consider psychosocial aspects, talking to the patient about the issues of death and of dying, supporting him and contributing to closures that allow a dignified death, can be done: *Regrading the patient, I talk to him, if he does not have any will, if there is someone he fought with a long time ago and If he wants to see, if he does not want to see, these things... if he had any place he wanted to go.... there was a patient that I came in more in touch. Then I was always on his return, talking, right? Asking things for him, remembering things, his children, what it was like for his children, that job. Because it is also a thing that... it is time to reflect on life too, right?* (EPC).

From the discussions provided in the PC subject, and according to the statements, each seems to construct and reconstruct, from their conceptions, perceptions, and experiences, the knowledge for care in the terminality. In the speeches, values in the PC philosophy were identified, and they consider the complexity of care in the terminality, going beyond the sick body, such as the need to care for the individual in its entirety, considering psychosocial and spiritual aspects and recognition of the finitude of his life. In this perspective, the care given to terminally ill patients occurs in different ways, allowing their discussion and reflection: *When the patient is lucid, conscious, he can talk, we open a space for him to tell his story... most of the time, in my point of view, he does not accept terminality or death, because no one accepts that way from one moment to the* *next. So, we try to talk to him; I have had students who have had great success in this regard, who have been able to speak even of spirituality with these patients. The patient opened up his perspective, that he was ready, that one day he knew he was going to die, that he believed in God, that he had a better place for him, but that he had to go through some things here and he had to finish. That; and of course, we, within that purpose, we do not explore the religion of the people, but rather that conception of improvement, even if that improvement is death* (D). Also, the teachers' statements highlighted the importance of considering the patient in its entirety; the interest in knowing whom this patient was today, knowing his history so that he can take care of him more adequately, also demonstrating a recovery of the valorization of humanity that composes the subject, beyond the biological.

Discussion

Educational processes need to focus not on full heads but well-headed heads that is, those who develop a general aptitude to situate and address problems. This aptitude relates to questioning, to doubts, to the "ability to rethink," to problematize.[11:22] Often, instruction annihilates curiosity; using general aptitude means appropriating another educational perspective that encourages one to instigate the fundamental problems of our condition and our age. The well-made head must also connect knowledge, giving it meaning. Thus, an object, when studied, cannot be isolated from its context, which Morin, using the concepts of biology, calls ecological thinking, in the sense that it places every event, information or knowledge about inseparability with its environment - natural, cultural, social, economic and political. This perspective allows perceiving relationships and interrelation between each phenomenon in its context, relationships of reciprocity between the whole and the parts, seeking to understand how a local modification affects the whole and how a modification in the whole has repercussions on the parts.[11]

Even though ruptures have been evidenced, manifestations that still denote resistance in the complete acceptance of the PC philosophy of end-of-life care have been noticed in some statements. These ruptures with dominant thinking are possible in the view of complex thinking when it is recognized that errors, uncertainty, and illusion are part of everyday problems, and it is fundamental for the thought reform to learn to deal with them.[13] The model of health care in Brazil and the organization of undergraduate nursing courses are still predominantly based on the biomedical paradigm. This model, on the other hand, unidimensionalizes knowledge by absolutizing the dimension of healing,developing the illusion that healing must always be sought, regardless of its real possibilities. Thus, care seems to be centered on the sick body, not the individual.

The hologrammatic principle of complex thinking enables to understand the perception of death as a professional defeat. The hologram brings the idea of wholeness; the smallest point in the image contains almost all the information of the represented object; so, when you see a hologram you cannot dissociate the part and the whole. The part is on the whole, just as the whole is in part.[14] Thus, the biomedical paradigm is strongly inscribed culturally in the nurses who know, think and act from it, since each, in its singularity, contains in a hologrammatic way the all of which he is a part and at the same time part of it. In this perspective, Western culture, also registered in nurses and teachers, has the belief that a quality medicine is one that provides the best and most modern diagnostic treatment, with the expectation that there will always be better modalities in the future, strengthening the hope that today the cure is not possible, but perhaps tomorrow it must always be sought, even in extreme situations and that bring deep suffering to the patient.[15,16]

It is known that knowledge is not a copy of the reality, but a translation that is reconstructed through perception. The perception of each nurse is the translation and reconstruction of signals captured and encoded by the senses. In this way, perception represents the world view, its subjectivity, composed both of fears and desires, of each subject, interviewed, so that it is subject to errors. The fears and desires that surround the complexity of finitude multiply the risks of error, because, at the same time that death is biological, it is impregnated with culture and predominantly, denies our mortality.[14] It is observed the advance in the technologies of the Science and poverty in dealing with the fundamental issues of humanity.[14] Meanwhile, nurses who have graduated and who have undergone PC subject, in reporting strangeness of standardized practices in hospital institutions, demonstrating the development of their sensitivity to identify that these patients need to be cared, for a dignified death, for the rescue of humanitarian issues. Problematizing, to be surprised by daily facts, with established relationships, to be intrigued by what is considered natural, demonstrating the need to review the rationalities imposed by society and also by the very construction of subjects, nursing workers.[17] Also, recognition of mortality allows the confrontation of the uncertainty of life, translated by the uncertain destiny of each, recognizing the limits of knowledge. No matter how much has been evolved in the discoveries for the cure of diseases and the management of chronic diseases, maintaining the quality of life of the individual, some are still incurable and with poor prognosis, hindering to control by the curing treatment programs. The nurses, during their training, must learn to deal with these uncertainties and apparent failures, developing skills to strategize, from the care needs of each patient. The strategy continually seeks to gather the information collected and the accidents encountered during health care.[11]

It is understood that dealing with the uncertainties in health care is to recognize that any treatment, once initiated, is unpredictable as to its results, since it is inserted into a game of interactions and feedbacks in the environment in which it is carried out, that can divert it. The cure and even lead to an outcome contrary to what was expected (death).[13] The exercise of thought, based on the philosophy of PC, enabled the student to reflect on the complexity and multidimensionality of the patient in the process of dying and death, considering, besides biological needs, the social, psychological, family and spiritual dimensions, recognizing that they are not isolated but are interdependent. It is necessary to develop the student´s ability to consider the patient´s human condition, which can be understood by the construction of the consciousness that each belongs to the human species, being at the same time a cosmic, physical, biological, cultural, cerebral, spiritual human being.

As limitations of this study, there is the non-inclusion of other categories of health professionals. Interdisciplinarity is one of the principles of palliative care, producing new studies about the relationships among these professionals can contribute to the construction of strategies in the care of terminally ill patients, enabling a dignified death. Also, the performance of other researches in nursing courses that investigate experiences of the educational process in palliative care can contribute to a better understanding of this subject.

The conclusion of this study shows that the educational process in a PC subject has contributed to the care of terminally ill patients. It was evidenced the construction of new ways of thinking and caring for patients who experience the process of dying and death. Among these new ways of thinking, it should be pointed out, as more relevant, that the patient in the terminality needs to be taken care by using therapies to relieve their signs and symptoms, so that he can live well until his death, focusing on the quality of life; the need to consider and value the psychosocial and spiritual aspects of this patient; and also the strangeness and discomfort regarding the non-use of measures of care and comfort. The work also demonstrates that the PC education process seems essential for nurses as professionals who care for people throughout their life cycle, health and illness situations, life and death, especially if they consider issues so present today related to the development of science and the consequent prolongation of treatments of cure of patients in the terminality, through means considered disproportional and extraordinary, causing extreme suffering to these patients, their relatives and even the professionals who attend them.

For an educational formation for care in terminality, considering how terminality and death are commonly perceived and experienced in Western culture, it is necessary to have more organized and systematized spaces, to trigger doubts and questions to reflect on the issues involving death and dying. In this sense, for ruptures with the biomedical paradigm and advances in the quality of care in the terminal patient, it is considered essential the development of the consciousness of the complexity of the man and the interconnection of the multiple biopsychosocial and spiritual aspects. It is critical that education is oriented toward building awareness that all these components are important and need to be involved in care.

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Original article

Health-promoting lifestyle and assertiveness in university workers

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Health-promoting lifestyle y assertiveness in university workers

Objective. The work sought to analyze the health-promoting lifestyle variables, assertiveness, and their relation to health condition in university workers. **Methods.** This was a correlational study with the participation of 112 workers selected through census-type random sampling. To gather information, a form was used that included sociodemographic, anthropometric, and clinical data, in addition to the health-promoting lifestyle scale by Walker *et al.,* and the Assertiveness Questionnaire by Lazarus and Folkman. **Results.** Participants ranged between 24 and 72 years of age (mean=45), 61.6% were women, 49.1% worked the day shift, and 59.8% worked as teaching staff. With respect to health problems diagnosed: 17.0% had high blood pressure, 4.5% type II diabetes mellitus, and 4.5% suffer both diseases; 46.4% were found with overweight condition and 23.9% with some degree of obesity. The general index of health-promoting lifestyle was of 39.2 points (medium level) and assertiveness of 74.5 points (high level). A positive and significant relationship was found between assertiveness and the general index of the health-promoting lifestyle (r =0.22, p <0.05) and the dimensions of spiritual development (r=0.35, p<0.01) and interpersonal relations (r=0.29, p<0.01). Likewise, glucose level,

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one of the parameters of the health condition, was inversely related to the health-promoting lifestyle (*r* = -0.20, *p* <0.05) and to the dimensions of physical activity (*r* = -0.24, *p* <0.01) and stress management (*r* = -0.24, *p* <0.01). **Conclusion.** The findings show the relationship between the health-promoting lifestyle and assertiveness in university workers studied, which justifies the design of educational interventions from nursing aimed at improving these aspects.

Descriptors: assertiveness; life style; surveys and questionnaires; occupational health.

Estilo de vida promotor de la salud y asertividad en trabajadores universitarios

Objetivo. Analizar las variables estilo de vida promotor de la salud, asertividad y su relación con el estado de salud en trabajadores universitarios. **Métodos.** Estudio correlacional en el que participaron 112 trabajadores seleccionados por muestreo aleatorio tipo censo. Para la toma de información se utilizó un formulario que incluyó datos sociodemográficos, antropométricos y clínicos, además de la escala de estilo de vida promotor de la salud de Walker *et al.* y del cuestionario de asertividad de Lazarus y Folkman. **Resultados.** Los participantes tenían entre 24 y 72 años de edad (Media=45), 61.6% fueron mujeres, 49.1% laboraba en el turno matutino y 59.8% se desempeñaba como docente. Con respecto a los problemas de salud diagnosticados, 17.0% presentó hipertensión arterial; 4.5%, diabetes mellitus II, y 4.5% padecía ambas enfermedades; 46.4% se encontró en nivel de sobrepeso y 23.9% en algún grado de obesidad. En el índice general de estilo de vida promotor de la salud fue de 39.2 puntos (nivel medio) y asertividad de 74.5 puntos (nivel alto); se encontró relación positiva y significativa entre la asertividad y el índice general del estilo de vida promotor de la salud (*r*=0.22, *p*<0.05) y las dimensiones de desarrollo espiritual (*r*=0.35, *p*<0.01) y de relaciones interpersonales (*r*=0.29, *p*<0.01). Asimismo, la cifra de glucosa, uno de los parámetros del estado de salud, se relacionó de manera inversa con el estilo de vida promotor de la salud (*r*=-0.20, *p*<0.05) y con las dimensiones de actividad física (*r*=-0.24, *p*<0.01) y de manejo del estrés (*r*=-0.24, *p*<0.01).**Conclusión.** Los hallazgos muestran la relación que existe entre el estilo de vida promotor de la salud y la asertividad en trabajadores universitarios estudiados, por lo que se justifica el diseño de intervenciones educativas de enfermería tendientes a mejorar estos aspectos.

Descriptores: asertividad; estilo de vida; encuestas y cuestionarios; salud laboral.

Estilo de vida promotor da saúde e assertividade em trabalhadores universitários

Objetivo. Analisar as variáveis estilo de vida promotor da saúde, assertividade e sua relação com o estado de saúde em trabalhadores universitários. **Métodos.** Estudo correlacional no qual participaram 112 trabalhadores selecionados por amostra aleatória tipo censo. Para a toma de informação se utilizou um formulário que incluiu dados sócio-demográficos, antropométricos e clínicos, ademais da escala de estilo de vida promotor da saúde de Walker *et al.* e do questionário de assertividade de Lazarus e Folkman. **Resultados.** Os participantes tinham entre 24 e 72 anos de idade (Media=45), 61.6% foram mulheres, 49.1% trabalhavam no turno matutino e 59.8% se desempenhava como docente. Com respeito aos problemas de saúde diagnosticados: 17.0% apresentaram hipertensão arterial, 4.5% diabetes mellitus II e 4.5% padecem ambas doenças, 46.4% se encontrou em nível de sobrepeso e 23.9% em algum grau de obesidade. O índice geral de estilo de vida promotor da saúde foi de 39.2 pontos (nível médio) e assertividade de 74.5 pontos (nível alto), se encontrou relação positiva e significativa entre a assertividade e o índice geral de estilo de vida promotor da saúde (*r*=0.22, *p*<0.05) e as dimensões de desenvolvimento espiritual (*r*=0.35, *p*<0.01) e de relações interpessoais (*r*=0.29, *p*<0.01). Assim mesmo, a cifra de glicose, um dos parâmetros do estado de saúde, se relacionou de maneira inversa com o estilo de vida promotor da saúde (*r*=-0.20, *p*<0.05) e com as dimensões de atividade física (*r*=-0.24, *p*<0.01) e de manejo do estresse (*r*=-0.24, *p*<0.01).**Conclusão.** Os resultados mostram a relação que existe entre o estilo de vida promotor da saúde e a assertividade em trabalhadores universitários estudados, pelo que se justifica o desenho de intervenções educativas de enfermagem tendentes a melhorar estes aspectos.

Descritores: assertividade; estilo de vida; inquéritos e questionários; saúde do trabalhador.

Introduction

Health promotion consists in providing people the necessary means to improve their health and exert greater control over it. To reach an adequate state of physical, mental, and social wellbeing, an individual or group must be able to identify and carry out its aspirations, satisfy its needs, and change the environment or adapt to it.[1] Within the labor context, Health Promotion in the Work Place (HPWP) includes a variety of policies and activities in the work area designed to increase control and improve the health of employers and employees at all levels.[2] Likewise, HPWP implies achieving quality of life in work scenarios, considering the consequences that the conditions appertaining to the labor activity generate upon workers within their different spheres: family, social, political, economic.[3] Similarly, this constitutes a strategy to study the health of workers in their work environments within a comprehensive approach to have a greater impact on the quality of life of the individuals.[4]

Work and work environments, as well as habits and life routines, bear an effect upon the health, security, and wellbeing of workers. Healthy workers tend to improve their work environment through relationships with their colleges and their supervisors or subordinates, which leads to improving the quality of work.[5] This relationship between health and labor quality is quite important to foster a culture of prevention within organizations and favor the adoption of a health-promoting lifestyle. Work conditions and the form of labor organization that seeks greater productivity, efficiency, and competitiveness based on producing high-quality goods and services have caused workers to be subjected to excessive effort to satisfy market demands and exigencies, leading man to live for work, which has – in many cases – made employees neglect their physical and mental health. This, in turn, has promoted in workers a more sedentary life with scant opportunities for relaxation and recreation, which is reflected in inadequate work performance.[6]

Added to the aforementioned, there is the worrisome situation of chronic non-communicable diseases related to unhealthy lifestyles in workers. Statistics in this regard indicate that annually 17.3-million people die due to cardiovascular diseases; 7.6-million due to cancer; 4.2-million due to respiratory diseases; and 1.3-million due to diabetes mellitus.[7-9] Said ailments not only affect the quality of life of workers and their families, but also reduce their productivity and increase health costs, thus, compromising the country's development. Studies with workers with respect to overweight and obesity conditions reported a prevalence of 34% in university students[10] and 55% in administrative, manual, technical, and directive workers.[11] Another study reported 85% sedentary habits and 41% cigarette consumption among construction workers.[9] Regarding consumption of foods with an excess of calories, a prevalence is reported at 40% among workers from the health sector.[8]

Health in the workplace is a social commitment, with employers being the main agents responsible for providing the warranty to conduct and execute diverse labor functions in the best conditions to guarantee not only good work, but also for the work to be done not to affect at a given moment the physical and mental health of workers.[6] Within the academic context, the healthy university proposal has as a base a concept of integral health, which is a product of the internal and external harmonious relations individuals manage to maintain with themselves, with the rest, and with the environment.[12] A health promoting or healthy university is defined as that which incorporates health promotion onto its educational and labor project to propitiate human development and improve the quality of life of those who study or work there.[13] Therein, a healthy university is that which conducts sustained actions aimed at promoting the integral health of the university community, acting upon the social and physical environment, as well as on the formation of healthy lifestyles.[12] Its implementation is founded on the public health policies of every country, under the entry of health promotion, hence, its study can encompass the themes of responsibility of health, physical activity, nutrition, spiritual development, interpersonal relations, and stress management as dimensions of the health-promoting lifestyle.

In the specific case of the university workers, it is known that they constantly relate to other people; often, distressing and conflictive situations are derived from these relations, which are strong generators of stress and can obstruct work performance,[14] therein, it is important to include the study of psychosocial variables, which is the case of labor assertiveness defined as a conduct of self-affirmation within the work context.[15] According to Arredondo,[16] assertive professionals permit obtaining benefits in the personal area by increasing their self-esteem, personal security, self-image, and self-concept, as in the work area by diminishing the number of stressful situations and increasing efficacy, quality, and competence in the services offered. Hence, assertiveness must be a characteristic or personality trait that employees must have or develop to remain at their work posts and above all adapt to diverse changes and provide an optimal response to what the environment offers day to day.

Universidad Autónoma de Guerrero (UAGro), in its collective labor contract for 2015-2016,[17] establishes that the Joint Mixed Commission on Health, Hygiene, Safety, and the Environment in the workplace, responsible for permanently overseeing work conditions in all the dependencies at UAGro to determine the working conditions of risk for the health of workers, will identify and justify, through a study, which are the work centers that represent risks to them, will dictate the implementation of prevention and/or correction measures and, when warranted, provision of adequate protection equipment to carry out their assigned academic activities. Likewise, in the Institutional Development Plan (PDI) 2013-2017,[18] UAGro promotes the culture of health in university students through sports.

On its part, the Nursing Academic Unit N° 1 and 2 (UAEnf. 1 and 2), through the Joint Mixed Sub-commission on Health, Hygiene, Safety, and the Environment in the workplace conducts health promotion of workers; in addition, the Sub-direction of Integration of Substantive Functions promotes the culture for health through sports, music, dance, and social coexistence among students, professors, and administrative personnel. Likewise, other sections have been involved for intra- and extra-mural participation in these events. In spite of these initiatives, university workers at UAEnf. 1 and 2 endure chronic-degenerative diseases triggered by sedentary habits, smoking, alcoholism, obesity, and violence, among others, which lessen the quality of health of the workers.

This project is part of one of the strategies on prevention and health promotion contemplated within the vision and strategic direction of the 2013-2017 Institutional Development Plan,[19] at UAEnf. 1 and 2. This shows evidence of the health-promoting lifestyle of workers and, consequently, the bases to develop specific programs to improve the work environment, propitiating the comprehensive development of its workers to favor productivity and quality in the workplace, as well as the health of the university students and staff. This permits broadening understanding around the perception of workers' health conditions, of risks, and evidence of disease processes and allows having a diagnosis on lifestyles of its workers to underpin the design of interventions that favor the health of its members, besides strengthening its vision as a sustainable university. The aim of this study was to analyze the health-promoting lifestyle and assertiveness variables and their relation to the health condition in university workers.

Methods

A cross-sectional study was conducted, which described the health-promoting lifestyle, assertiveness, and health condition variables of university workers. Likewise, the relations among these variables were studied. The universe was made up of workers from the Nursing Academic Units No. 1 and 2 from Universidad Autónoma de Guerrero (México); data was collected from August to December 2015; all (100%) of the active workers participated in the study (n=112).

To gather the sociodemographic information, a form was designed containing sociodemographic information (age, gender, marital status, and level of education), work information (shift, area, and post), personal background, anthropometric data (body mass index (BMI) and waist circumference), blood pressure (BP), and capillary glycemia. The health-promoting lifestyle variable was measured by using the Spanish version of the health-promoting lifestyle questionnaire (PEPS II),[19] comprised of 52 items with Likert-type response scale: 1 = never, 2 = some times, 3 = frequently, 4 = routinely. The scale is made up of six subscales: responsibility for health (9 items = 33, 3, 51, 15, 21, 39, 27, 9, 45), physical activity (8 items = 4, 10, 16, 22, 28, 34, 40, 46), nutrition (9 items = 2, 8, 14, 20, 26, 32, 38, 44, 50), spiritual development (9 items = 6, 12, 18, 24, 30, 36, 42, 48, 52) interpersonal relations (9 items = 1, 7, 13, 19, 25, 31, 37, 43, 49), and stress management (8 items = 5, 11, 17, 23, 29, 35, 41, 47); the range of scores to obtain is from 52 to 208 points, this score was converted to index (values between 0 and 100 points), indicating that a higher index reflects better lifestyle. The authors of the instrument reported reliability of 0.94 in the total scale and for the dimensions from 0.79 to 0.94.

In relation to the measurement of the assertiveness variable, the study used the Assertiveness Questionnaire (AQ) by Lazarus and Folkman,[20] which contains 20 statements. The instrument was designed for self-administration, evaluating through self-report the social behavior of individuals (two dimensions: assertiveness and non-assertiveness), exploring their responses in varied situations of social interaction, according to a dichotomous response (yes/no). Its correction is carried out by adding the responses given in each column (*Assertive response: Yes* in items 1, 4, 5, 6, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, and *No* in items 2,3,7,8,10,11/ *Non-assertive response*: *NO* in items 1, 4, 5, 6, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, and *Yes* in items 2, 3, 7, 8, 10, 11), obtaining two scores, one for each column, which indicates that a higher score in the column of assertive responses means higher assertiveness. The authors of the questionnaire reported reliability of 0.6.

Data analysis was performed by using the statistical program for social sciences – SPSS, version 17. Frequencies, proportions, and percentages were obtained for the categorical variables and for the numerical variables measures of central tendency and variability were calculated. Additionally, the Kolmogorov-Smirnov goodness-of-fit test was carried out with correction by Lilliefors to contrast the normality hypothesis in the distribution of the continuous variables, which is why parametric tests were applied. This research adhered to the ethical principles in the Regulations of the General Health Legislation on Health Research.[21] Participation was voluntarily and signed informed consent was obtained from the participants; the study was approve by the authorities of the Nursing Academic Units No. 1 and 2 from Universidad Autónoma de Guerrero.

Results

The reliability test of the instruments used in this study was established through the Cronbach's alpha and Kuder Richardson coefficient values. In this study, the PEPS II and AQ instruments showed an internal consistency of 0.9 and 0.6, respectively. In terms of the sociodemographic characteristics of the participants, women prevailed (61.6%); married marital status (58.9%); participant age ranged between 24 and 72 years with a mean of 45.4±12.2 years. Of all the participants, 68.8% belonged to the Nursing Academic Unit No. 2; as far as level of education, 63.4% had graduate degree; 24% undergraduate degree; 8.1% high school; and 4.5% basic education; in addition, 49.1% worked the day shift, 69.6% worked as teaching staff, 18.8% as administrative staff, and 11.6% in general services.

With respect to the health condition of the participants, 74.1% of them had no health problem; however, 17% had a medical diagnosis of high blood pressure, 4.5% had type II diabetes mellitus, and 4.5% suffered both diseases. Regarding BMI, overweight condition was noted in 46.4% and obesity in 22.2% (Grade I = 20.5%, Grades II and III = 1.7%). Table 1 shows the results of the general index of health-promoting lifestyle and by its dimensions, as well as the assertiveness index, where the dimensions with the highest indices were spiritual development and interpersonal relations. The general index of health-promoting lifestyle corresponds to a medium level and that of assertiveness to a high level.

Table 1. Central tendency measurements of the indices per dimensions of the health-promoting lifestyle and assertiveness

Scale / Domain	Minimum	Maximum	Mean	Median	Standard deviation
Health-promoting lifestyle	19.7	65.4	39.2	40.8	9.1
Responsibility in health	2.8	75.0	38.5	38.8	13.2
Physical activity	0.0	75.0	31.9	31.2	16.0
Nutrition	16. 7	69.4	38.7	41.6	11.1
Spiritual development	19.4	75.0	42.0	41.6	10.5
Interpersonal relations	16.7	75.0	42.0	41.6	10.5
Stress management	12.5	65.6	36.8	37.5	11.6
Assertiveness	30.0	100.0	74.5	75.0	13.1

Table 2 shows the percentages of assertive and non-assertive responses for each of the items from the Assertiveness Questionnaire, where the participants have an assertive tendency by obtaining higher scores in the assertive responses column, except in questions 1, 2, 7, and 8 that have a lower percentage of assertive responses.

Upon evaluating the correlation among the dimensions of the general index of the health-promoting lifestyle, assertiveness, and some health condition variables, a positive and statistically significant relation was found among assertiveness and: the total score of the health-promoting lifestyle questionnaire (r=0.22, p<0.05) and the dimensions of spiritual development (r=0.35, p<0.01) and of interpersonal relations (r=0.29, p<0.01). From the health condition parameters, glucose was inversely related to the total score of health-promoting lifestyle (r=-0.20, p<0.05) and the dimensions of physical activity (r=-0.24, p<0.01) and stress management (r=-0.24, p<0.01). As per the difference of health-promoting lifestyle by gender, this was statistically significant (t=2.99, p<0.05), women had a higher (41.17) mean than men (36.03) and in self-esteem it was not statistically significant (t=0.51, p>0.05), the mean in men (59.76) as in women (58.62) were similar. The relationship between the age variable and the health-promoting lifestyle (r=0.07, p>0.05) and self-esteem (r=-0.15, p>0.05) were not statistically significant.

Table 2. Percentage of assertive and non-assertive responses for each reactive of the Assertiveness Questionnaire

Questions	% of responses	
	Assertive	Non-assertive
1.- When a person is openly unjust, you usually say nothing about it	33.0	67.0
2.- You always do whatever possible to avoid problems with other people	6.3	93.8
3.- You usually avoid social contacts for fear of doing or saying something inappropriate	80.4	19.6
4.- If a friend betrayed you by revealing a secret of yours, you tell him/her what you really think	79.5	20.5
5.- If I shared a room with another person, I would insist on them doing part of the cleaning	85.7	14.3
6.- When an employee at a commercial establishment takes care first of a person who arrived after you did, you let him/her know	84.8	15.2
7.- You know few people with whom you can feel relaxed and have a good time	35.7	64.3
8.- You would hesitate to borrow money from a friend	44.6	55.4
9.- If you lent someone an important amount of money and who seems to have forgotten about it, you would remind them about it	87.5	12.5
10.- If a person mocks you constantly, you find it difficult to express your irritation or disgust	75.9	24.1
11.- You prefer to remain standing in the back of a meeting room to avoid looking for a seat up front	81.3	18.8
12.- If someone constantly kicked the back of your seat at the movies, you would ask them to stop doing so	52.7	47.3
13.- If a friend called you every day at late hours of the night, you would ask them to call you no later than a certain hour	75.9	24.1
14.- If you were speaking to a friend and he/she suddenly interrupts the conversation to speak, you would express your irritation	52.7	47.3
15.- If you are at a fancy restaurant and your meat is too raw, you would tell the waiter to have it cooked a bit more	92.9	7.1
16.- If the owner of an apartment you are renting did not make the repairs he had agreed to, you would insist on these being done	91.1	8.9
17.- You would return a defective garment you bought a few days ago	87.5	12.5
18.- If someone you respect were to express opinions contrary to yours, you would dare express your own point of view	88.4	11.6
19.- You can say no when others make unreasonable requests	91.9	8.9
20.- You consider that each person must defend their own rights	95.5	4.5

Discussion

The results obtained from the reliability test of the Assertiveness Questionnaire are considered accepted, given that Tavakol and Dennick[22] describe that reliability coefficients >0.70 are satisfactory in most cases; nevertheless, some circumstances will require a higher score or will consider a lower score acceptable. Additionally, it is worth mentioning that given the cultural diversity of the Mexican population in its urban and rural zones, it is deemed convenient for this instrument to be applied and used for other research to test its reliability in other contexts.

In reference to the variables measured in the health condition, seven of every ten participants do not have health problems. The proportion of overweight condition found in this population (four of every ten) was higher than the national mean (three of every ten), and that of obesity (two of every ten) was lower than the national mean (four of every ten). With respect to the values found for hypertension (17%) and obesity (4.5%), these are lower than the national values (hypertension 64.1%; diabetes 9.2%).[23]

Regarding the results from the general index of health-promoting lifestyle, (mean=39.2) corresponds to a medium level; this data was similar to that reported in another study in healthy adults who obtained a good score[24] and that of assertiveness (mean=74.5) at a high level, this was different from the results reported in workers who evidence assertiveness deficit.[25] Results of the correlation among assertiveness and the health-promoting lifestyle and the dimensions of spiritual development and interpersonal relations were positive and statistically significant, indicating that higher assertiveness goes in hand with greater health-promoting lifestyle, spiritual development, and interpersonal relations. This is because when workers have higher levels of assertiveness, they make better decisions with respect to conducts that favor their health-promoting lifestyle.[26] In addition, glucose – as a parameter of the health condition – was inversely related to the health-promoting lifestyle and to the dimensions of physical activity and stress management, that is, with higher levels of glucose there is worsened health-promoting lifestyle, physical activity, and stress management. In this regard, related studies report that exercising improves peripheral resistance to insulin.[27]

To conclude, the study permitted demonstrating the relationship between the health-promoting lifestyle and assertiveness in the university workers studied, which justifies the design of educational interventions from nursing aimed at improving these aspects. In light of the study's results, the need is evident to carry out prevention and health promotion actions, directed at this population group from the multidisciplinary approach. Within this context, the nursing professional's role becomes relevant as health promoter, a position that grants them the necessary elements to contribute to improving the health and quality of life of this population by implementing actions aimed at providing workers the skills to maintain a health-promoting lifestyle and develop personal self-affirmation (assertiveness) conducts that allow them to improve the self-care practices of their health.

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Risk factors for developing cardiovascular disease in women

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Risk factors for developing cardiovascular disease in women

Objective. To evaluate the factors that predispose to the development of cardiovascular diseases in women who were attended at a Basic Health Unit in Londrina, Paraná, Brazil. **Methods.** The research was characterized as observational and quantitative. The population sample consisted of 60 women aged over 18 years, being chosen at random. For data collection, mHealth Data Collector (mHDC), a mobile device, was used with a questionnaire on daily habits, health status, and disease. Measurements were made of glucose and blood cholesterol, blood pressure and anthropometric measurements. Data collection took place in February 2014 to November 2014. **Results.** Risk factors were overweight / obesity (63.8%) and sedentary lifestyle (65%), followed by family history of cardiovascular disease (43.3%), hypercholesterolemia (38.3%), and hypertension (13.3%). **Conclusion.** This population of women presented risk factors for the development of cardiovascular disease in all ages, being necessary the implementation of measures that stimulate changes in the daily habits and improve health conditions among women by the health team.

Descriptors: cardiovascular diseases; women; life style; risk factors; surveys and questionnaires.

Factores de riesgo para el desarrollo de enfermedad cardiovascular en mujeres

Objetivo. Evaluar los factores que predisponen el desarrollo de enfermedad cardiovascular en mujeres atendidas en una Unidad Básica de Salud en Londrina, Paraná, Brasil. **Métodos.** Estudio descriptivo. La población de la muestra consistió en 60 mujeres mayores de 18 años, seleccionadas aleatoriamente. Para la recolección de información, se utilizó el software móvil mHealth Data Collector (mHDC), que contiene un cuestionario sobre hábitos de vida, estado de salud

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y la enfermedad. Se realizaron mediciones de glucosa, colesterol, presión arterial y medidas antropométricas. **Resultados.** Se encontraron factores de riesgo de tener sobrepeso / obesidad y la inactividad física (68.3%), seguido de antecedentes familiares de enfermedad cardiovascular (43.3%), hipercolesterolemia (38.3%) y la hipertensión (13.3%). **Conclusión.** Esta población de mujeres tenía factores de riesgo de desarrollar enfermedad cardiovascular en todas las edades, lo que requiere la aplicación de medidas para estimular cambios en los hábitos diarios y mejorar las condiciones de salud.

Descriptores: enfermedades cardiovasculares; mujeres; estilo de vida; factores de riesgo; encuestas y cuestionarios.

Fatores de risco para desenvolvimento de doença cardiovascular em mulheres

Objetivo. Avaliar os fatores que predispõem ao desenvolvimento de doenças cardiovasculares em mulheres que eram atendidas em uma Unidade Básica de Saúde em Londrina, Paraná, Brasil. **Métodos.** A pesquisa foi caracterizada como observacional e quantitativa. A amostra populacional consistiu de 60 mulheres com idade superior a 18 anos, sendo escolhidas aleatoriamente. Para coleta de dados, foi utilizado o software mHealth Data Collector (mHDC), dispositivo móvel, com questionário sobre hábitos diários, estado de saúde e doença. As medições realizadas foram de glicose e colesterol no sangue, pressão arterial e medidas antropométricas. A coleta de dados ocorreu em fevereiro de 2014 a novembro de 2014. **Resultados.** Foram encontrados fatores de risco como sobrepeso/obesidade e sedentarismo (68.3%), seguidos por história familiar para doença cardiovascular (43.3%), hipercolesterolemia (38.3%) e hipertensão (13.3%). **Conclusão.** Esta população de mulheres apresentaram fatores de risco para o desenvolvimento de doença cardiovascular em todas as idades, sendo necessário a implementação de medidas que estimule mudanças nos hábitos diários e melhore as condições de saúde entre as mulheres pela equipe de saúde.

Descritores: doenças cardiovasculares; mulheres; estilo de vida; fatores de risco; inquéritos e questionários.

Introduction

Chronic Non-Transmittable Diseases (CNTD) are characterized by a set of diseases, such as cardiovascular disease, obesity, diabetes, cancer, chronic respiratory diseases and neuropsychiatric disorders. With the increase in the ageing population and life expectancy in Brazil, these diseases are prevalent in the mortality statistics, with 63% of the deaths in the world and 72% in Brazil.[1] The CNTD are directly related to social determinants, such as modifiable risk factors like gender, genetics, and age; and the modifiable risk factors such as smoking, alcohol, physical inactivity, and unhealthy foods. These can lead to intermediate risk factors such as hypertension, hyperlipidemia, overweight, obesity, and glucose intolerance, with outcomes in coronary diseases, cerebrovascular disease, peripheral vascular disease, chronic kidney disease, diabetes, chronic obstructive pulmonary disease, emphysema, cancers, and psychological problems.[1-3] With the chronic diseases and their consequences, reducing life expectancy and increasing spending to the public health sector in rehabilitation, so there is an interest in monitoring the epidemics with control and prevention mechanisms in Brazil and in the world.[2] The detection form is the individual nutritional assessment based on medical records, nutrition, medications, physical, biochemical, and anthropometric data in order to identify or confirm the existence of risk for a nutritional disease process, such as obesity and dyslipidemia. Thus, the early identification of risks and guidelines involving dietary, anthropometric and biochemical data by the health team can promote health, rehabilitation and encourage healthy habits.[4]

In Brazil, there was established the Strategic Action Plan for Facing the CNTD in Brazil (2011-2022), aiming to promote the development of effective public policies for preventing and controlling the CNTD,[2] being accomplished primarily in the Primary Health Care (PHC), consolidated through the government program for Family Health Strategy (FHS), which act on health promotion, disease prevention, diagnosis, treatment of the most prevalent health problems and personal recovery of the entire population. The clients in this system are mostly children and middle-aged and elderly women, while men are generally elderly with already-installed chronic diseases.[3] The main professional involved in these activities, is the nurse and nursing team, which is responsible for assisting, preventing and promoting self-care, assuming the responsibility for continuity of cares along all life time. When comparing men and women, in Brazil, some studies have been showing parameters that show risk for developing cardiovascular disease in both genders. In women, there is a larger index of abdominal obesity, physical inactivity and diabetes, while in men the consumption of tobacco, alcohol, inadequate diet and overweight, hypertension and dyslipidemias prevail, thus there is no difference in both genders.[1,3] Demonstrating the need for promotion and prevention to control the development of cardiovascular diseases mainly in modifiable risk factors, primarily with stimulation of physical activity for women and social habits changes for men. In this context, the main objective of this study was to evaluate the current state of health in the population of young women, adults, and elderly in a Basic Health Unit in Londrina, Paraná, Brazil, raising the risk factors that predispose to the development of cardiovascular disease.

Methods

Research. This study is characterized as observational and descriptive, with quantitative analysis. The study's subjects were 60 women over 18-year old, with appointment in a Basic Health Unit (BHU) for medical consultation, medical monitoring and nursing care, in Londrina, Paraná, Brazil. For ends of analysis and comparison, the subjects in the research had been distributed in three groups of 20 women each, being the age groups: 18 to 39 years, 40 to 59 years and equal or above of 60-year old. The subjects had been selected by simple random sampling on categorical variable and the number of subjects was determined through statistical calculation, using the following parameters: population (p) of the municipality of Londrina, normal standardized variable (Z) associated with the confidence level (90%), real event probability (p) and sampling error (e) (10%). The formula used for the calculated sample (n) was $n=N.Z^2.p.(1-p)/Z^2.\ p.(1-p) + e^2.\ (N-1)$.

Data collection. Data collection took place between February to November 2014, at the BHU itself, by means of a structured questionnaire with the help of mHealth Data Collector (mHDC)[4] software via a mobile device, where data was gathered, stored, and transported to the researcher's email in the tabular form. The questionnaire included the following items: a) personal data form; b) anthropometric data; c) biologic data; d) daily habits, and; e) previous illnesses. For anthropometric data collection, such as Body Mass Index (BMI), Waist Hip Ratio (WHR) and Body Fat Percentage, anthropometric scale, Toledo® brand, anthropometric tape, and Cescorf® brand adipometer, were used. As far as WHR measuring tape was placed at the midpoint between the costal edge bottom and the iliac crest and the skin folds were vertical triceps, diagonal subscapular, diagonal suprailiac, and horizontal abdomen.[5] In order to check the blood pressure, a sphygmomanometer, and stethoscope were used, Premium® brand. The classification of the parameters for BMI was 18.5 to 24.99 (normal), 25 to 29.99 (overweight), 30 to 34.99 (level I obesity), 35 to 39.99 (level II obesity) and >40 (level III obesity). For WHR the following were classified as low (<0.74), moderate (0.74 to 0.81), high (0.82 to 0.88) and very high (>0.88). For the Body Fat Percentage, the following were rated as average (15 to 22%), above the average (23 to 29%) and obese (≥ 30%).[5] Blood pressure was checked after the subjects has been resting for 10 minutes. The following were classified as systolic blood pressure normal (<120 mmHg), borderline (130-139 mmHg) and normal (>140 mmHg). For diastolic blood pressure the metrics were considered normal (<80 mmHg), borderline (80-90 mmHg), and abnormal (>90 mmHg).[6]

For data collection regarding the biological analyses, the subjects fasted for 12 hours and one used a Portable Monitor for determining blood sugar and for cholesterol level, Accutrend Plus Roche® model. Asepsis for the subject's left index finger was done, later on, a puncture with sterile lancet, Roche®, a drop of blood was collected on a blood sugar strip, then, another drop on a test strip for cholesterol, always using the same device that has been calibrated for the respective samples, the results took a few seconds to be ready and have been stored in the mHDC. Blood sugar values were classified as normal (<100 mg/dL), impaired glucose tolerance (100-126 mg/dl) and diabetes mellitus (≥ 126 mg/dl).[4] For total cholesterol, values were classified as normal (<200 mg/dl), borderline (200-239 mg/dl) and high (>240 mg/dl).[4] Later on, the results were showed by absolute and relative frequency, distributed in tables, with percentage.

Statistical Method. The differences between the women groups on different ages were analyzed using Variance Analysis (One-way ANOVA). The results compared among the different ages were: smoking, alcohol, physical activity, family history for coronary heart disease, cholesterol, blood sugar, WHR, Body Fat Percentage, BMI, systolic and diastolic blood pressure. The statistical significance level for the tests was $p<0.05$.

Ethical Aspects. The project was approved by the Research Ethics Committee of Universidade Estadual de Londrina under written opinion report number 494.314, CAAE: 24140413.0.0000.5231, and the participation of the subjects in the study was voluntary, consisted of prior acceptance by the subject and women were oriented about the purpose of the survey and after resolving possible doubts, signed the Consent Form. Anonymity was guaranteed, preserving the privacy of the received information.

Results

Socioeconomic characteristics. The subjects in this study were divided according to age group, being 20 women aged between 18 and 39 years, 20 between 40 and 59 years and 20 over 60-year old, a total of 60 subjects. Table 1 shows the data for the socioeconomic conditions, such as the educational level, familiar income and conditions in work. Regarding the schooling of the studied population, it was found that for women aged 18 to 39 years and 40 to 59 years, 12 (60%), and 11 (55%) have high-school grade, respectively, and of the 20 women over 60-year old, 11 (55%) have only elementary school. This shows that the lower is the age, the higher the educational level, which may be related to the higher incentive for education and development of the country. On family income, it was verified to be higher in women aged between 18 and 39 years, while in the elderly it is minor, with one to three minimum salaries classification. Regarding employability, most women have employment bond, 16 (80%) between 18 to 39 years, 12 (60%) between 40 to 59 years and women over 60-year old were 10 (50%).

Health indicators and daily habits. Table 2 shows data for health indicators and daily habits, including smoking, alcoholism, physical activity, family history of coronary heart disease and previous illnesses. For smoking, 18 (90%) of the women are aged between 18 to 39 years, 15 (75%) 40 to 59 years and 15 (75%) above 60-year old, have never smoked. With respect to the indicators of alcohol consumption among women from 18 to 39 years, 40 to 59 to 39 years and 60 years or more, 18 (90%), 17 (85%), 20 (100%) reported not consuming alcohol, respectively. In relation to data on physical activity, there was low adhesion of women to physical exercising in all age groups; and 39 (65%) said they do not have this habit. About the family history of coronary heart disease, women were asked if they have already had cases of cardiovascular disease in first-degree relatives (father, mother and/or brother) in their family, as a result, in the age group going from 18 to 39 years and 40 to 59 years, 13 (65%) and

11 (55%) denied owning, respectively. In the age group of women over 60-year old, it was found that 10 (50%) reported coronary heart disease in the family. Also in Table 2, on the indicators of previous diseases, only 14 (23.3%) women denied the existence. The remainder, 46 (76.6%), all had some sort of pre-existing pathology. There is an increase in the pathologies as age increases.

Table 1. Socioeconomic characteristics for women by age group. Londrina, Paraná, Brazil, 2014

Characteristics	Total (n=60) n (%)	Age Group 18-39 (n=20) n (%)	 40-59 (n=20) n (%)	 ≥60 (n=20) n (%)
Educational Level				
Illiterate	11 (18.3)	2(10)	3 (15)	6 (30)
Elementary School	6 (10)	1 (5)	2 (10)	3 (15)
Incomplete elementary school	19 (31.7)	4(20)	4 (20)	11 (55)
High-School	23 (38.3)	12 (60)	11 (55)	0 (0)
Higher education	1 (1.7)	1 (5)	0 (0)	0 (0)
Family income				
1 Salary	18 (30.0)	4(20)	5 (25)	9 (45)
1 to 3 Salaries	25 (41.7)	8 (40)	8 (40)	9 (45)
4 to 10 Salaries	17 (28.3)	8(40)	7 (35)	2 (10)
Employability				
Retired	9 (15.0)	0 (0)	2(10)	7 (35)
Unemployed	20 (33.3)	4(20)	6 (30)	10 (50)
Employed	31 (51.7)	16 (80)	12 (60)	3 (15)

Anthropometric and biological parameters. In Table 3, there are data on cholesterol, blood sugar, WHR, BMI, body fat percentage, and systolic and diastolic blood pressure. In relation to the cholesterol indicators, in all age groups more than half of the women had satisfactory results, but this proportion has decreased as age increased. The results were changed to 6 (30%), 8 (40%) and 9 (45%) between the ages going from 18 to 39 years, 40 to 59 years, and with more than 60-year old, respectively. Being these results concerning for middle-aged women, which resemble to the old ladies. As for the blood sugar, 57 (95%) of women were within normal limits, just 9 interviewees referred a diagnosis for diabetes mellitus, these results suggest that there is a blood sugar control by using pharmacological therapies. Data from BMI, WHR, and body fat percentage (Table 3) were collected in order to measure overweight and obesity. In relation to BMI, normal values were obtained for just 10 (50%) of women aged between 18 to 39 years. Results altered to overweight and obesity, 10 (50%) were from 18 to 39 years, 17 (85%) from 40 to 59 years and 14 (70%) over 60-year old. These results are above the national average and the highest index in women aged from 40 to 59 years.

Regarding the WHR, the results are alarming, only 1 (1.7%) women in the group range from 18 to 39 years had low risk, the remainder, 59 (98.2%) had some type of risk. As a result of abdominal fat accumulation, 15 (75%) from 18 to 39 years and 20 (100%) were classified at high risk of developing chronic diseases in

Table 2. Health indicators and daily habits in women by age group. Londrina, Paraná, Brazil, 2014.

		Age Group			
Characteristics	**Total** *(n=60)* **N (%)**	**18-39** *(n=20)* **n (%)**	**40-59** *(n =20)* **n (%)**	**≥60** *(n =20)* **n (%)**	***p***
Smoking					
Never smoked	48 (80)	18 (90)	15 (75)	15 (75)	0.4046
Ex-smoker	7(11.7)	1(5)	3(15)	3(15)	
Less than 10 cigarettes/day	5 (8.3)	1(5)	2(10)	2(10)	
Alcoholism					
Yes	5 (8.3)	2(10)	3(15)	0 (0)	0.2255
No	55 (91.7)	18 (90)	17 (85)	20 (100)	
Physical Activity					
Not practicing	39 (65)	12 (60)	13 (65)	14 (70)	0.9685
Times: 1/ week	1 (1.7)	1(5)	0 (0)	0 (0)	
2/ week	8 (13.3)	3(15)	3(15)	2(10)	
3/ week	0 (0)	0 (0)	0 (0)	0 (0)	
4/ week	4 (6.7)	1(5)	2 (10)	1 (5)	
5/ week	8 (13.3)	3(15)	2 (10%)	3(15)	
Family history of a coronary disease					
Absent	34 (56.7)	13 (65)	11 (55)	10 (50)	0.6344
Present	26 (43.3)	7 (35)	9(45)	10 (50)	
Previous illnesses					
Absent	14 (23.3)	11 (55)	3(15)	0 (0)	0.0062
Hypertension	24 (40)	4(20)	8(40)	12 (60)	
Diabetes mellitus	9 (15)	2(10)	3(15)	4(20)	
Hypercholesterolemia	10 (16.6)	1(5)	2(10)	7(35)	
Coronary heart disease	3 (5)	1(5)	0 (0)	2(10)	
Obesity	3 (5)	3(15)	0 (0)	0 (0)	
Endocrine pathology	10 (16.6)	1(5)	5(25)	4(20)	
Immune pathology	3 (5)	1(5)	0 (0)	2(10)	
Infectious disease	1 (1.7)	1(5)	0 (0)	0 (0)	
Mental pathology	6 (10)	2(10)	2(10)	2(10)	
Rheumatic disease	5 (8.3)	2(10)	1 (5)	2(10)	
Respiratory disease	2 (3.3)	1(5)	0 (0)	1(5)	
Neuropathology	4 (6.7)	1(5)	1(5)	2(10)	
Osteoarthritis pathology	8 (13.3)	2(10)	1(5)	5(25)	
Urologic pathology	2 (3.3)	0 (0)	1(5)	1(5)	

the other bands. These results are interesting, because, as age increases, there is a tendency for an increase in abdominal fat in women, but in our data, the young ladies show results that are very approaching women over 40-year old, bringing a concern with the overall risk of the population for developing chronic diseases. Referring to body fat the percentage, the obesity prevalence has been identified in all age groups, 11 (55%) from 18 to 39 years, 20 (100%) from 40 to

59 years and 19 (95%) above 60-year old are obese complementing the altered values of BMI and WHR. Data on the systolic blood pressure showed only 1 case (5%) abnormal and 3 (15%) borderline in the age group from 18 to 39 years; 1 (5%) and 4 (20%) abnormal and borderline for the range from 40 to 59 years. In the age group above 60-year old, 12 (60%) showed borderline values.

The diastolic blood pressure showed borderline value similar for both age groups, respectively, 11 (55%), 10 (50%), 15 (75%), which is worrying, showing that even in young and middle-aged women, there is an approximate index of diastolic pressure with the elderly women that are more likely to shows changes due to factors that involve increasing age.

Table 3. Anthropometric and biological data on women by age group. Londrina, Paraná, Brazil, 2014.

		Age Group			
Characteristics	**Total (n=60) n (%)**	**18-39 (n=20) n (%)**	**40-59 (n =20) n (%)**	**≥60 (n =20) n (%)**	***p***
Cholesterol					
< 200 mg/dl (normal)	37 (61.7)	14 (70)	12 (60)	11 (55)	0.8769
200 to 239 mg/dl (borderline)	16(26.7)	3(15)	7(35)	6(30)	
> 240 mg/dl (abnormal)	7 (11.6)	3(15)	1(5)	3(15)	
Blood-sugar					
< 100 mg/dl (normal)	57 (95)	19 (95)	20 (100)	18 (90)	0.6494
100 to 126 mg/dl (decreased tolerance)	2 (3.3)	0 (0)	0 (0)	2 (10)	
>126 mg/dl (Diabetes mellitus)	1 (1.7)	1 (5)	0 (0)	0 (0)	
WHR (waist/hip reason)					
Low	1 (1.7)	1 (5)	0 (0)	0 (0)	0.0034
Moderate	4 (6.7)	4 (20)	0 (0)	0 (0)	
High	21 (35)	2 (10)	12 (60)	7 (35)	
Very high	34 (56.7)	13 (65)	8(40)	13 (65)	
Body fat percentage					
On average: 15 to 22%	1 (1.7)	1 (5)	0 (0)	0 (0)	0.0004
Above average: 23 to 29%	9 (15)	8 (40)	0 (0)	1 (5)	
Obese: >30%	50 (83.3)	11 (55)	20 (100)	19 (95)	
BMI (Body Mass Index)					
18.5 to 24.9 (normal)	19 (31.6)	10 (50)	3 (15)	6 (30)	0.7168
25 to 29.9 (overweight)	25 (41.7)	5 (25)	12 (60)	8 (40)	
30 to 34.9 (level I obesity)	12 (20)	3 (15)	4 (20)	5(5)	
35 to 39.9 (level II obesity)	1 (1.7)	0 (0)	1 (5)	0 (0)	
> 40 (level III obesity)	3 (5)	2 (10)	0 (0)	1 (5)	
Systolic Blood Pressure					
< 120 mmHg (normal)	39 (65)	16 (80)	15 (75)	8(40)	0.0024
130 to140 mmHg (borderline)	16 (26.7)	3(15)	4(20)	9(45)	
> 140mmHg (abnormal)	5 (8.3)	1(5)	1(5)	3(15)	
Systolic Blood Pressure					
< 80mmHg (normal)	21 (35)	9 (45)	8(40)	4(20)	0.1848
80 to 90mmHg (borderline)	36 (60)	11 (55)	10 (50)	15 (75)	
> 90mmHg mmHg (abnormal)	3 (5)	0 (0)	2(10)	1(5)	

In our study, many women have previous diseases associated with risk factors, such as overweight/obesity (68.3%), physical inactivity (65%), and hypercholesterolemia (38.3%), present in all age groups, especially above 40-year old. In addition, approximately half said they had a history of coronary heart disease in the family (Table 4).

Table 4. Risk factors for developing coronary heart disease in women. Londrina, Paraná, Brazil, 2014.

Characteristics	**Total** *n=60* *n (%)*	**Age Group** **18-39** *n=20* *n (%)*	 **40-59** *n=20* *n (%)*	 **≥60** *n=20* *n (%)*	**p**
Hypercholesterolemia	23 (38.3)	6 (30)	8 (40)	9 (45)	0.6232
Hyperglycemia	3 (5)	1 (5)	0 (0)	2 (10)	0.3613
Hypertension	8 (13.3)	1 (5)	3 (15)	4 (20)	0.3769
Smoking	12 (20)	2 (10)	5 (25)	5 (25)	0.4046
Alcoholism	5 (8.3)	2 (10)	3 (15)	0 (0)	0.2255
Sedentary lifestyle	39 (65)	12 (60)	13 (65)	14 (70)	0.8109
Overweight/Obesity	41 (68.3)	10 (50)	17 (85)	14 (70)	0.0581
Coronary heart disease history	26 (43.3)	7 (35)	9 (45)	10 (50)	0.6344

Discussion

Socioeconomic characteristics. Several demographic, social, political, and economic transformations have modified the Brazilian society in the recent decades, causing serious impacts on the lifestyle and health of the population and creating new demands on the public health system. In addition, the role of women in society has also changed over the years, however, there is still much to be discussed, because with the women in the labor market, with increasingly accelerated routine and stress of everyday life, one realizes the carelessness with food and physical activity related issues, in addition to the increased use of substances, such as alcohol and tobacco.[1,7] In this study, it was found that with increasing age of women, the level of education decreases and even in youth, education falls short of the desired. Education is seen as essential for promoting citizenship, with visible impact on the population's general life conditions, becoming more and more essential for social inclusion. With the need for qualification for work occupations, there has to be greater access to quality education, therefore, more egalitarian and with opportunity to rise to the most valued positions.[8] As for the employability in the last ten years in Brazil, there has been an increase of formal work for men and women over 16-year old. With regard to women, in 2011, 54.8% had a formal job. The informality is a characteristic of the elderly population with 60 years or more (71.7%) and young people from 16 to 24 years (46.5%).[8] These rates are still unsatisfactory to be considered ideal for families to enjoy favorable conditions to maintain and increase the standard of living, essential for the family's welfare.

Analyzing the national per capita household income, there is a value of US$ 232.43. Among the units of the Federation, the State of Paraná is in the sixth place, with a per capita household income of US$ 263.81 and 41.66% of women live with one to three minimum salaries, which hampers access to education, good nutrition, since that they often do not reside in their self-owned house and have expenses for transport to work.[8] A study conducted in the metropolitan region of Londrina, Cambé, Paraná, Brazil, examined the association between indicators of social capital and behavior related to health and stressed out that the economic status affects health outcomes, having the social capital score inverse relationship with the number of health risk behaviors, reinforcing the importance of social capital in health promotion policies. In other words, less social capital indexes were associated with insufficient physical activity rate, irregular fruit, and vegetable consumption and increased smoking, while the highest social capital showed low average for risky behavior.[7] In our study, we included the level of education, occupation, and income for an association with the results related to the health of this population and we saw that the level of education and income are not favorable and may be one of the factors for results with risky behavior.

Health indicators and daily habits. According to some authors, health indicators, especially the cause of morbidity, serve to draw the epidemiological profile of a particular region and the analysis of this indicator translates into an important tool in health research and can contribute to the understanding of the involved processes, as well as planning public health actions. In this sense, other studies suggest that behaviors and lifestyles are important social determinants for chronic conditions.[2,7,10] Among the indicators, smoking and alcohol consumption had little prominence in all age groups. A study conducted in the city of Fortaleza, Ceará. Brazil, 2691 people registered in the health system for hypertension or diabetes, 73.6% were women and 79.7% were non-smokers,[11] similar to our findings that were 80% of non-smokers. Other studies also showed low rates for tobacco consumption, being the largest tobacco and alcohol consumption seen mainly in men as age decreases and usually associated.[3,7,12]

As for physical inactivity, our results show that 65% of the interviewees said they did not have the habit to practice physical activity. Similar data have been observed in another study in Cambé, Paraná, Brazil, that among the examined risk factors, the prevalence was higher in relation to physical inactivity and obesity.[13] Other researches in the same municipality showed that physical inactivity was more prevalent (71.3%) followed by low or moderate consumption of fruits and vegetables (63.1%), smoking (19.7%) and abusive consumption of alcohol (18.2%),[7,14] being that women showed negative behavior (52.3%), being prevalent in lower economic classes, with lower educational level and age between 40 and 49 years,[15] similar to our findings. Research conducted in the northeastern of Brazil, show that 56.9 percent of women did not practice physical activity, and 32% practiced up to twice a week,[16] being the results similar to our study's results. Another study with women in Latin America shows that only 6.6% practiced physical exercises five days a week, 25% two or more days a week, from the 31.6% who practiced physical activity.[16]

Unhealthy lifestyles, such as inadequate food and lack of physical activity are the main factors that contribute to mortality from cardiovascular disease, stroke, respiratory disease and diabetes. In addition to contributing as the main causes for death by cancer in middle and low-income individuals: being tobacco responsible for 18% of deaths; low consumption of fruits and vegetables for 6% of deaths; and excessive consumption of alcohol for 5% of deaths.[3] Still, as for auto-recovering health and demographic variables, there is higher prevalence of negative self-perception in women, individuals with less schooling or any chronic disease.[17] In our study, many women have previous diseases associated with risk factors like cardiovascular, rheumatic, endocrine, osteoarthritis and mental diseases, found in all age groups, especially above 40-year old. In addition, approximately half said they had a history of coronary heart disease in the family, which is worrisome, because study shows that family history cardiovascular disease is associated with coronary heart disease and myocardial infarction.[11] This reinforces that these women in our study need to be cared for and that the health team need to offer health controlling measures and work for risk reduction in this population, whereas the PHC nurses together with their team are making this work. As reported in study, nurses should be attentive with the population that has greater exposure to risk factors for the metabolic syndrome, working to strengthen the educational programs that promote healthy lifestyles.[18]

Anthropometric and biological parameters. In relation to cholesterol, 38.3% of the women showed borderline and abnormal values. Now, in a study conducted in the State of Maranhão, in northern Brazil, with 218 women, there was a prevalence of altered lipid profile (hypercholesterolemia in 68.8%) and weight excess.[19] Blood sugar level showed normal in 95% of women, while borderline and abnormal blood sugar values in 5%, and 15% reported having Diabetes diagnosis, suggesting they are controlled by pharmacological treatment. Our findings are smaller than the national average which shows 8% of the population with Diabetes.[1] Different values may be due to methodological differences that in national survey this was done via phone while our study used biochemical tests for blood sugar. Our sample was small not representing the southern region of the country, which have values greater than the national average, as shown in another study done in our region with men and women over 40-year old, showed 12.1% of individuals that reported having Diabetes, which differ from our findings.[20]

In anthropometric measurements in our study, the WHR was elevated in 91.6% of women. In a study conducted in Brazil, 83.7% of the 369 individuals had inappropriate WHR values and 85.4% were women and 89.7% were sedentary,[21] a fact that agrees with our findings. A study in our region showed prevalence of abdominal obesity for 49.7% in men and women, and was higher in women (more than double that in men) and increases with age progression, mainly from 50-year old,[20] being similar to our results that there was prevalence in all ages with higher emphasis from 40 to 59 years. Other research reports that there are greater risks for cardiovascular events with increased waist circumference,[22] indicating that women from our study have risk for developing chronic diseases, because they have high values on the WHR, BMI and body fat percentage, followed by high obesity rate. Data on the systolic and diastolic pressure are worrisome, especially in borderline diastolic in 60% of all interviewees. There has been found in other studies a prevalence of 60%[23] and 65%[18] of the sample with high blood pressure, representing more than half of the individuals, being similar to our findings. Another study with the Brazilian population has shown that the south region of the country had a greater increase in blood pressure from 2006 to 2011 as compared to other states and the prevalence was higher in women.[24]

The ELSA-Brazil study researched Brazilian adults about the risk factors for developing chronic disease, found in 63.1% of the population overweight, 61.5% hypercholesterolemia, 35.8% hypertension, 20.3% glucose intolerance, 19.7% diabetes, 26.7% mental disorder, and 4.7% coronary heart disease history. In this study, when comparing women and men, there was highest rate for sedentary lifestyle (79.9%), obesity (24.8%), hypercholesterolemia (63.6%), low HDL (20.7%), mental disorders (33.7%), cancer (5%) and respiratory diseases (13%).[25] Some of our findings are close to ELSA-Brazil, such as sedentary lifestyle (65%) and obesity (26.6%).

Abnormal health conditions and daily habits of women characterize the risk for developing cardiovascular diseases, highlighting in this study obesity, overweight, followed by physical inactivity, previous history of cardiovascular disease, hypercholesterolemia and hypertension, but had greater emphasis on the obesity risk factor in women over 40-year old, also remaining relevant in young women. As the results of our study, there are similar data, highlighting obesity, hypertension, low HDL, unhealthy diet and sedentary lifestyle related as risk behaviors and social capital. [1,7,14,15,18-24] Despite all these data, studies have evidenced that CNTD mortality rate showed a tendency for reduction of about 20% since the 1990's, being observed larger reductions in cerebrovascular, chronic respiratory and ischemic disorders. The authors attribute this reduction to PHC's expansion, covering more than 60% of the population, improving access to healthcare and the significant reduction for prevalence of smoking in Brazil, from 34.8% (1989) to 8.7% (2014).[1,3] But in our study region it is necessary to be attentive, a survey that assessed rates of hospitalization for cardiovascular disease sensitive to PHC and coverage of the FHS for residents in the State of Paraná, showed that in our region there was no significant reduction of hospitalizations, revealing little stability or falls in these rates,[26] indicating that even with greater coverage by the FHS there are still no improvements in the indicators, being needed a better performance of the nursing team and other health professionals with setting targets based on the Strategic Action Plan for Confronting the CNTD.[2] And further studies in order to identify likely factors and causes that have influenced the results, such as access and quality of service.[26]

Advantages and limitations. There are important aspects in our study that shows the reality for a small part of the urban population, which has important socio-demographic lifestyle associated to obesity and risk factors for developing coronary heart disease. The study encompassed both healthy individuals (looking for the PHC for prevention and primary healthcare routine) and also a population with diseases, showing the reality of this population from 18-year old, unlike some studies that analyzed the factors in hypertensive population only,[11] population from 40-year old,[7,14,15,20] elderly [18] and the population in general of a state and a country.[1,2,16,24] In addition to those, blood pressure and blood sugar and cholesterol values were checked at the time of the research and not just the disease being mentioned by the individual as it is in the researches done by population survey.[1,2,20,24] There are limitations in this study, and the data were broken down by ethnicity; the calculated sample has a 90% confidence level and 10% error in the calculation; the addressed population is from a region that has lower socioeconomic level; although we consider the population looking for a BHU as a healthy part (prevention) and part ill (in treatment), in Brazil we still have the culture in most for the individuals to seek healthcare when there is a complaint, then it may be that our data represent a population that is more sick than healthy.

Conclusion. Analyzing these results, there is prevalence of obesity, overweight, physical inactivity, followed by a previous history of cardiovascular disease, hypercholesterolemia and hypertension, especially in women over 40-year old, remaining relevant in young women. Thereby, it is necessary to implement stimulus measures in order to change positively the modifiable risk factors and improve health conditions among women in order to reduce the risk for cardiovascular disease. There is a need for prepared health professionals, as the nursing team acts directly in the PHC services in order to care, guide, and decide on the health demands, welcoming the woman and her family throughout the process, working in prevention, early stages of signs and symptoms, illness with integral care and continuity. Thereby, health promotion activities can empower women on the benefits of appropriate behaviors and lifestyles that may help reducing the risks for cardiovascular disease included in the Strategic Action Plan for Confronting the CNTD, such as working with healthy eating strategies avoiding obesogenic products, reducing salt consumption and encouraging physical activity groups.

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Functional disability and morbidities among the elderly people, according to socio-demographic conditions and indicative of depression

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Disability and morbidity among the elderly, according to sociodemographic conditions and indicative of depression

Objectives. To investigate the association of functional incapacity and the number of morbidities with sociodemographic, economic and health variables. **Methods.** This is a household survey, quantitative and transversal approach, conducted with 1,693 elderly in Uberaba-MG in 2012. We used the Mini-Mental State Examination, Katz Scale, Lawton and Brody Scale; Geriatric Depression Scale abbreviated and semi-structured instrument for evaluation of demographic data, economic and morbidities. **Results.** Functional incapacity in basic activities of daily living was associated with older age, a greater number of morbidities and presence of indicative of depression. Regarding the instrumental activities of daily living, functional incapacity was related to age, lower education and income, the greater number of morbidities and have indicative of depression. The largest number of comorbidities was associated with female sex, older age, lower income and indicative of depression. **Conclusion.** This study highlights the need for health actions directed to the oldest old, with less education and income, and indicative of depression to minimize the dependency on the performance of functional capacity and impact on morbidities.

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Descriptors: aged; activities of daily living; chronic disease; health care.

Discapacidad y morbilidad entre los ancianos, de acuerdo con las condiciones sociodemográficas e indicativo de la depresión

Objetivos. Investigar la asociación de la incapacidad funcional y el número de morbilidades con variables sociodemográficas, económicas y de salud entre los ancianos. **Métodos.** Se trata de una encuesta de hogares, de enfoque cuantitativo y transversal, realizado con 1 693 personas mayores en Uberaba-MG en 2012. Se utilizaron los instrumentos: Mini Examen del Estado Mental, Escala de Katz, Escala de Lawton y Brody y la Escala de Depresión Geriátrica Abreviada. También, se recolectó información sobre datos demográficos, económicos y de morbilidad. **Resultados.** La incapacidad funcional en actividades básicas de la vida diaria se asoció con la edad, el número de comorbilidades y la presencia de depresión. En cuanto a las actividades instrumentales de la vida diaria, la incapacidad funcional se relaciona con la edad, la educación y los ingresos más bajos, además del mayor número de comorbilidades y de probable depresión. El mayor número de comorbilidades se asoció con el sexo femenino, la edad avanzada, menores ingresos y probable depresión. **Conclusión.** Este estudio pone de relieve la necesidad de que las acciones de salud dirigidas a los más ancianos, con menos educación e ingresos, e indicativa de la depresión, con el fin de reducir al mínimo la dependencia de las prestaciones de la capacidad funcional y el impacto en la morbilidad.

Descriptores: anciano; actividades cotidianas; enfermidad crónica; atención a la salud.

Incapacidade e morbidades entre idosos, segundo condições sócio-demográficas e indicativo de depressão

Objetivo. Verificar a associação da incapacidade funcional e do número de morbidades com variáveis sócio-demográficas, econômicas e de saúde. **Métodos**. Trata-se de inquérito domiciliar, de abordagem quantitativa e transversal, realizado com 1 693 idosos em Uberaba-MG no ano de 2012. Utilizou-se o Mini Exame de Estado Mental, Escala de Katz, Escala de Lawton e Brody, Escala de Depressão Geriátrica Abreviada e instrumento semiestruturado para avaliação dos dados sócio-demográficos, econômicos e morbidades. **Resultados**. A incapacidade funcional para atividades básicas da vida diária esteve associada à maior faixa etária, maior número de morbidades e presença de indicativo de depressão. Em relação às atividades instrumentais de vida diária, a incapacidade funcional relacionou-se à maior idade, menor escolaridade e renda, maior número de morbidades e ter indicativo de depressão. O maior número de morbidades esteve associado ao sexo feminino, maior idade, menor renda e indicativo de depressão. **Conclusão**. Este estudo evidencia a necessidade de ações em saúde direcionadas aos idosos mais velhos, com menor escolaridade e renda e indicativo de depressão, visando minimizar a dependência para o desempenho da capacidade funcional e impacto sobre as morbidades.

Descritores: idoso; atividades cotidianas; doença crônica; atenção à saúde.

Introduction

The evaluation of the functional capacity of the elderly allows the multi-professional team to have a more accurate view of the impact and severity of the diseases in the physical, emotional and social aspects.[1] Thus, studies on this subject can subsidize the planning of public health policies for the elderly according to their health priorities.[2] The prevalence of functional disability for basic activities (BADLs) and instrumental (IADLs) of daily life varies in national studies[3-5] and international studies.[6,7] As for its determinant factors, research have controversies.[8-10] In a study in Bahia, functional disability in IADLs was related to income, marital status, occupation during free time, age, health problems and sequels. In the BADLs there was only the presence of health problems.[8] In another national study from Minas Gerais, dependence on IADL and BADL was associated with ≥ 75 years old, the absence of a partner, a stroke, a heart disease and diabetes mellitus.[5] The indication of depression has been considered a risk factor for functional incapacity in the national literature.[9] In international research with elderly individuals 65 years old or older, female and older individuals were associated with functional disability for BADLs, leading to dependency. However, there was no such association for IADLs.[10] In Japan, the elderly living with their children alone had a significantly greater risk of functional disability than the three-generation family group.[7]

It should also be pointed out that the elderly may present an unsuccessful aging, with associated comorbidities and dependence on activities of daily living (ADLs).[9] Also, the literature has described that some socioeconomic conditions such as female, older and lower income are related to the greater number of morbidities.[11,12] Brazilian research has shown that the low socioeconomic and cultural level are related to the development of chronic diseases.[13] In an international study the female, with advanced age, worse self-perception of health and inability to access to medical care.[14] However, studies in Brazil have been carried out in Family Health Strategies[9,13] or with elderly people aged 65 and over,[11] and there is a need for further research among those aged 60 and over in the community.

The evaluation of the functional incapacity by the nurse together with the identification of the factors associated with the non-performance of the ADLs is important to promote early interventions, favoring the maintenance of autonomy and independence of the elderly. It is a tool for planning and implementing nursing care. It is understood that nursing assessments and consultations, as well as home visits, should include questions related to the changes in functionality.[1] Thus, this study aimed to verify the association between functional disability with gender, age, education, income, number of morbidities and the indicative of depression of the elderly living in the urban area to broaden the discussions on this topic, to identify the factors related to the presence of functional disability and greater number of morbidities, and to verify the association between the number of morbidities with the gender, the education, the age group, the income and the indicative of depression.

Methods

This study integrates a longitudinal study, developed by the Group of Research in Collective Health of the Federal University of the Triângulo Mineiro (UFTM) with a domiciliary survey type, and of quantitative, analytical, cross-sectional and observational approach. The sample was performed in a previous study, according to the totality of the elderly in the municipality, by the Research Center in Collective Health, considering 95% confidence, 80% of test power, margin of error of 4% for interval estimates and a proportion estimated from 0.5 to the proportions of interest, resulting in 2 892 elderly. A list was obtained to compose the sample, together with the Zoonoses Control Center of the municipality, containing the full name and address of the elderly. The choice of this place is because it maintains the updated register of all the households in Uberaba-MG. For the selection of the elderly, the stratified proportional sampling technique was used. The neighborhoods of the municipality were considered as strata. Thus, in 2012, the sample consisted of 2 118 eligible elders considering the losses in previous years. Inclusion criteria were: people aged 60 years old or older, living in the urban area of the city of Uberaba and without cognitive decline. Starting from the sample and observing the established criteria, 1,693 elderly people were interviewed, 265 died, and 160 presented a cognitive decline. Data collection was performed at the elderly household from July 2012 to March 2013 and reviewed by field supervisors.

The cognitive decline was evaluated by the Mini Mental State Examination (MMSE), translated and validated in Brazil.[15,16] The socio-demographic data and morbidities self-reported by the elderly were collected in an instrument built Health Research Group. Functional capacity was performed by Index of Katz, adapted to the Brazilian reality[17] and by the Lawton and Brody Scale, adapted in Brazil.[18] The index of depression was measured by the Geriatric Abridged Depression Scale, validated in Brazil, with a cutoff of six or more.[19] The following variables were selected: socio-demographic: gender (Male and female), age group in years (60-69, 70-79, 80 years old and over), marital status (married or living with a partner, separated/divorced; widowed and single), education in years of study (illiterate, 1-3, 4-7, 8, 9-10 and 11 or more), per capita income, in minimum wages (without income; <1; 1; >1-3; >3-5; >5); self-reported morbidities: rheumatism, arthritis/arthrosis, osteoporosis, asthma/bronchitis, tuberculosis, embolism, high blood pressure, poor circulation, heart problems, diabetes, obesity, stroke, Parkinson's disease, urinary incontinence, fecal incontinence, constipation, sleeping problems, cataracts, glaucoma, spinal problems, kidney problem, accident/trauma sequel, malignant tumors, benign tumors, vision problems; Number of morbidities: 0, 1-6, 7 or more; Functional capacity in BADLs: bathing, dressing, toilet, transfer, sphincter control, feeding; Number of functional disability for BADLs: (0, 1-3, 4 or more); Functional capacity in the IADLs: using the telephone, shopping, going to distant places, eating, housework, doing household chores, washing and ironing, taking medicines properly and taking care of finances; Classification of functional disability in IADLs: total dependence (0 to 7 points), partial dependence (8 to 20 points) and independent (21 points); Indicative of depression: yes or no.

The data collected were processed in a microcomputer, by two people, in double entry, in Excel® program. Subsequently, it was transported to the software "Statistical Package for Social Sciences" (SPSS) version 17.0, for data analysis. A descriptive statistical analysis was performed, and the chi-square test ($p < 0.05$) was used to compare the variables. The project was approved by the Committee on Ethics in Research with Human Beings of UFTM, opinion nº 2265. Only after the consent of the interviewee and signing the Free and Informed Consent Term, the interview was conducted.

Results

There was a female elderly prevalence, aged 70-79 years old, married, living with their children, with 4-7 years of education and income of a minimum wage. Table 1 shows the socioeconomic and demographic variables of the elderly.

Most of the elderly were independent for BADLs (96.2%). Among those with functional disability, 3.2% had 1-3 disabilities, and 0.6% had four and more, with those related to urinary and fecal control (2.7%) followed by bathing (1.4%) and dressing (1.4%). Independence for IADLs was reported by 33.8% of the elderly, 65.6% of whom needed partial help and 0.6% were dependent. The main disabilities were related to travel (25.5%) and housework (19%).

In the three groups, those with 70-79 years old prevailed. However, the proportion of elderly individuals aged 80 years old and over was higher among those with 1-3 and 4 and more disabilities. A higher number of morbidities and the presence of an indication of depression were associated with a greater number of functional disabilities for BADLs among the elderly.

Table 3 shows the level of dependence in the IADL according to socioeconomic variables, the number of morbidities and indicative of depression. In the IADLs, the highest level of dependence was higher among the elderly with 80 years old and over, lower educational level, who received a minimum wage, had seven or more morbidities and had an indicative of depression.

Table 4 presents the number of morbidities according to socioeconomic variables and indicative of depression. The majority of the elderly had 1-6 morbidities (65.5%) followed by seven or more (31.1%). The elderly, female, 70-79 years old, who received a minimum wage and had an indication of depression presented more morbidities compared to the others.

Table 1. Frequency distribution of the socioeconomic and demographic variables of the 1,693 elderly people. Uberaba-MG, 2014

Variables	Values	n	%
Gender	Male	616	36.4
	Female	1077	63.6
Age group	60-69 years old	645	38.1
	70-79 years old	737	43.5
	80 or more	311	18.4
Marital status	Never married/lived with partner	89	5.3
	Married	730	43.1
	Widow	682	40.3
	Separate/divorced	191	11.3
Education	None	346	20.4
	1-3 years	437	25.8
	4-7 years	604	35.7
	8 years	104	6.1
	9-10 years	33	1.9
	11 years and more	168	9,9
Per capita income	None	115	6.8
	< 1	30	1.8
	1	809	47.8
	>1-3	573	33.8
	>3-5	104	6.1
	>5	59	3.5
Home	Live alone	306	18.1
	Only with a Professional Caregiver	7	0.4
	Only with a partner	379	22.4
	With others of their generation (with or without a partner)	122	7.2
	With their children (with or without a partner)	688	40.6
	With their grandchildren (with or without a partner)	115	6.8
	Other	76	4.5

Table 2. Number of functional disability in BADL, according to socio-demographic and economic variables, number of morbidities and indicative of depression. Uberaba-MG, 2014

Variables	Number of disabilities for BADL						χ^2	*p*
	Without (*n* =1629)		1-3 (*n* = 54)		4 or more (*n* = 10)			
	n	%	*n*	%	*n*	%		
Gender								
Male	598	36.7	16	29.6	2	20	2.29	0.317
Female	1031	63.3	38	70.4	8	80		
Age group								
60-69 years old	628	38.6	16	29.6	1	10	11.44	0.022
70-79 years old	711	43.6	20	37.0	6	60		
80 years old or more	290	17.8	18	33.3	3	30		
Education								
None	332	20.4	12	22.2	2	20	10.04	0.437
1-3 years	417	25.6	17	31.5	3	30		
4-7 years	579	35.6	20	37.0	5	50		
8 years	101	6.2	3	5.6	0	0		
9-10 years	33	2.0	0	0	0	0		
11 years or more	166	10.2	2	3.7	0	0		
Per capita income								
None	107	6.6	7	13.0	1	10	17.41	0.066
< 1	30	1.8	0	0	0	0		
1	773	47.5	28	51.9	8	80		
>1-3	554	34.1	18	33.3	1	10		
>3-5	103	6.3	1	1.9	0	0		
>5	59	3.6	0	0	0	0		
Morbidities								
None	58	3.6	0	0	0	0	33.22	<0.001
1-6	1086	66.7	20	37.0	3	30		
7 or more	485	29.8	34	63.0	7	70		
Indicative of depression								
Yes	410	25.2	30	55.6	7	70	30.02	<0.001
No	1218	74.8	24	44.4	3	30		

Table 3. Functional dependence level in the IADL according to socio-demographic and economic variables, the number of morbidities and indicative of depression. Uberaba-MG, 2014

	Level of dependence for IADL							
Variables	**Total**		**Partial**		**Independent**		X^2	*p*
	n	**%**	***n***	**%**	***n***	**%**		
Gender								
Male	0	0	404	36.5	212	36.8	5.76	0.056
Female	10	100	703	63.5	364	63.2		
Age group								
60-69 years old	2	20	356	32.2	287	49.8	94.94	<0.001
70-79 years old	3	30	490	44.3	244	42.4		
80 years old or more	5	50	261	23.6	45	7.8		
Education								
None	2	20	268	24.2	76	13.2	44.32	<0.001
1-3 years	3	30	288	26.0	146	25.3		
4-7 years	4	40	384	34.7	216	37.5		
8 years	0	0	59	5.3	45	7.8		
9-10 years	0	0	15	1.4	18	3.1		
11 years or more	1	10	92	8.3	75	13.0		
Per capita income								
None	1	10	75	6.8	39	6.8	32.15	<0.001
< 1	0	0	22	2.0	8	1.4		
1	6	60	575	52.0	228	39.7		
>1-3	2	20	341	30.8	230	40.1		
>3-5	1	10	54	4.9	49	8.5		
>5	0	0	39	3.5	20	3.5		
Morbidities								
None	0	0	25	2.3	33	5.7	63.31	<0.001
1-6	3	30	679	61.3	427	74.1		
7 or more	7	70	403	36.4	116	20.1		
Indicative of depression								
Yes	6	60	346	31.3	95	16.5	51.94	<0.001
No	4	40	761	68.7	480	83.3		

Table 4. Number of morbidities according to socio-demographic and economic variables, the number of morbidities and indicative of depression. Uberaba-MG, 2014

	Number of morbidities							
Variables	**0**		**1-6**		**7 or more**		X^2	*p*
	n	%	*n*	%	*n*	%		
Gender								
Male	40	69.0	463	41.7	113	21.5	90.85	<0.001
Female	18	31.0	646	58.3	413	78.5		
Age group								
60-69 years old	31	53.4	434	39.1	180	34.2	10.14	0.038
70-79 years old	20	34.5	470	42.4	247	47.0		
80 years old or more	7	12.1	205	18.5	99	18.8		
Education								
None	12	20.7	219	19.8	115	21.9	10.99	0. 358
1-3 years	11	19.0	288	26.0	138	26.2		
4-7 years	22	37.9	383	34.6	199	37.8		
8 years	4	6.9	77	6.9	23	4.4		
9-10 years	2	3.4	23	2.1	8	1.5		
11 years	7	12.1	118	10.6	43	8.2		
P*er capita* income								
None	7	12.1	74	6.7	34	6.5	21.25	0.019
< 1	0	0	22	2.0	8	1.5		
1	21	36.2	510	46.1	278	52.9		
>1-3	24	41.4	376	34.0	173	32.9		
>3-5	4	6.9	77	7.0	23	4.4		
>5	2	3.4	47	4.2	10	1.9		
Indicative of depression								
Yes	6	10.3	215	19.4	226	43.0	107.05	<0.001
No	52	89.7	893	80.5	300	57.0		

Discussion

Socio-demographic and economic data are consistent with those of the national and international scientific literature.[1,10,20] As for the dependence on the BADL, similar results were obtained in researches carried out in Rio Grande do Sul[1] and João Pessoa[20] since the findings related to the IADL are divergent of the survey conducted in Goiânia, with 14.9% of the elderly totally dependent and 45.7% needing partial help.[9] Dependence may require the need for support from caregivers who need adequate preparation and help. The health services must attend to the patients in their needs, being relevant to know which are the activities of greater dependence, to the elaboration of a plan of action directed to the promotion of health, of prevention and treatment of these commitments.[9] It is emphasized that it has family homes in which the elderly live with younger generations, becoming increasingly common.[21] In this context, considering that the largest percentage of elderly in this study were children, with or without a partner, it is necessary to develop multi-professional interventions with a focus on strengthening this support relationship.

The association of age, morbidities, and indicative of depression with a functional disability for BADL is similar to a national finding.[9] Another survey in Belo Horizonte observed higher disability percentages with increasing age.[4] Considering that functional incapacity among the elderly contributes to an increase in the use of acute care services, such as outpatient, emergency and hospitalization,[22] and that the presence of depressive symptoms together with the social implications.[9] it is relevant to identify early cases to elaborate actions that favor the maintenance of autonomy and independence of the elderly, even with limitations. The association between age and functional disability in IADL is also consistent with a national study.[9] In Belo Horizonte, it was also observed higher percentages of disability as age increased.[4] Regarding education, it is emphasized that the longer the study time, the greater the chances that the individual will remain autonomous despite his or her age.[2] It should be noted that low income is related to a series of unfavorable conditions, which may contribute to the loss of functional autonomy. Low-income elderly individuals are more likely to have some dependency on the performance of IADL than those in the most economically disadvantaged classes.[2] The presence of poly-morbidities was also related to functional disability for IADL among the elderly in João Pessoa-PB.[20] Aging without planning may increase the risk of disease incidence. In this way, the prevention of comorbidities becomes paramount. From this perspective, public health policies should be directed towards the elderly. It is believed that, in this way, strategies that would increase the possibility of aging with the quality of life, improvement of autonomy and functionality may be constituted.[20] The evaluation of functional capacity can contribute in this aspect by enabling nurses and other members of the health team a better view of the severity and impact of comorbidities.[1] As in this study, the indicative of depression was associated with functional disability in national and international studies.[12] Thus, the results obtained in this research reinforce the health professional´s need to track the indicative of depression and take the necessary actions, such as diagnostic confirmation and therapeutic establishment.

The association of the female with the greatest number of morbidities has also been reproduced in research carried out with the elderly in Brazil[11] and South Africa.[12] In this context, it is relevant that the nursing develops educational and preventive strategies especially focused on women. Considering their greater longevity and comorbidities, it is believed that the monitoring of their health conditions can minimize the impact on their functionality. Different from the results of this study, a survey carried out by the FIBRA Network did not observe differences between the age groups with the number of diseases,[11] and a study carried out in South Africa showed that the greatest number of morbidities prevailed in the age group of 60-70 years old.[12]

The association of low income with the greater number of morbidities was also verified in a survey conducted by the FIBRA Network.[11] It is possible that the elderly with low income have less access to health services and medicines and have difficulties in maintaining treatment until the end interfering with their quality of life.[11,20] Depression contributes to the elderly restriction to the domestic environment, which decreases their chances of enjoying the advantages of social interaction and it is associated with an increased risk of mortality, morbidity, physical and cognitive disability, inactivity and depression.[23] It is emphasized that the functional incapacity, among other factors, that compromise the social involvement of the elderly contribute to the elderly dissatisfaction with life[24] and it can justify this result. In this sense, nursing can contribute by identifying with the elderly social activities that are of interest considering their socioeconomic conditions.

Conclusion

The functional disability for the BADLs was associated with greater age, a greater number of comorbidities and the indicative of depression. The IADLs were the largest age group, lower education, lower income, presence of a greater number of diseases and indicative of depression. The elderly with the highest number of diseases were female, 70-80 years old, with a minimum wage and an indication of depression. These results reinforce that the social inequalities and health status of the elderly may be related to functional capacity and the presence of comorbidities. In this way, the importance of periodic evaluation of the functionality and aspects related to health is highlighted, considering the factors that can impact them to maintain the independence and control of the comorbidities of the elderly as long as possible. In this context, it is highlighted that the nurse can perform such evaluations in nursing consultations. Although it is not possible to identify the cause and effect relationship between the variables, since this is a cross-sectional study, the results found a point to the need for greater attention to maintaining the functionality and morbidities of this population. The identification of factors associated with the functional disability of the elderly provides important elements for prevention and intervention measures. In this sense, it is suggested that new studies be carried out with a longitudinal design to verify the possible causal relationship between the variables.

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Effect of an educational intervention based on the model of health beliefs in self-medication of Iranian mothers

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Effect of an Educational Intervention Based on the Model of Health Beliefs in Self-Medication of Iranian Mothers

Objective. This study sought to determine the effect of education based on the model of health beliefs in self-medication of women in Iran. **Methods.** Quasi-experimental study in a group of mothers (N = 90, 45 in the intervention group and 45 in the control group) users of health centers from the city of Fasa, province of Fars, southern Iran. Before and after the educational intervention (four training sessions in three months), a questionnaire was applied containing questions based on the model of health beliefs, on the components of knowledge, vulnerability, severity, benefits, and barriers perceived, and practices on self-medication. **Results**. Prior to the educational intervention, the level of knowledge, sensitivity, intensity, and benefits of self-medication were equal in both groups; however, after the educational intervention, it was observed that the intervention group improved in all components of evaluation and diminished barriers perceived and self-treatment practices. **Conclusion.** The educational intervention based on the model of health beliefs was effective in reducing self-medication practices in the group of mothers. Hence, this type of training is recommended in health centers to diminish the frequency of this practice.

Descriptors: control groups; mothers; self medication; controlled before-after studies.

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Efecto de una intervención educativa basada en el modelo de creencias de salud en la automedicación de madres iraníes

Objetivo. Determinar los efectos de la educación basada en el modelo de creencias de salud en la automedicación de las mujeres en Irán. **Métodos.** Estudio cuasi-experimental en un grupo de madres (N = 90, 45 en el grupo de intervención y 45 en el grupo de control) usuarias de centros de salud de la ciudad de Fasa, provincia de Fars, al sur de Irán. Antes y después de la intervención educativa (cuatro sesiones de capacitación en tres meses) se aplicó un cuestionario que contenía preguntas basadas en el modelo de creencias de salud, sobre los componentes de conocimiento, vulnerabilidad, severidad, beneficios y barreras percibidas, y prácticas sobre automedicación. **Resultados**. Antes de la intervención educativa, el nivel de conocimiento, sensibilidad, intensidad y los beneficios de la automedicación fueron iguales en los dos grupos; sin embargo, después de la intervención educativa se observó que el grupo de intervención mejoró en todos los componentes de evaluación y disminuyó las barreras percibidas y las prácticas de autotratamiento. **Conclusión.** La intervención educativa basada en el modelo de creencias de salud fue efectiva en la reducción de prácticas de automedicación en el grupo de control. Por lo tanto, se recomienda realizar este tipo de capacitación en los centros de salud con el fin de disminuir la frecuencia de esta práctica.

Descriptores: grupos control; madres; automedicación; estudios controlados antes y después.

Efeito de uma intervenção educativa baseada no modelo de crenças de saúde na automedicação de mães iranianas

Objetivo. Determinar o efeito da educação baseada no modelo de crenças de saúde na automedicação das mulheres no Irão. **Métodos.** Estudo quase-experimental num grupo de mães (N = 90, 45 no grupo de intervenção e 45 no grupo de controle) usuárias de centros de saúde da cidade de Fasa, província de Fars, ao sul do Irão. Antes e depois da intervenção educativa (quatro sessões de capacitação em três meses) se aplicou um questionário que tinha perguntas baseadas no modelo de crenças de saúde, sobre os componentes de conhecimento, vulnerabilidade, severidade, benefícios e barreiras percebidas, e práticas sobre automedicação. **Resultados**. Antes da intervenção educativa, o nível de conhecimento, sensibilidade, intensidade e os benefícios da automedicação foram iguais nos dos grupos; embora, depois da intervenção educativa, se observou que o grupo de intervenção melhorou em todos os componentes de avaliação e diminuiu as barreiras percebidas e as práticas de auto-tratamento. **Conclusão.** A intervenção educativa baseada no modelo de crenças de saúde foi efetiva na redução de práticas de automedicação no grupo de mães. Por tanto, se recomenda realizar este tipo de capacitação nos centros de saúde com o fim de diminuir a frequência desta prática.

Descritores: grupos control; mães; automedicação; estudos controlados antes e depois.

Introduction

Based on treating principles, drug is referred to chemical substance which is employed to prevent or diagnose various diseases and disorders of body organs.[1] Nowadays, considering the advancements obtained in various scientific fields, people are increasingly gaining access to various drugs. However, this facile access is turning into a detrimental social phenomenon, i.e. indiscriminate and inappropriate drug consumption. Indiscriminate drug consumption and totally self-medication are among the biggest social, health, and economical problems of different societies including Iran. According to the surveys, the drug prescription level does not match epidemiologic status of diseases in our country which can be caused by self-treating or self-medication in the society.[2] Paulo and Zenini[3] has defined self-medication as using a synthesized substance to treat or prevent a disease or to improve health without the prescription of and medical expert. Self-medication is not only prevalent in our country but also in other countries, leading to numerous side effects. Culture and people's conception of drug is one the most important causes of self-medication. In other words, people like to have the doctor prescribe a great deal of drugs for them. On the other hand, people have their own reasons including having paid for the visit and transportation, having wasted time, and having left or interrupted their jobs. Hence, if the doctor does not prescribe any drugs for them, they will visit another doctor or try to consume drugs on their own, paving the path for the spread of self-medication in the country.[4]

Earlier research has showed that 83.3% of Iranians are used to self-medication.[5] Common drugs in self-medication include antibiotics, pain killers, and injective vitamins. Inappropriate and arbitrary taking of antibiotics will contribute to the spread of bacterial resistance. Resistance to antibiotics would allow the infections that were thought to be treatable 15 years ago to emerge as main threats to public health again.[6] An important factor in self-medication, which has been widely emphasized in different studies, is selling drugs without the doctor's prescription.[7] This will result in the factors including increased drug consumption per capita, resistance to drugs, lack of optimum treatment, poisoning, unexpected consequences, etc.[8] Various studies have shown that women are particularly interested in self-medication, being unaware of its consequences.[9] Hence, it can be concluded that even the pregnancy event in women can easily increase the consumption of drugs and chemical substances, while self-medication is responsible for more than 3% of congenital abnormalities. Especially, when the pregnancy is unintended and the mother is not aware of it, she will most likely keep on self-medicating.[10] According to the results of some studies, self-medication during pregnancy can lead to uterine contraction.

The Strandberg's survey revealed that this can increase the chance of premature pregnancy by 2-3 times and cause abortion or fetal abnormality.[11] Also, taking some drugs during breastfeeding period can cause problems for the baby so that even arbitrary drug taking can cause problems such as fatigue and general weakness, sleepiness, the baby's breathing difficulties, etc.[2] Various studies have shown that self-medication among women is frequently aimed at treating problems such as dysmenorrhea (painful periods), eliminating menopausal symptoms, period disorders, osteoporosis prevention, and pregnancy and breastfeeding problems. For example, more than 70% of women are infected by vaginal fungal infection and 40%-5% of these infections will tend to reoccur in throughout their future life. All these factors would lay the groundwork for women's tendency towards self-medication.[12] According to the statistics, 30% of liver and kidney diseases are caused by taking drugs.[7] Considering the increasing access to various drugs and the direct role of the individual in choosing and taking the drugs, people will need to obtain the required knowledge for changing behavior if they wish to a longer, healthier, and more active life.[13] In line with achieving this goal, the studies indicate that identifying factors affecting behavior will facilitate changing the behavior. For this purpose, researchers have employed models to identify the factors affecting behavior.[14] The models aim at contributing to the identification of the factors affecting the behavior and determining the way these factors function. These models also provide us with suggestions on how to affect these elements in various conditions. The Health Belief Model is an essential and exact pattern that is used to determine the relationship between health beliefs and behavior, and is also the most important model that is used in the development and design of prevention programs. According to this model, a person's decision and motivation to cultivate a particular behavior included items such as, Person's perception of being at risk (perceived susceptibility) and its seriousness (perceived severity), belief in the perceived action of usefulness to reduce the risk of illness, and understanding of the health benefits (perceived benefits) due to obstacles and moderating factors such as demographic and psychosocial variables (awareness). Cues to action also facilitate healthy behaviors.[15] This model generally focuses on changing one's convictions and believes that changes in behavior can lead to changes in beliefs.[16] Based on this model, people have to believe that they are prone to being hit by a phenomenon such as self-treating (understood sensitivity). Subsequently, they are expected to understand a benefit in terms of their behavioral change (not to self-medicate) and be able to overcome inhibitive factors including cost (perceived barriers). Considering the fact that self-medication is common among women and most of health centers do not offer enough education in this field or just rely on traditional education methods, being evidenced by an increase in self-medication per capita among women even during pregnancy, the present study has been carried out based on determining the effect of health belief model on the self-medication status of women in Fasa city.

Methods

The present study is a quasi-experimental study carried out among the women visiting health centers in the city of Fasa, Fars province, South of Iran. Among the six health centers in Fasa, two centers were randomly selected (one as the experimental group and the other as the control group). The sampling method in each health center was also random and performed based on the number of the household with health files in a center. In fact, they were gathered on a certain day in the health center and asked for their informed consent to participate in the survey. In the present study, the studied population includes all women without special who visited the health centers specified for sampling in the city of Fasa. The inclusion criteria included the women visiting the specified health centers for sampling in the city of Fasa who were not infected by any special diseases, while the exclusion criteria consisted of the unwillingness of women to keep on participating at the survey, absence for more than 1 to 3 sessions, and the incidence of special diseases for the sample during the survey. In this study, self-medication consists of arbitrary taking of any types of drugs (including herbal or chemical) without the doctor's prescription and diagnosis. Figure 1 presents the study flow diagram.

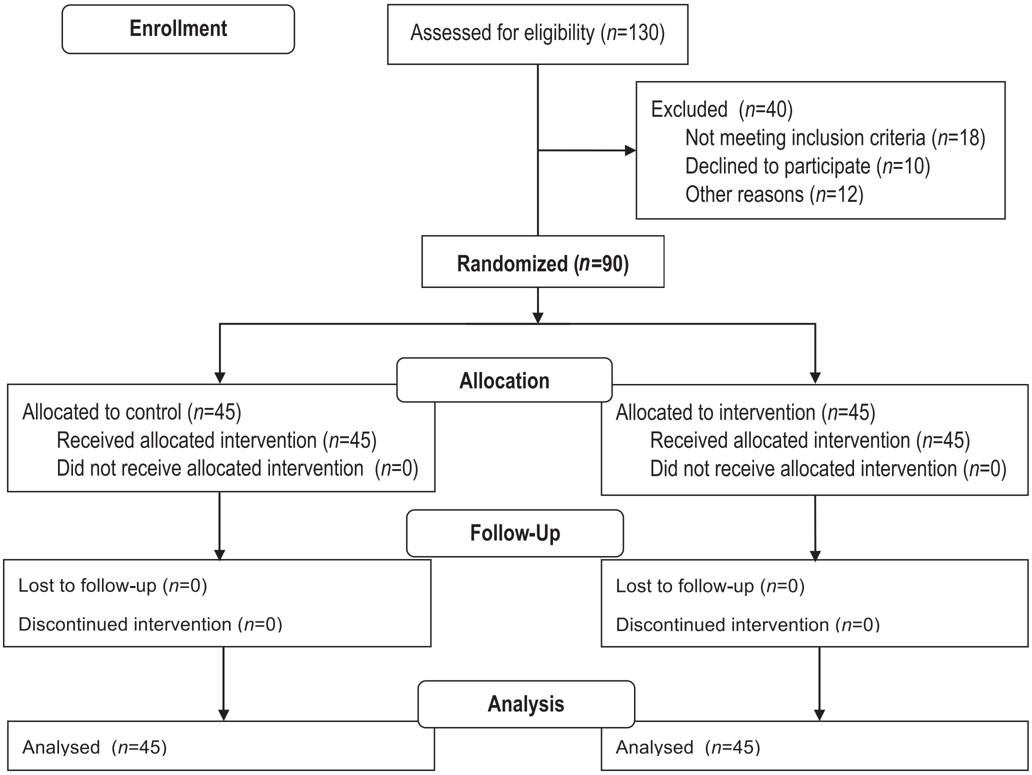

Figure 1. Flow chart of study

The data collection instruments consist of questionnaires including six parts. Part 1 includes 9 demographic questions. Part 2 consists of knowledge questions including 10 4-choice questions (a correct answer in the knowledge section is scored 1, while the incorrect answer is scored zero). Part 3 includes 20 questions about sensitivity, severity, and the perceived benefits and barriers in terms of self-medication which have been designed as the 5-choice Likert scale. Part 4 evaluates different types of internal and external practice cues to action for self-medication by asking 2 questions. Part 5 is a checklist assessing the person's performance in terms of self-medication during the past 3 months. And Part 6 investigates the causes of self-medication in people. At the end, each person's score is calculated out of 100 through dividing the number of correct answers by the total number of all questions (10 questions) and multiplying the result by 100. In the section of sensitivity, severity, benefits, and the perceived barriers, the sensitivity amplitude of each question varies between 0 and 4 where the "I completely disagree" answer is scored zero, "I disagree = 1", "I have no comments = 2, I agree = 3, and "I completely agree = 4. In general, the total score of each of these parts (sensitivity, severity, benefits, and perceived barriers) varies between 0 and 20. The obtained score of each one divided by 20 and multiplied by 100 will give the final score. In the performance checklist part, depending on the diseases for which the individual has self-treated, the participants score will be calculated out of 100. For this purpose, the number of diseases for which the individual has self-treated is divided by the total number of the mentioned diseases and the result is multiplied by 100 to give her score in the performance part. If she has self-treated in diseases other than those listed in the questionnaire, this part has been assessed through an open question (mention other necessary items).

The questions of internal and external practice guides as well as different types of self-medication have been calculated as self-medication. Questionnaire was designed by following preceding study.[17] The reliability of the mentioned questionnaire was evaluated by the Cronbach's alpha method on 25 women who are demographically similar to the studied population, being obtained to be over 0.81 for knowledge, sensitivity, intensity, benefits, and practice. This value was calculated to be 0.84, 0.88, and 0.81 for sensitivity, intensity, and perceived benefits and obstacles. In the present study, the case and control groups will be selected to compare the effect of education using the health belief model (the experimental group) with traditional education methods in other centers (control).

Before the performance of educational intervention in both experimental and control groups, data was collected using the mentioned questionnaire then educational intervention for the experimental group was performed for 3 months. The experimental group was trained for four sessions in this 3-month period and each session lasted 60 minutes. The methods employed for education include giving speeches and holding group discussions. Educational matters and contents were prepared based on educational goals, the necessary must-learns about self-medication, and considering the needs assessment carried out ahead of the intervention and regarding the valid books and educational leaflets of the health ministry and Razi pharmaceutical journal as well as by consulting pharmacists.

The first session included getting familiar with the history of self-treating and increasing people's knowledge in terms of self-medication. The second, third, and fourth sessions were also based on the health belief model including training for enhancing sensitivity, severity, and perceived benefits and barriers as well as the internal and external practice guide in terms of self-medication. It is worth to note that at the end of each session the pamphlet of the presented subjects are given to the participants Also, the subjects of the last sessions are briefly reviewed before the start of each session. 2 perusing sessions have been held for 1 to 2 months after intervention in order to review the presented participants and people received a short message about the consequences of self-medication how to preventing it. Finally, the data were collected from both experimental and control groups. Before starting the survey, the informed consent of participating in the study based on the resolutions of the ethics committee of the research council of the medical science University of Fasa was taken from the samples. In the present study, in addition to employing the chi-square tests to compare the mean score of knowledge, sensitivity, severity, and the perceived benefits and barriers before and after invention, the T-pair test was performed in each group, while the T-test was carried out between groups.

Results

The age average of the experimental and control groups were 42.16±2.81 (M±SD) and 40.86±3.16 years, respectively. In both groups, most women were married and employed. In this study, 75.55% and 71.11% of women were under the coverage of the health insurance system. Also, most women had high school level education and no meaningful difference was observed between the groups in terms of these variables (Table 1).

Table 1. Relative frequency distribution of the studied people in terms of marital status, occupation, education, and the health service coverage

Variable	Case group Frequency (%)	Control group Frequency (%)	*p*
Occupation			
Household	31 (68.88)	29 (64.44)	0.421
Employed	14 (31.12)	16 (35.56)	
Covered by the insurance service			
Yes	34 (75.55)	32 (71.11)	0.372
No	11 (24.45)	13 (28.89)	
Marital status			
Married	41 (91.11)	40 (88.88)	0.892
Single	4 (8.89)	5 (11.12)	
Education status			
Illiterate	2 (4.44)	1 (2.22)	0.132
Elementary school	6 (13.33)	4 (8.88)	
Secondary school	7 (15.55)	5 (11.11)	
Diploma	25 (55.55)	27 (60)	
University education	5 (11.13)	8 (17.79)	

The score average of knowledge, perceived sensitivity, perceived severity, perceived benefits, perceived barriers, and perceived practice in self-medication in the both experimental and control group has been demonstrated in Table 2. The findings revealed that there is no noticeable difference between the groups before intervention in terms of the mentioned variables (p=0.461, p=0.135, p=0.235, p=0.215, p=0.411, and p=0.512), however, a meaningful difference (p=0.001) was observed between the two groups in all variables after educational intervention. Moreover, the results indicate that there is a meaningful difference between the score average of variables in the case group before and after educational intervention (p=0.001), while no meaningful difference was observed in the control group before and after intervention. All components of the health belief model were in relationship with women's practice in terms of self-medication so that a reverse relationship was detected between the perceived sensitivity and practice (p=0.002 r=-0.47), the perceived severity and practice (p=0.003, r=-0.52), and between the perceived benefits and practice (p=0.022, r=-0.63) in terms of self-medicating. On the other hand, a direct and meaningful relationship was found between the perceived barriers about appropriate drug taking and self-medication (p=0.001, r=+0.84). The most perceived barrier in terms of appropriate drug taking among women includes their inadequate knowledge of proper drug taking. Also, the relative frequency distribution of the internal and external practice guides in both case and control group before and after educational intervention is presented by Tables and Table 4. No meaningful difference was observed between the two groups in terms of internal and external guides before the educational intervention, whereas a meaningful difference was found between the two groups in all internal and external practice guides 3 months after educational intervention (p=0.001).

Table 2. A comparison between the average knowledge scores, sensitivity, severity, perceived benefits and barriers, and practice in terms of self-medication before and 3 months after educational intervention between the experimental and control groups

Variable	Group	Before intervention	After intervention
Knowledge	Experimental	37.34 ±20.12	76.24 ±15.13
	Control	38.14 ±21.17	39.42 ±21.07
Perceived sensitivity	Experimental	44.62 ±15.11	78.35 ±7.13
	Control	47.11 ±14.32	49.01 ±13.41
Perceived severity	Experimental	46.42 ±16.31	77.12 ±14.14
	Control	46.94 ±15.94	47.31 ±17.82
Perceived benefits	Experimental	60.64 ±16.22	89.12 ±10.06
	Control	61.23 ±14.18	62.32 ±15.13
Perceived barriers	Experimental	73.12 ±16.34	32.30 ±14.01
	Control	70.54 ±18.64	69.24 ±17.33
Self-medication action	Experimental	58.36 ±21.34	29.55 ±18.14
	Control	55.28 ±20.19	52.44 ±23.10

Table 3. The frequency distribution of the internal practice guide in terms of self-medication upon the views of the studied population before and 3 months after educational intervention in the experimental and control groups

Variable	Before intervention		After intervention	
	Experimental Group Frequency (%)	Control Group Frequency (%)	Experimental Group Frequency (%)	Control Group Frequency (%)
Worried about the consequences of self-medication	31 (68.88)	36 (80)	43 (95.55)	38 (84.44)
Not believing in self-medication	18 (40)	20 (44.44)	29 (64.44)	21 (46.66)
Good general health	30 (66.66)	27 (60)	36 (80)	24 (53.33)
Feeling more healthy in case they avoid self-medication	38 (84.44)	37 (82.22)	42 (93.33)	25 (55.55)

Table 4. the frequency distribution of the external practice guide in terms of self-medication

Variable	Before intervention		After intervention	
	Experimental Group Frequency (%)	Control Group Frequency (%)	Experimental Group Frequency (%)	Control Group Frequency (%)
Radio and TV	35 (77.77)	33 (73.33)	38 (84.44)	34 (75.55)
booklet	27 (60)	29 (64.44)	43 (95.55)	31 (68.88)
Physician	32 (71.11)	30 (66.66)	44 (97.77)	29 (64.44)
Family and friends	25 (55.55)	28 (62.22)	36 (80)	30 (66.66)
Other women visiting health centers	12 (26.66)	9 (20)	14 (31.11)	7 (15.55)
Journals and magazines	10 (22.22)	9 (20)	16 (35.55)	11 (24.44)

Discussion

Self-medication is one of the health problems requiring theory-based studies. The present study is aimed at determining the effect of educational intervention based on the health belief model on improving the actions preventing self-medication among 90 women visiting health centers in Fasa. In this study, the samples had achieved less than half of knowledge score before intervention. This level of knowledge can be attributed to notification by radio, television, newspaper, magazines, and books. Shamsi *et al*.[17] carried out educational intervention between the two groups and found that there was a meaningful difference between all mentioned variables. The study also indicated a decrease in the mothers' negative practice. These findings can effectively indicate the effect of educational intervention according to the health belief model as well as employing the advancing method of observational film viewing and offering free medical services on enhancing knowledge, perceptions, and the actions preventing self-medication.

A meaningful difference has been observed between the performance of the experimental and control groups in many of the other studies carried out based on the health belief model including: The survey of Shojaeizadeh *et al.*[18] on cervical cancer, the study carried out by Wen *et al.*[19] in terms of the effect of education according to the health belief model on bed rest for patients with deep venous thrombosis in China. The meaningful increase in the mean score of benefits, perceived barriers, self-efficacy and performance in the test group after intervention in terms of osteoporosis has been reported by Huang *et al*.[20] for Taiwanese women. According to M. Zaki *et al*.[21] study, most women had a positive attitude toward medications in general but they believed pregnant women should be more cautious regarding drug-use during pregnancy. The meaningful difference between the average knowledge scores of the case and control groups can be attributed to presenting training courses on avoiding self-medication which have remarkably enhanced the case group's knowledge (35 scores) about the appropriate way of drug taking. The findings of this study revealed that the mean score of the women's perceived sensitivity before educational intervention in both experimental and control groups was in the same moderate conditions, being in accordance with other study.[17] As reported by Sereshti *et al.,*[22] 91% of the studied units had a positive attitude towards herbal drugs. In the latter study, the existence of a meaningful difference after educational intervention between the experimental and control groups can be a good evidence of the effect of educational intervention on increasing the perceived sensitivity in the case group. After educational intervention, most women of the case group believed that they may be subjected to self-medication. This result is in accordance with the application of the health belief model and the perceived sensitivity for self-medication in Male High School Students.[23]

In terms of the perceived severity, both groups were in mediocre level of educational intervention. However, increase of the perceived severity mean score in the case group after educational intervention indicates the existence of a meaningful difference in the perceived severity between the experimental and control groups. In the present study, using the images of those who had been affected by self-medication consequences to demonstrate the seriousness of these consequences and to draw the samples' attention to loss of health, the occurrence of other diseases, and high treatment costs are significant factors which increase the level of perceived severity of the samples. In terms of the benefits of lack of self-treatment, the findings of the present study showed that the perception status of people about the appropriate benefits of taking the drugs in both case and control groups before educational intervention is a bit higher than the average level. This value was remarkably increased after educational intervention in the case group (29 scores), the increase being 15 times greater in the experimental group than the control group. It seems as if the people's attention to the fact that appropriate taking of drugs would mitigate the consequences and facilitate the improvement process can be effective in increasing the level of the perceived benefits. In the present study, the existence of a meaningful difference in the perceived barriers between the two groups after educational intervention is ascribed to the effect of educational intervention on eliminating the perceived barriers in terms of appropriate drug taking in the case group. In this study, most of the barriers perceived by women for proper drug consumption includes their inadequate knowledge of the appropriate way of taking drugs and the soundness of taking drugs, especially the herbal drugs. Karimy *et al*.[24] have also suggested that the most important barrier against the proper way of drug taking is lack of time to see a doctor. In the present study and in terms of self-medication practice, both groups were above the average level before the educational intervention, while 31% of Tabriz citizens.[25] In the present study, the mean score of performance in the experimental group meaningfully decreased after the educational intervention which can be attributed to the positive role of education based on the health belief model being in accordance with the Shamsi result.[17] In the present study, the presence of an internal cues to action to encourage the individuals to proper use of drugs and also to enhance the participation of family members as the most important external guide in decreasing self-treatment is of great importance. In the study carried out by Neafsey *et al*.[26] that about half of the participants (46%) achieved their information about drugs from the doctors and 41% form reading the label. Also, a limited portion of people (4%) used TV and 3% obtained their required information about the proper use of drugs from journals and friends.

Conclusion

The present study reveals that the educational planning should be focused on making women aware against perceived sensitivity and barriers. In this case, doctors, women, the health personnel, and media the most important information sources for women. Self-reporting of the behavior and performing the study by interview collection method is recommended in this study. Also, the lack of facilities and teaching aids as well as obtaining cooperation for performing the study were among the difficulties of the job. Finally, the study revealed that training through the health belief pattern plays an effective role in enhancing the sensitivity, severity, barriers, benefits, and self-efficacy of the studied women, causing them to take measures to prevent self-medication. Planning promotional interventions based on the health belief model along with the application of the media in order to promote actions preventing self-medication in women is recommended.

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Development of a measurement index of critical thinking in professional formation

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Development of a measurement index of critical thinking in professional formation

Objective. This research sought to construct and validate a measurement index of critical thinking (CT) in professional formation. **Methods**. Transversal, quantitative, test validation-type study. After reviewing scientific production in CT, which permitted defining the concept and its conceptual domains, a 65-item scale was constructed of closed questions on the analysis of cases evaluating CT. The scale was subjected to expert evaluation to then be applied to 53 undergraduate students (35 from nursing and 18 from sociology) to evaluate validity and reliability. **Results.** The 65-item scale has an explained variance of 61.3% and is comprised of five CT domains: inference, evaluation, argumentation, analysis, and interpretation. A Cronbach's alpha coefficient of 0.61 was obtained. **Conclusion**. The scale proposed to assess students' CT skills converges with concepts by known authors with the CT theory and is adequate for use as a CT measurement index in professional formation.

Descriptors: thinking; educational evaluation; education, higher; scales.

Desarrollo de un índice de medición del pensamiento crítico en la formación profesional

Objetivo. Construir y validar un índice de medición del pensamiento crítico (PC) en la formación profesional. **Métodos.** Estudio cuantitativo transversal del tipo de validación de pruebas. Luego de revisar la producción científica en PC, la definición del concepto y sus dominios conceptuales, se construyó una escala de 65 ítems de preguntas cerradas sobre análisis de casos que evalúan PC. La escala fue sometida a valoración de expertos para luego ser aplicada a 53 estudiantes de pregrado (35 de enfermería y 18 de sociología) con el fin de evaluar la validez y la confiabilidad. **Resultados.**

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La escala de 65 ítems tiene una varianza explicada del 61.3% y está compuesta por cinco dominios de PC: inferencia, evaluación, argumentación, análisis e interpretación. Se obtuvo un coeficiente alfa de Cronbach de 0.61. **Conclusión**. La escala propuesta para evaluar las habilidades del PC del estudiante converge con conceptos de autores reconocidos con la teoría de PC y es adecuada para ser utilizada como índice de medición de PC en la formación profesional.

Descriptores: pensamiento; evaluación educacional; educación superior; escalas

Desenvolvimento de um índice de medição do pensamento crítico na formação profissional

Objetivo. Construir e validação um índice de medição do pensamento crítico (PC) na formação profissional. **Métodos.** Estudo quantitativo transversal do tipo de validação de provas. Logo de revisar a produção científica em PC, o que permitiu a definição do conceito e seus domínios conceituais, se construiu uma escala de 65 itens de perguntas fechadas sobre análise de casos que avaliam PC. A escala foi submetida a valoração de peritos para logo ser aplicada a 53 estudantes de pré-graduação (35 de enfermagem e 18 de sociologia) com o fim de avaliar a validez e a confiabilidade. **Resultados.** A escala de 65 itens tem uma variável explicada de 61.3% e está composta por cinco domínios de PC: inferência, avaliação, argumentação, análise e interpretação. Se obteve um coeficiente alfa de Cronbach de 0.61. **Conclusão**. A escala proposta para avaliar as habilidades do PC do estudante converge com conceitos de autores reconhecidos com a teoria de PC, e é adequada para ser utilizada como índice de medição de PC na formação profissional.

Descritores: pensamento; avaliação educacional; educação superior; escalas.

Introduction

Research exercises to measure CT have been conducted for over three decades, during which different instruments have emerged and have been positioned for said purpose, evaluating results from specific scenarios to promote CT, as well as everyday scenarios of formative nature such as school and professional formation. The most recent development of CT measurement exercises in the last six years evidence that interest has been oriented into two lines: in the first place, measurement made by applying already existing instruments and validated within the scientific community, in which some account for CT skills;[1,2] others for the dispositions[3] and others for both,[4] both in scenarios intended for CT promotion and in everyday formation spaces. Secondly, there are exercises dedicated to constructing measurement proposals, based on preexisting measurement instruments[5] or on the conceptualization of CT,[6] given that the latter sought a construction of items specific to emerging conditions for which a specific CT definition was applied. These construction exercises evidence the interest for achieving measurement instruments that adjust to the specific conditions of each case.

As a result of the review of these studies, as well as of others registered since 1960, various situations were found that currently permit problematizing the CT measurement. In the first place, with respect to the structure, two aspects were evidenced, one referring to the scales with essay-type open questions, which pose greater difficulty for their reproducibility – considering the elements that must be evaluated within the texts constructed, requiring from evaluators a high level of CT knowledge, without this guaranteeing a standardized criterion in scoring these types of tests. The other aspect of the structure has to do with the Likert-type questions that seek a self-evaluation of those evaluated with respect to their behavior or their behavioral trend regarding a given situation, evidencing that these types of questions lead more to a self-evaluated projection of CT skills and dispositions, based on the concept of each of those evaluated on the situation proposed.

A second situation corresponds to the composition of the scale, that is, to the concepts measured in the different scales, observing that similar skills are evaluated – although denominated with different concepts and, in some cases, these skills are assessed in disaggregated manner and in others in grouped manner, evidenced in the definitions made of each of the concepts assessed. This situation has led to many proposals that generate a situation of high fragmentation in measurement and, consequently, to a lower probability of achieving its standardization, which permits reproducibility in different contexts. Finally, there is a third situation that refers to the lack of proposals in Colombia that aim to respond to the two previous situations, having theoretical reflections and methodological construction to promote CT in school classrooms and universities, but not on its measurement to evaluate progress in this subject. In response to these problematic situations, this text presents the construction and validation process of a measurement index of CT in professional formation to propose a first approach to generating tools in the country, as well as of sensitizing on the importance of consolidating a measurement instrument that responds to the specific conditions in which formative processes are developed, achieving a proposal that can be replicated in different scenarios, easily read by institutions and teachers in general.

For this design, integrating the best definitions proposed in the academic field,[5-13] researchers understand CT as the "rational cognitive process of higher order, developed from tendencies to thinking in a certain form and doing something under given conditions, which integrates conceptual knowledge with experience through contextualized problematizing, leading to construction hypotheses supported on evidence to reach judgment. This thinking implies inference, evaluation, argumentation, analysis, and interpretation." In nursing, it is necessary to advance in the promotion and development of critical thinking in the scientific, technical, human, and social formation, which favors the construction of the horizon of care, and a significant teaching learning experience for nursing professionals within the social context. The aim of this study was to construct and validate a CT measurement index in professional formation.

Methods

This was a test validation descriptive study. To measure CT, multiple instruments have been developed among which there are qualitative, quantitative and mixed proposals, having a variety of scales that try to evaluate different components, among them: the California Critical Thinking Disposition Inventory (CCTDI),[8] which tries to measure dispositions to thinking critically through a scale of 71 items, distributed in seven subscales, and assessed through a Likert scale per level of agreement through self-evaluation; the California Critical Thinking Skills Test (CCTST)[14] that seeks to evaluate CT skills with 34 multiple-response items, distributed into five subscales; the Watson-Glaser Critical Thinking Appraisal (WGCTA) composed of 80 items distributed into five subscales, reduced to three subscales in its second version (WGCTA II),[9] the Halpern Critical Thinking Assessment (HCTA)[15] poses 25 everyday scenarios, distributed into five subscales, five scenarios per each, where those evaluated are first approached from open questions or questions of construction, followed by mandatory selection questions (multiple-response, range, or classification of alternatives); finally, with less cases of application, there is the Health Sciences Reasoning Test (HSRT)[16] that is comparable to the CCTDI, but with a more specific application for health sciences, being derived specifically from CCTST but aiming to recognize elements of the context; this instrument is composed of 33 multiple-response items distributed into five subscales. Besides these scales, used in different parts of the world, others are elaborated based on the CT definitions they apply, with most using the structure of Likert-type scales through self-evaluation of behaviors, as well as open questions of essay-type construction.

From this balance, this construction exercise was guided toward a scale that, in the first place, used a structure of closed questions with single responses on specific cases presented through readings, which permits its reproducibility without requiring a very high level of CT knowledge, as well as the direct evaluation of CT skills and not their projection; secondly, triangulate concepts in which the different measurement proposals present common elements in their definition to validate a scale that gathers the different proposals to contribute to greater unification, given that a fundamental finding was that several of the best positioned scales name differently skills that are equal, which generates a high degree of compatibility rather than differentiation; with the highest objective being that of having a measurement scale that, through an index, evaluates the conditions of higher education students in the region and the country.

This process of construction and validation of a CT measurement scale was developed between 2013 and 2015 in the city of Medellín-Colombia, specifically at Universidad de Antioquia, with an application to 53 students, 35 from Nursing and 18 from Sociology; as population of principal interest because these programs seek the promotion of CT skills. The work started with the descriptive phase, which constructed the current state of CT knowledge, identifying gaps and achievements in its definition, research trajectories and conceptualization on the theme, and knowledge of the proposals by different authors, to comprehend their integrality as object of study, achieving the construction of the conceptual and methodological base of the investigation. A search was made in the scientific databases of Health Sciences, Education, and Social Sciences, using databases, like Science Direct, Embase – Elsevier, Medline, Dialnet, EBSCO, ISI, MD consult, Blackwell, SciELO, Redalyc, JSTOR, Wilson Web, SpringerLink, Current Contents, and PubMed. In the analytical and interpretative phase, synthesis and elaboration of conclusions was carried out by relating data obtained through different techniques, identifying categories, authors, and currents of thought, which led to more precise identification of trends, convergences, and contradictions.

The final process was the selection of domains, from the conceptual base matrix, defining as CT skills object of measurement for the project: inference, evaluation, argumentation, analysis, and interpretation, for which their definition was constructed from the most relevant authors. The five domains constructed were evaluated by experts to validate their conceptual construction to measure the skills of the CT construct. These voices qualified based on renowned experience, issued a concept on the work developed by the research team. The group of experts was selected bearing in mind their expertise on the CT topic and on the method to construct and apply measurement scales. The call process was conducted considering the consultation of databases specialized on the theme, which indicated authors, origin, articles, or scales. In total, ten national and international experts were consulted, obtaining response from four of them. The responses obtained were aimed at the analysis of the validity of content and the validity of construct. One of the experts considered that the indicators correspond to the characteristics clearly stated by the authors referenced in the investigation, the instrument corresponds to an adequate design, measures what it seeks to measure, and displays validity of construct and content.

Also, another expert considered that the instrument may be excellent in logical and verbal terms, but the usefulness must be clear for the purposes it pursues, the users, and the context. Its evaluation alerts that three conditions must be considered on the instrument: *cognitive-linguistic adequacy*, referring that the indicators are expressed so that they turn out in their vocabulary and syntactic construction comprehensible and applicable by its users (professors and students) because it corresponds to their levels of cognitive-linguistic development. *Systematicity*, referring to the indicators being expressed in a way to permit evaluating to what extent students proceeded in flexible or systematic manner in executing the skill being evaluated, and *criticity*. Finally, another expert manifested the need make it explicit, as part of the theoretical framework, if CT skills are independent or if they are dimensions of a single construct.

The recommendations of the experts were included in the scale prior to running the pilot test, with this being the next step that consisted in applying the scale to first and last semester students, aiming to evaluate the situation when starting and ending the higher formation process. This test had the fundamental purpose of testing comprehension of the questions by those interviewed. Application was made to groups of students from a specific academic course in each level, securing informed consent from each participant, where their voluntary participation was explicit and each was informed of the confidentiality of the information and its academic use. This investigation did not contemplate risks to participants and adhered to resolution 008430 of 1993 by the Ministry of Health of the Republic of Colombia.

The scale was responded directly in self-reported manner for which students were provided a booklet with readings and questions along with an independent answer sheet. This application took an average of one hour and 40 minutes, within the range of time of the international tests reviewed; the final evaluation of the participants showed that the readings achieved their attention and were easily understood; in general, the structure of the questions was clear and the language was within reach of those being evaluated.

Results

The definitions taken for the five CT domains object of measurement were the following: **Inference:**[7-9,16] consists in drawing reasonable conclusions, like conjectures or hypotheses, based on pertinent and relevant information available, following a logical path. **Evaluation**:[7-9] assesses the credibility, pertinence, and relevance of the information and in assessing its logical relations, whether real or assumed. **Argumentation:**[11,12] consists of the process of selecting and presenting coherently the results of its own reasoning. **Analysis:**[7-9] identifies the logical force of the inferential relations between approaches or questions from reasoned justification over evidence. **Interpretation**:[7,12,17] selects the best alternatives to express meaning.

The measurement index. The concepts of these five domains were operationalized through a methodological base matrix, identifying variables, indicators, and items, guaranteeing the validity of content in the measurement index. As a result, 8 variables, 13 indicators, and 65 assessment items were constructed to structure the scale. From this structure, a scale was constructed with five levels with which those assessed were classified from the number of items answered correctly, presenting an index from 0 to 100, with the following values: very high (80 to 100), high (60 to 79.9), medium (40 to 59.9), low (20 to 39.9), and very low (0 to 19.9). The index presents a global measurement, that is, it generates a CT measurement that evaluates the five domains; and a marginal or partial measurement that evaluates each domain individually, with the same scale from 0 to 100. In this index, the domains present equal proportional weight, given that the literature reviewed did not permit establishing weighting criteria, that is, the knowledge produced shows each domain at the same level in conceptualization and CT measurement. The instrument required the construction of single-response closed items. These items were derived from short texts or fragments of texts on different themes from everyday life, as well as statements that pose problems to be solved by those being assessed. The following illustrates two of the items constructed:

*1. Based on the text, **indicate the option that shows the logical process** to solve a problem:*

Option A	**Option B**	**Option C**	**Option D**
a. Symbolize	a. Characterize	a. Characterize	a. Symbolize
b. Find methodology	b. Find methodology	b. Define	b. Characterize
c. Characterize	c. Identify strategies	c. Find methodology	c. Model
d. Define	d. Model	d. Identify strategies	d. Find methodology
e. Comprehend	e. Apply solution mechanisms	e. Model	e. Identify strategies
f. Find solution	f. Reuse solution mechanisms	f. Apply solution mechanisms	f. Apply solution mechanisms

*2. Indicate in the following question the two **statements that relate poorly or do not relate** to this conclusion.*

A. Although certain logical discernment exists, personal subjectivity prevails

B. Judgment is a necessary instrument in examining all types of issues

C. The essay tends to be "a deep cove on a subject not intended to be exhausted

D. "essay" has an origin in the French *"essai",* which implies a test

Each of the questions constructed on the texts selected were derived from the methodological base matrix, according to the structure of the 13 indicators that integrate the index, and arranged in a work booklet that guides their response from reading 22 texts.

To assess validity an analysis of main components was carried out, given that it is a statistical technique that permits, among other applications, evidencing from experimental data if a grouping is or is not fulfilled of variables that belong to a general element sought to being measured. Thus, this technique permits extracting from a set of variables a lower number of components (non-observable theoretical variables) that explain the higher variability observed in the data, so that when applied to the 13 indicators that group the 65 items permitted seeing if the five domains were effectively indicated. In this regard, it was noted that indicators exist with statistically significant correlations, with the KMO test of 0.59, showing the sample's adequacy for factor analysis and Bartlett's test permitted rejecting the null hypothesis that the correlations matrix is the identity matrix ($p = 0.025$), confirming the pertinence of the analysis. The result permitted observing that, in fact, the information gathered pointed to five main components that managed to explain 61.3% of the data variability, being quite significant in that it confirms the hypothesis that five CT domains are being measured (Table 1).

It is worth noting that the emerging components have some differences against the theoretical grouping, which could be described in general from the processes that are involved in the following manner: *Component 1:* Deduction, induction, identification of alternatives, conjecture, identification of sequences; *Component 2*: Ordering and correspondence; *Component 3*: Conjecture and real relationship; *Component 4*: Induction and real relationship; and *Component 5*: Selection of information and assumed relationship. This emerging grouping permits verifying an aspect noted from theory in that development of skills depends on the development of others, which is why they are strongly linked, finding cases where the indicators of a skill point to the evaluation of another, without this compromising the latter's indicators. The internal consistency analysis revealed that the 65-item scale had a Cronbach's alpha of 0.61.

Table 1. Total variance explained from the CT model

Component	Total	% of variance	% accumulated
1	2.5	19.0	19.0
2	1.7	13.2	32.1
3	1.6	12.5	44.6
4	1.1	8.8	53.5
5	1.0	7.9	61.4

Discussion

The results obtained permitted establishing that the index constructed shows an acceptable degree of reliability within the context of Colombian formation, given that it permitted advancing on three levels against the currently existing scales; the first conceptual, upon constructing a definition of CT that involves and articulates contributions from representative and contemporary authors, which can be used to comprehend and evaluate CT in the Colombian and Latin American context.

To said extent, it should be expected for the index to permit accounting in more contextualized manner for the conditions of formation in CT, with a conceptual wager that is fed by different authors and whose interest was the articulation of the aspects proposed in the domains worked, involving elements that range from a dispositions component to a procedural component and where the characteristics of these procedures are involved as dialogical components of thought:[7] logical,[15] contextual,[7] and pragmatic. These final five domains were ratified from the results of the expert evaluation, evidencing that the conceptual dimensions addressed have conceptual consistency, which permitted having a conception of CT consolidated to be measured, accounting for the posture assumed of combining the different theoretical elements being adequate; differentiating this proposal from the authors who assume a single conceptualization, constituting an innovation factor in the matter.

Secondly, the instrument constructed to approach these dimensions at empirical level becomes a contribution to developing measurement instruments in the national context, given that current measurements are carried out through instruments, like the California Critical Thinking Disposition Inventory, the Critical Thinking Appraisal, Halpern's Critical Thinking, and other less known instruments; some of which specify a cost for their use and others designed in specific contexts. In that sense, this contribution, pioneer in the region, proposes the generation of a field of discussion that enables reflecting on how to measure CT in relation to the formation conditions and proposals existing in specific contexts.

A last element, considered a contribution to the discussion of the measurement, is the use of a structure of questions that directly evaluates CT skills through narrative strategies and closed indicators, which had an acceptable Cronbach's alpha coefficient based on three situations: firstly, this is a high-complexity theme for operationalization and, hence, for its measurement because there is no single agreement in scientific production with respect to its definition; secondly, the measurement scales reviewed have alpha coefficients quite similar to this,[5,18] showing different arguments that allow seeing the high level of complexity to construct measurement scales of these types of constructs, especially in this proposal where a single author was not followed; seeking, rather, the articulation of several authors. Finally, the third argument corresponds to this being the first investigation conducted to construct a proposal to measure critical thinking in Colombia, with the characteristics exposed, and one of the few in Latin America, representing an exploratory approach, which is why we consider acceptable the index obtained on the arguments that "during the first phases of the investigation a reliability value of 0.6 or 0.5 can be sufficient",[19] given that "the reliability value in exploratory research must be equal to or above 0.6".[20]

These narrative strategies promote the application of different cognitive processes related to the five CT domains worked and which account for the development and implementation of the skill. This is considered a contribution because other instruments that appeal to self-assessment, especially through Likert scales, lead to collecting perceptual information, which does not evaluate the skill, seeking information on what the subject considers it has and how the subject could apply in a possible future situation.

The immediate horizon of the scale constructed will work on broadening the versions of the items that constitute it to generate greater versatility in its application to a bigger population of students, expecting to perform follow up measurements in Social Sciences and Health with regard to the formulation of strategies to develop CT from the results obtained; seeking, thereafter, to broaden said application to other areas of knowledge that orient their profiles to CT in the formative process of higher education. Future phases of the investigation expect to model the scale to bring it to basic formation levels, especially secondary formation, given that its structure was designed only for the higher education population, specifically for the Social Sciences and Health.

It is important to consider that the main limitation for this study was its application to a small population, and although other measurement cases are registered prior to 2010 with a population below 100 cases, it is clear that this first study constitutes an exploratory approach whose principal value is to develop a conceptual and methodological proposal that discusses CT measurement in the country. Likewise, it must be considered that the work was done with population from Social Sciences and Health, which is why using the instrument in other areas of knowledge must be subjected to a validation process, before being applied for the final measurement.

For Nursing, the theme object of investigation is vitally important within the current context of higher education because its professional and disciplinary practice demands knowledge on caring for human beings from an objective and inter-subjective vision, which should be guided by an educational process with the intention of favoring the development of cognitive and attitudinal skills for inquiry, problematization, identification, and analysis of care needs, their interpretation and argumentation, which give sense to care practices from the professional and disciplinary, both for the subject care for and for society.

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Nursing diagnoses associated with the national policy for health promotion

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Nursing diagnoses associated with the national policy for health promotion

Objective. To identify the relationships between nursing diagnoses proposed by NANDA-I taxonomy II and the priority themes (PT) of the National Policy for Health Promotion (PNPS in Portuguse). **Methods.** An integrative literature review was carried out in the Scopus, Cinahl and SciELO databases, using the descriptors: *health promotion*, *food habits*, *traffic accidents*, *drugs abuse*, *environment and public health*. The search considered scientific articles published between 2000 and 2016. **Results.** Twelve articles were selected to identify and explore nursing actions related to PT. It was identified that although the said taxonomy offers a Domain called Health promotion, there is a need to relate the diagnoses of other domains to include the health actions described in the aforementioned Policy. It was observed that there is an attention and concern of the nursing professionals to address topics such as the training of managers and the promotion of healthy eating. In relation to the priority themes promotion of safe mobility and sustainable development, no nursing diagnoses were identified due to the scarcity of diagnoses related to them in the mentioned taxonomy. **Conclusion.** Although the NANDA-I taxonomy presents a specific domain on health promotion, these are not sufficient to meet the needs of the priority themes proposed by PNPS.

Descriptors: health promotion; nursing diagnosis; public health policy.

Diagnósticos de Enfermería relacionados con la política nacional de promoción de la salud brasilera

Objetivo. Identificar las relaciones entre los diagnósticos de enfermería propuestas por la Taxonomía II de la NANDA-I y los temas prioritarios (TP) de la Política Nacional de Promoción de la Salud (PNPS). **Métodos.** Revisión integrativa de la literatura en las bases de datos Scopus, CINAHL y SciELO, utilizando los términos: *health promotion*, *foods habits*, *accidents traffic*, *abuse drugs*, *environment and public health*. La búsqueda consideró artículos científicos publicados entre 2000 y 2016. **Resultados.** Se seleccionaron 12 artículos para identificar y explorar las acciones de enfermería relacionados con el TP. Se encontró que, a pesar de que la taxonomía referida ofrece un dominio titulado Promoción de la Salud, hay necesidad de relacionar los diagnósticos de otros dominios para

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complementar las acciones de salud descritas en la PNPS. Se observó que existe una preocupación de los profesionales de enfermería por abordar temas como la formación de gestores y la promoción de la alimentación saludable. En relación con los temas prioritarios de la promoción de movilidad segura y desarrollo sostenible, no fueron identificados los diagnósticos de enfermería en la taxonomía utilizada. **Conclusión.** Aunque la taxonomía de la NANDA-I presenta un dominio particular de diagnósticos de promoción de la salud, estos no son suficientes para satisfacer las necesidades de los temas prioritarios propuestos por PNPS.

Descriptores: promoción de la salud; diagnóstico de enfermería; políticas públicas de salud.

Diagnósticos de enfermagem associados à política nacional de promoção da saúde

Objetivo. Identificar as relações entre diagnósticos de enfermagem propostos pela taxonomia II da NANDA-I e os temas prioritários (TP) da Política Nacional de Promoção da Saúde (PNPS). **Métodos.** Foi realizado uma revisão integrativa de literatura nas bases de dados *Scopus, Cinahl* e *SciELO*, utilizando os descritores: *health promotion*, *foods habits*, *accidents traffic*, *abuse drugs*, *environment and public health*. A busca considerou artigos científicos publicados entre 2000 e 2016. **Resultados.** Foram selecionados 12 artigos para identificar e explorar ações de enfermagem ligadas aos TP. Identificou-se que apesar de a referida taxonomia oferecer um Domínio intitulado Promoção da saúde, há a necessidade de relacionar os diagnósticos de outros domínios para que sejam contempladas as ações de saúde descritas na Política supracitada. Observou-se que há uma atenção e uma preocupação dos profissionais de enfermagem em abordar temas como a formação de gestores e a promoção da alimentação saudável. Em relação aos temas prioritários promoção da mobilidade segura e desenvolvimento sustentável, não foram identificados diagnósticos de enfermagem, devido à escassez de diagnósticos relacionados a eles na referida taxonomia utilizada. **Conclusão.** Embora a taxonomia da NANDA-I apresente um o domínio em particular sobre promoção da saúde, estes não são suficientes para satisfazer as necessidades dos temas prioritários propostos pela PNPS.

Descritores: promoção da saúde; diagnóstico de enfermagem; políticas públicas de saúde.

Introduction

In Brazil there is a great effort to build a health care model that prioritizes improvement to the quality of life of subjects and the community. In this sense, the federal administration of the Unified Health System (SUS) proposes a transversal, integrated and intersectoral policy that will dialogue with the most diverse areas to promote the quality of life of the population in which all are participants in health care.[1] The publication of the National Policy for Health Promotion (PNPS) ratifies the commitment of the Ministry of Health in the expansion and qualification of health promotion actions in the services and in the management of the Unified Health System[2]. For the said Policy, health promotion is a set of strategies and ways of producing health, both individually and collectively, characterized by articulation and cooperation within the sectors and between them, and by the formation of the Health Care Network, seeking to articulate with the other social protection networks to promote a broad participation and a broad social control. Thus, it recognizes other existing policies and technologies aimed at equity and quality of life, reducing vulnerabilities and health risks arising from social, economic, political, cultural and environmental determinants. Thus, objectives, principles, values, guidelines, cross-cutting themes, operational strategies, responsibilities and priority themes aim at equity, improvement of conditions and ways of living and at affirmation of the right to life and health, dialoguing with the reflections of movements in the field of health promotion.[2]

The importance of the priority themes is well known, as they are evidenced by the health promotion actions carried out since 2006 and inserted in the first version of the PNPS, as well as by the norms and regulations in force at the federal level and by the national and international agreements signed by the Brazilian government, which include permanent education training, adequate and healthy food, corporal practices and physical activities, combating the use of tobacco and its derivatives, combating the abusive use of alcohol and other drugs, promoting safe mobility, promoting peace, human rights and the promotion of sustainable development.[2] Nurses have taken responsibility for identifying opportunities of health promotion for individuals, families, groups and communities. In this sense, the academic training of nurses in Brazil has been based on the qualification to work in the health promotion. In order to work on the themes listed by the PNPS 2015, it is necessary to know the limits of professional performance, which are determined from the phenomena by which they are clinically and legally responsible. In nursing, in particular, terminologies on nursing diagnoses have been used to provide clear concepts and definitions of nursing phenomena, and can improve care by allowing nurses to use the same language to describe patients' problems, nursing interventions, and patients' outcomes in many settings.[3]

Thus, nurses develop the Nursing Process, which is organized and executed by using the Systematization of Nursing Care (SNC) that guides the activities of the entire nursing team. The SNC has a holistic vision and is composed of interrelated stages, which are history, diagnosis, planning, implementation and evaluation of the nursing results. For the step of identifying the nursing diagnoses, nurses use terminologies that facilitate communication among professionals, among them, the taxonomy proposed by NANDA International (NANDA-I) stands out. The NANDA-I brings a system of classification of nursing diagnoses that enable a standardized language for the practice of nurses. The use of a standardized language is useful to determine more clearly the communication and the care by the nursing team, and allows the creation of protocols to establish priority care for certain populations and to ensure a consistent documentation, representing the professional judgment of clinical nurses. In this way, NANDA-I exists to develop, refine and promote a terminology that reflects the clinical judgments of nurses.[4]

In the said taxonomy, nursing diagnoses constitute a clinical judgment that takes into account human responses to certain health conditions and life processes that may represent a risk to the health of an individual, family, group or community. On the other hand, a health promotion diagnosis is a clinical judgment about the motivation and desire of an individual, family, group or community to increase well-being and accomplish the potential of human health, as manifested in the willingness to improve specific health behaviors.[4] It is organized into nursing domains, classes, and diagnoses. A domain is a sphere of knowledge, influences and questions. A class is a group, set, or type that shares common attributes.[5] Domain 1 is the sphere named Health promotion, composed of class 1 that has the ND Deficient diversional activity activity and Sedentary lifestyle, and class 2 has the ND Health control that is composed of the ND Lack of adherence, Risk-prone health behavior, Ineffective health control, Readiness for enhanced health control, Ineffective health maintenance, Ineffective protection, Poor community health, Frail elderly syndrome and Risk for frail elderly syndrome.[4]

It is necessary to recognize the nursing diagnoses associated with the priority themes and, thus, reach objectives proposed by the Ministry of Health to promote health. Therefore, identifying the nursing diagnoses associated with the priority themes of the National Policy for Health Promotion is important because it may facilitate the elaboration of specific nursing care with the aim of expanding health promotion actions. Therefore, the objective of this study is to identify the relationships between nursing diagnoses proposed by NANDA-I and the priority themes advocated by the National Policy for Health Promotion.

Methods

This is a reflexive study carried out from March to July of 2016 based on the critical reading of the PNPS priority themes and the nursing diagnoses (ND) that make up the NANDA-I taxonomy, in order to contextualize these diagnostic labels from the perspective of PNPS. Such methodology resembles qualitative studies, due to the similarity of the form of interpretation and analysis of the scientific findings after literary survey.[6] An integrative review was made on the study subject because this method contributes to the understanding of a specific problem and provides subsidies for evidence-based practice through informed knowledge.[7] The search took place in the scientific databases Scopus, CINAHL and SciELO, using the descriptors *health promotion*, *food habits*, *traffic accidents*, *drugs abuse, environment* and *public health*, combined through the Boolean operator AND, following the assumptions of the literature review with the objective of gathering studies with focus on the analyzed theme that would support our critical reflection of the findings. Researchers listed those studies characterized as articles, published between the years 2000 and 2016, available in the English, Portuguese or Spanish languages.

Results

The initial sample counted on 908 articles, of which 325 were in the Scielo database, 298 in the CINAHL and 385 in the Scopus. Then, the following inclusion criteria were applied to refine the results: complete and freely available articles in Portuguese, English and Spanish languages that addressed the subject under study. Each article was submitted to reading the title and the abstract to verify the presence of elements that could contribute to the identification of diagnoses related to the Priority Themes. Subsequently, a complete reading of the selected articles was carried out. The final sample consisted of four articles from the SciELO database, three from the CINAHL database and five from the Scopus database. Through the reading of the articles it was possible to identify elements that contributed to the identification of nursing diagnoses present in NANDA-I that could be related to the PNPS priority themes.

PNPS and NANDA-I nursing diagnoses. The PNPS update made it possible to recognize current issues in Brazilian society that need attention from public health policies and other political sectors, as well as the participation of the private sector and the community. The priority themes of the current PNPS are: permanent education and training, adequate and healthy nutrition, corporal practices and physical activity, combating tobacco, alcohol and other drugs, promoting safe mobility, promoting a culture of peace and human rights, and promoting sustainable development.[2] The relationship between the priority issues of the national policy and the NANDA-I diagnoses are set out in the table below for a better view.

Table 1. The PNPS priority themes and their respective NANDA-I nursing diagnoses. 2016

Priority Themes	NANDA-I domains	NANDA-I Nursing Diagnoses
Permanent education and training	Perception/Cognition	Deficient knowledge
Adequate and healthy food	Nutrition Health promotion	Ineffective breastfeeding Insufficient breast milk Readiness for enhanced breastfeeding Unbalanced nutrition: less than bodily needs Obesity Overweight/Risk for being overweight Readiness for enhanced nutrition Frail elderly syndrome/Risk for frail elderly syndrome
Corporal practices and physical activity	Health promotion	Deficient diversional activity Sedentary lifestyle
Combating tobacco use, alcohol and other drugs	Health promotion	Risk-prone health behavior Ineffective protection
Promoting safe mobility	-	-
Promoting a culture of peace and human rights	Safety/Protection	Risk for self-directed and other-directed violence Risk for suicide Self-mutilation/Risk for self-mutilation
Promoting sustainable development	-	-

Discussion

It is important to emphasize that, although this taxonomy has an exclusive domain for diagnoses of health promotion, it was observed that these are not enough to supply the topics addressed by the current PNPS, therefore, diagnoses of other domains were also listed to compose the findings. The first theme proposed in the document refers to the actions of training managers and health professionals, as well as professionals from other areas, for the development of educational actions in the field of health promotion.[2] This is in line with that established in article 200 of the Federal Constitution of 1998, which recommends that the Unified Health System is also responsible for the training of health professionals.[8]

The presence of the diagnostic label Deficient knowledge brings attention to the priority theme regarding the qualification of professionals, as well as to the perception of health by individuals and the community. This diagnosis presents as some of its etiological factors the lack of resources for knowledge, cognitive alterations, insufficient information and lack of interest in learning.[4] The present integrative review brings the manifestation of the nursing diagnosis Deficient knowledge in different scenarios, such as, in the case of puerperal women, in relation to the health care to the newborn and self-care. In this context, the prevalence of this diagnosis was observed in the entire sample studied.[9] Another study shows the presence of this label in the reality of patients with diabetes mellitus, being prevalent in the majority of the investigated subjects.[10] Regarding the reality of health professionals, the study shows that there is a gap in knowledge regarding exposure to risk agents in the hospital environment. Health professionals have not recognized noise, ionizing radiation, and extreme temperatures as potentially risk factors. In addition, the exposure to physical factors such as humidity, illumination, temperature and radiation was classified as good, which alerts to a misunderstanding about the consequences that such continuous exposure can cause in professionals.[11]

It is important to highlight that, in addition to the above, permanent education can be linked to validation studies of nursing diagnoses, since there is no specific label for this PT in NANDA-I. Diagnostic validation studies allow the nurse to know about a certain phenomenon of nursing in an accurate way. With this, the professional will be able, through clinical reasoning, to use their learning in clinical practice,[12] improving the care provided, since it reduces bias at the time of diagnostic inference. An inference made without theoretical foundation leads to misconceptions in the planning and execution of nursing care, leading to impairments in the individual's health. Food also enters the list of issues that require greater attention from (federal, state and municipal) managers and health professionals. The current PNPS version highlights the importance of actions aimed at adequate and healthy food to reduce poverty levels.[2]

The concern with this theme is highlighted in the actions of public policies, evidenced, mainly, in the letters of health promotion. Food is treated as a fundamental factor for the development and growth of the individual, providing the conditions for a satisfactory quality of life. Given such importance, the taxonomy under study encompasses nursing diagnoses focused on the food and nutritional process. NANDA-I brings with it a specific domain for Nutrition, which is defined as "activities of ingesting, assimilating and using nutrients for purposes of tissue maintenance and repairing and energy production".[4] This domain is divided into five classes, namely: ingestion, digestion, absorption, metabolism and hydration. However, the diagnostic labels defined so far are concentrated in the classes ingestion, metabolism and hydration.

According to the definition of the PT on feeding, the identified diagnoses that are closely related to this definition were: Ineffective breastfeeding, Insufficient breast milk, Readiness for enhanced breastfeeding, Unbalanced nutrition: less than bodily needs, Obesity, Overweight, Risk for overweight and Readiness for enhanced nutrition. In a study conducted by Teixeira et al.,[13] the most frequent defining characteristics (DC) of the diagnosis Unbalanced nutrition less than the bodily needs among children in early childhood were: food intake less than the recommended daily portion, irritability, satiety immediately after food intake and lack of interest in food. The prevalence of this diagnosis was estimated by the latent class analysis model in 27.6%. It is important to emphasize that some NANDA-I diagnoses, even belonging to other domains, include nutritional/nutritional aspects as triggers/etiological factors. As an example, there is the nursing phenomenon Frail elderly syndrome, from the Health Promotion domain, which contemplates malnutrition and sarcopenic obesity as related factors for its development.[4]

The third priority content addresses the practice of physical activities, being defined as actions to encourage corporal practice and physical exercises, encompassing improvements in public spaces for such activity.[2] Within this perspective, the correlated nursing diagnoses were Deficient diversional activity and Sedentary lifestyle, both belonging to the Health promotion domain. Such labels bring as a etiological factor for their manifestation the lack of resources for physical practice, emphasizing the need of spaces accessible to the community for the accomplishment of physical and leisure activities.[4] The abusive and indiscriminate use of substances harmful to health, such as alcohol, tobacco and illicit drugs, is a current concern in PNPS. Public policies aimed at reducing the consumption of these elements are advocated since the formulation of letters for health promotion. In the current version of PNPS, this theme involves actions of education and health promotion with the objective of reducing and controlling their consumption, counting on educational, economic, legislative and social practices.[2] This theme can be found in NANDA-I as the diagnosis of the Health promotion domain Risk-prone health behavior, in which the individual manifests incoherent attitudes to lifestyle modification and quality of health,[4] expressed by substance abuse and smoking.

The PT Promotion of culture of peace and human rights aims at articulated actions between the health sector and other social protection networks, with practices that encourage solidarity, coexistence, respect for life and the consolidation of bonds between individuals, in order to reduce violence and promote peace.[2] Some ND belonging to the Safety/Protection domain alert to the previously mentioned theme. They are: Risk for self-directed and other-directed violence, Self-mutilation and Risk for self-mutilation, and Risk for suicide.[4] These labels alert to the deficiency present in this issue and corroborates with the current epidemiological data of violence in Brazil. In 2011, Brazil presented rates of 8.6% of SUS hospitalizations related to violence and accidents.[13] In the previous year, mortality rates related to external causes showed an increase of 8.4% when compared to the year 2001. In addition, the mortality of young people and adolescents due to violence and accidents led the national ranking of death causes,[14] which makes it a public health problem, evidencing the need to implement preventive actions and health promoters.

The Promotion of safe mobility is another evident topic in our society, due to the increase in morbidity and mortality from traffic accidents. This PT corresponds to multidisciplinary and intersectoral actions that include health care from the primary care level to tertiary care. The PNPS emphasizes that investments should be directed towards the educational activities for the promotion of a safe traffic.[2] Brazilian traffic violence has been an international highlight in recent years, since it has morbidity and mortality rates superior to that seen in the scenarios of military and civil wars. In articulation with the Promotion of culture of peace and human rights, previously mentioned, Brazilian epidemiological data on mortality due to traffic violence, treated with external causes, are alarming. The Mortality Information Subsystem (SIM) presented information on the number of deaths among Brazilian young people in the year 2012. Of the almost 78 thousand deaths in the young population, about 55 thousand were due to external causes, such as violence in traffic. In addition to the young people, there is a high incidence of traffic violence directed at the elderly, considering the vulnerability of this population.[15]

Promotion of sustainable development is characterized by the need for actions aimed at taking care of the environment integrated into health actions.[2] No nursing diagnoses in NANDA-I were identified that included the themes of Promotion of safe mobility and Promotion of sustainable development. Both priority sectors make up a gap within the NANDA-I classification, and they may be suggested for the elaboration of new diagnostic labels, since such approaches characterize the current needs of the context that we are inserted. The environment is seen as all the conditions, circumstances and influences that can affect the development and behavior of the human being. The evolution of the concept of environment according to Roy's Adaptation Model, as well as the individual-environment interaction, becomes an important theme for the understanding of nursing phenomena.[16]

Conclusion

Although the NANDA-I taxonomy encompasses about 250 nursing diagnoses, most of these are focused on the individual in a unique way. And although it presents a particular domain for health promotion diagnoses, these were not enough to meet the needs of the priority themes proposed by PNPS. The diagnoses that are most present within the PNPS are those corresponding to the Nutrition domain. It was identified a gap of diagnoses necessary for actions in a collective character regarding environmental, sustainable, educational and safety actions. Based on the findings of this study, it is highlighted the importance of construction of new diagnostic labels in NANDA-I that contemplate the collective needs of the population, as well as to improve the diagnoses belonging to the domain of health promotion.

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Medical and nursing students' attitudes toward mental illness: An Indian perspective

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Medical and nursing students' attitudes toward mental illness: An Indian perspective

Objective. Compare the attitudes toward mental illness between medical and nursing undergraduate students from a university in India. **Methods**. A cross sectional descriptive study was carried out among medical (*n*=154) and nursing undergraduate students (*n*=168) using Attitude Scale for Mental Illness (ASMI) questionnaire with six sub scales namely; *Separatism, Stereotyping, Restrictiveness, Benevolence, Pessimistic prediction and Stigmatization*. This was a 5-point Likert scale with 34 items to rate participants responses from totally disagree (1) to totally agree (5). The lower scores indicate positive attitudes toward persons with mental illness. **Results.** Our findings revealed that 54.5% of medical students versus 64.8% of nursing students have positive attitudes toward mental illness. While medical students have better attitudes against separatism and stigmatization, nursing students have more positive attitudes in benevolence and against pessimism. **Conclusion**. An important proportion of medical and nursing students have negative attitudes toward mental illness. It is necessary to review and adapt the current curriculum to favor the positive attitude of future professionals toward people with these types of diseases.

Descriptors: mental disorders; attitude; students, medical; students, nursing; cross-sectional studies.

Actitudes de los estudiantes de medicina y enfermería hacia la enfermedad mental: Una perspectiva hindú

Objetivo. Comparar las actitudes hacia la enfermedad mental entre los estudiantes de medicina y enfermería de una universidad en India. **Métodos**. Se realizó un estudio descriptivo de tipo transversal con estudiantes de Medicina (*n*=154) y de Enfermería (*n*=168). Se utilizó la *Attitude Scale for Mental Illness* (ASMI) la cual tiene 34 ítems divididos en seis dominios: *Separatismo, Estereotipos, Restricción, Benevolencia, Predicción pesimista y Estigmatización*. Las opciones de respuesta son tipo Likert y van desde totalmente en

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desacuerdo (1) a totalmente de acuerdo (5). A menor puntaje es mejor la actitud positiva hacia las personas con enfermedad mental. **Resultados.** Nuestros hallazgos revelaron que el 54.5% de los estudiantes de Medicina versus el 64.8% de los de Enfermería tienen actitudes positivas hacia la enfermedad mental. Mientras que los estudiantes de Medicina tienen mejores actitudes contra el separatismo y la estigmatización, los estudiantes de enfermería poseen actitudes más positivas en la benevolencia y en contra del pesimismo. **Conclusión.** Una proporción importante de alumnos de Medicina y Enfermería tienen actitudes negativas hacia la enfermedad mental. Es necesario revisar y adaptar el currículo actual para favorecer la actitud positiva de los futuros profesionales hacia las personas con este tipo de enfermedades.

Descriptores: trastornos mentales; actitud; estudiantes de medicina; estudiantes de enfermería; estudios transversales.

Atitudes entre os estudantes de medicina e enfermagem à doença mental: Uma perspectiva hindu

Objetivo. Comparar as atitudes à doença mental entre os estudantes de medicina e enfermagem de uma universidade na Índia. **Métodos**. Se realizou um estudo descritivo de tipo transversal com estudantes de Medicina (n=154) e de Enfermagem (n=168). Se utilizou a Attitude Scale for Mental Illness (ASMI) a qual tem 34 itens divididos em seis domínios: *Separatismo, Estereótipos, Restrição, Benevolência, Predição pessimista e Estigmatização*. As opções de resposta são tipo Likert e vão desde totalmente em desacordo (1) a totalmente de acordo (5). A menor pontuação é melhor a atitude positiva para as pessoas com doenças mentais. **Resultados.** Nossos resultados revelaram que 54.5% dos estudantes de Medicina versus 64.8% dos de Enfermagem tem atitudes positivas para a doença mental. Enquanto que os estudantes de Medicina têm melhores atitudes contra o separatismo e a estigmatização, os estudantes de enfermagem possuem atitudes mais positivas na benevolência e em contra do pessimismo. **Conclusão.** Uma proporção importante de alunos de Medicina e Enfermagem tem atitudes negativas à doença mental. É necessário revisar e adaptar o currículo atual para favorecer a atitude positiva dos futuros profissionais às pessoas com este tipo de doenças.

Descritores: transtornos mentais; atitude; estudantes de medicina; estudantes de enfermagem; estudos transversais.

Introduction

Mental illness is common around the world and constitutes 14% of the global burden of disease.[1] Meta-analysis of epidemiological studies report that 58/1 000 Indians have a mental illness and at least 20% of the adult population is affected with one or the other psychiatric disorder that needs mental health professionals intervention.[2] On the other hand people with Mental illness are one of the most vulnerable populations as they frequently encounter stigma and discriminatory attitudes not only by the general population[3] but also by health care professionals. Further, stigmatizing attitudes hold by the public tend to restrict the civil rights of the persons with mental illness.[4] Earlier studies indicate that health care providers' negative attitude towards persons with mental illness may result in inequality in access, treatment, and outcomes.[5] However, numerous studies from indicate that negative attitudes among medical[6] and nursing[7] undergraduate students. These negative attitudes toward mental illness and psychiatry may be attributable to various factors such as shortage of psychiatric professionals,[8] education, treatable and dangerousness. It is also believed that attitudes and beliefs about mental illness are influenced by knowledge, familiarity, cultural stereotypes, and media stories about mental illness.[9] Further, few studies indicate that attitude influences professional and personal behavior of the health care professionals. According to World Health Organization, positive attitude among health care professionals towards mental illness is prerequisite for the provision of quality care.[10] On the other hand, persons with mental illness and their family members expect health care professionals to treat them as unique individuals without any prejudice and discrimination.[11] In this context, it is crucial to assess future health professionals' attitudes toward mental illness. Further, undergraduate training process could be the right time to modify the negative attitudes toward mental illness, as being primary care providers they frequently face the patients with psychological problems. In India, most of the studies focused on medical and nursing students attitudes toward mental illness and psychiatry. Very few studies examined the impact of undergraduate curriculum in changing their attitudes toward mental illness. It would be interesting to examine attitudinal differences between health professionals' attitudes toward mental illness. It is therefore, present study was developed with aim to assess and compare the attitudes toward mental illness between medical and nursing undergraduate students prior to exposure to psychiatry curriculum.

Methods

This was a cross sectional descriptive study carried out among undergraduate medical and nursing students at selected colleges in Bangalore, India.

Participants. Sample consisting of students from medical and nursing professions selected through convenient sampling method. Study criteria included (a) nursing and medical students studying 1st year and 2nd year of their course (b) students those did not have any exposure to psychiatry yet c) who were willing to participate. Students those attended any mental health courses and those were not willing to participate were excluded from the study. A total of 182 students from medicine and 170 students from nursing were enrolled in to the study. Few students from medicine were refused to participate (*n*=13), few questionnaire were in complete (*n*=7) and few were absent during data collection (*n*=8). Almost all the students from nursing were participated other than those were absent during data collection. Thus, the final sample comprised of 322 students 154 from medicine (84.6% response rate) and 168 students from nursing (98.8% response rate).

Measures. 1-*Demographic data survey instrument.* The demographic form consists of five items to seek the background of the participants in the study that includes "age, education, residence, and contact with mental illness". **2-Attitude Scale for Mental Illness (ASMI).**[12] This was a valid and reliable (Cronbach's Alpha 0.86), self-report measure used to measure health professionals attitudes toward persons with mental illness. This modified version of the questionnaire measures opinions about mental illness in Chinese community (OMICC). This was a 5-point Likert scale rated participants responses from totally disagree (1) to totally agree (5). The lower scores indicate positive attitudes toward persons with mental illness. ***(i) Separatism:*** includes ten items, (1-9, 24) to measure respondents' attitude of discrimination. Ex: "People with mental illness have unpredictable behavior"; ***(ii) Stereotyping:*** includes four items (10-13) intended to measure the degree of respondents' maintenance of social distance toward persons with mental illness. Ex: "It is easy to identify those who have a mental illness"; ***(iii) Restrictiveness:*** composed of four items (14-17), that hold an uncertain view on the rights of people with mental illness. Ex: "It is not appropriate for a person with mental illness to get married"; ***(iv) Benevolence (reverse coded):*** includes eight items (18-23, 25, 26) related to kindness and sympathetic views of the respondents towards people with a mental illness. Ex: "People with mental illness can hold a job"; ***(v) Pessimistic prediction:*** composed of four items (27-30) intended to measure the level of prejudice toward mental illness. Ex: "It is harder for those who have a mental illness to receive the same pay for the same job"; and ***(vi) Stigmatization:*** includes four items (31-34) that measure the discriminatory behavior of the students toward mental illness.

Procedure. Data was collected batch wise in their classrooms after completion of the regular lectures. On introduction, the primary author explained briefly about aims and methods of the present study to all the participants. Students those were willing to participate were asked to complete the questionnaires. They could complete both questionnaires in about 20 min. Data collection tools contained no identifying information and therefore kept the individual responses confidential.

Ethical considerations. Permission was obtained from the administrators of the colleges where the study was conducted. Participants were introduced to the aims and procedures of the study to decide if they would like to participate. After they agreed to participate verbally, the researchers gave them the confidential questionnaire. Participants were given freedom to withdraw from the study at any part of the procedure.

Statistical analysis. The response of the benevolence domain was reverse coded before the analysis. The data were analyzed using appropriate statistical software and results were presented in narratives and tables. The t-test was used to determine whether significant differences existed between medical and nursing students regarding their mean attitudes scores. Chi-Square test was used to find the significant association between socio-demographic variables. Statistical significance was assumed at $p<0.05$.

Results

The sample in the present study comprised of undergraduate students (n=322) of whom 52.1% were nursing students (n=168). The mean age of the nursing students (19.57) was lesser than mean age of the medical students (20.87). More number of nursing students was aged below 20 yrs (72%) compared to 33.1% of medical students (X^2 = 48.879, p<0.001). A vast majority of the participants were women (83.9%) and were from nursing course (X^2= 53.518, p<0.001). Nearly one fourth of the students from the both groups agreed that they know persons with mental illness. Majority of the medical students (85.7%) than nursing were from urban background (X^2= 11.838, p<0.001).

Table 1. Chi-square analysis of the study population

Variables	Medicine (n=154)	Nursing (n=168)	Total (n=322)	Test value	p-Value
Age	20.87±1.23	19.57±1.62	20.23±1.57	F=37.59	0.001
Below 20	51 (33.1%)	121 (72.0%)	172 (53.4%)	48.879	0.001
Above 20	103 (66.9%)	47(28.0%)	150 (46.6%)		
Gender					
Male	49 (31.8%)	3 (1.8)	52 (16.1%)	53.518	0.001
Female	105 (68.2%)	165 (98.2)	270 (83.9%)		
Contact with mental illness					
Yes					
No	34 (22.1%)	36 (21.4%)	70 (21.7%)	0.020	0.497
	120 (77.9%)	132 (78.6%)	252 (78.3%)		
Residence					
Rural	22 (14.2%)	51 (30.4%)	73 (22.7%)	11.838	0.001
Urban	132 (85.7%)	117 (69.6%)	249 (77.3%)		

Table 2 demonstrates mean significant differences on subscales of ASMI questionnaire, between medical and nursing students. A significant difference was observed between medical and nursing students (t=2.996, p<0.001), as the mean score of separatism domain was higher among nursing students (27.54) compared to medical students (25.74). This finding indicates that medical students hold more positive attitudes than nursing in separatism domain. Similarly, medical students hold less stigmatizing attitudes (8.37) than nursing (t=3.055, p<0.05). Interestingly, no significant differences were observed between medical and nursing students regarding stereotyping and restrictiveness domains. However, nursing students were more benevolent toward persons with mental illness than the medical students (t=3.528,p<0.001). With regard to pessimistic prediction, medical students hold more negative attitudes (13.49) than nursing and statistically significant difference was found (t=4.604,p<0.001).

Table 2. Comparison between medical and nursing students regarding domains of attitude scale for mental illness

Subscales	Medicine (n= 154) M ±SD	Nursing (n= 168) M ±SD	t value	p-value
Separatism	25.74±5.49	27.54± 5.28	2.996	0.003
Stereotyping	11.61±3.01	11.54±3.02	-0.204	0.839
Restrictiveness	8.96±2.86	8.45±2.97	-1.578	0.116
Benevolence	17.00±4.91	15.00±5.22	-3.528	0.001
Pessimistic prediction	13.49±3.32	11.83±3.12	-4.604	0.001
Stigmatization	8.37±2.81	9.27±2.48	3.055	0.002

Table 3 reveals the mean ASMI scores for the six subscales with different socio-demographic variables of the participants. Women tend to be less restrictive (8.55) and more benevolent (15.52) towards persons with mental illness than men. Age found to be significantly affecting students attitudes in restrictiveness, benevolence, and pessimistic prediction domains. Students those were below 20 years of age were found to be less restrictive (8.34), more benevolent (15.27) and lesser pessimistic predictions (12.25) toward mental illness. Students from rural background showed less pessimistic predictions compared to participants from urban (11.71). Similarly, students those who had contact with mental illness demonstrated less restrictive (8.49) and more benevolent (15.51) attitudes toward persons with mental illness. However, no significant association was illustrated between medical and nursing students regarding their overall attitudes toward mental illness. Nonetheless, the number of nursing students (64.8%) with positive attitudes toward mental illness was slightly higher than medical students are (54.5%) (Table 4).

Table 3. Mean scores of domains of Attitude scale for mental illness with socio demographic variables

	Separatism	**Stereotyping**	**Restrictiveness**	**Benevolence**	**Pessimistic prediction**	**Stigmatization**
Gender	t =0.406	t =1.769	t =2.058*	t =3.432‡	t = -0.856	t = -0.381
Male (n=52)	26.96±5.69	12.25±3.06	9.46±3.12	18.17±5.69	12.26±3.55	8.71±3.09
Female (n=270)	26.62±5.41	11.44±2.99	8.55±2.87	15.52±4.96	12.70±3.27	8.86±2.60
Age	t =1.663	t = -0.437	t = -2.308*	t =-2.539*	t = -2.215*	t =1.050
<20 (n=172)	27.15±5.30	11.50±2.94	8.34±2.94	15.27±4.73	12.25±3.31	8.98±2.62
>20(n=150)	26.14±5.59	11.65±3.10	9.10±2.87	16.73±5.54	13.06±3.27	8.67±2.75
Residence	t =1.573	t =.165	t =.727	t =.481	t =-2.431†	t =0.350
Rural (n=73)	27.28±4.02	11.54±3.31	8.91±3.23	16.31±5.91	11.71±3.21	8.89±2.51
Urban (n=249)	26.50±5.80	11.58±2.93	8.63±2.84	15.85±4.94	12.89±3.30	8.82±2.73
Contact with mental illness	t =0.188	t = 1.426	t = 2.370*	t = 2.963 †	t =0.198	t =0.608
Yes (n=70)	26.57±5.15	12.02±3.11	8.49±2.92	15.51±4.95	12.70±3.35	9.01±2.92
No (n=252)	26.71±5.54	11.44±2.98	9.42±2.85	17.55±5.62	12.61±3.31	8.79±2.62

*p<0.05, † p<0.01, ‡ p<0.001

Table 4. Comparison of attitudes towards mental illness between Medical and Nursing students

Attitude	Medicine (n=154, 47.8%)	Nursing (n=168, 52.1%)	Total n=322	χ^2 value	*p*-value
Positive	84 (54.5%)	105 (64.8%)	189 (59.8%)	3.464	0 .067
Negative	70 (45.5%)	57 (35.2%)	127 (40.2%)		

Discussion

To our best of knowledge, this was the first study that compared medical and nursing undergraduates' attitude towards mental illness using the standardized questionnaire in various dimensions. The present study was unique in nature, since the sample of the present study comprised of the undergraduates, those completed theoretical and clinical exposure to Psychiatry. The present study found mixed opinions about mental illness as medical students hold attitudes that are more positive in separatism and stigmatization domain while nursing students were more benevolent and less pessimistic attitudes toward persons with mental illness.

In the present study, 83.9% of the sample was women and was from nursing course (98.2%). This findings could be due to nursing profession is women dominated in general. The mean scores of separatism (25.74) and stigmatization (8.37) domains were lesser in medical students compared to nursing students. This indicates that medical students hold attitudes that are more positive in these domains. These findings were inconsistent with a study that assessed the impact of Psychiatric curriculum on the attitude of Indian undergraduate medical students. The higher mean scores compared to the findings of the present study were observed in all the domains such as Separatism (21.8), Restrictiveness (14.8), Stigma (14.2), Stereotypy (13.4), and Pessimistic prediction (13.2), indicating negative attitudes toward the mental illness and the persons with mental illness.[13] Exhaustive research is available related to stigma and mental illness.[14] Further, persons with mental illness encounter stigma not only restricted to society, but also by the mental healthcare professionals.[15]

Though significant difference was not observed between medical and nursing students, they hold negative attitudes in the stereotype domain. Earlier research pointed out that health care professionals were not resistant to social prejudices.[16] Further, it was evident that nursing students had stereotypes and prejudices related to persons with mental illness beginning of their nursing course.[17] These findings could be due to lack of knowledge related to nature of mental illness. However, stereotype beliefs and social prejudices leads to stigma and discrimination of persons with mental illness. Negative stereotype attitudes among undergraduates toward mental illness are potential to influence therapeutic relationship between person with mental illness and health care providers. Hence it is an urgent concern to modify these negative stereotype attitudes among medical and nursing undergraduates since they are the primary health care providers.[18]

Nursing students in the current study hold more benevolent attitudes toward persons with mental illness compared medical students. While these findings concur with earlier studies from Southern Nigeria that found stigmatizing attitudes among medical students and interns,[19] inconsistent with previous research,[20] that observed benevolent attitudes that were positive, toward mental illness. On the other hand, these findings also support documented evidence that showed high benevolent attitudes among nursing students toward mental illness.[21] Similarly, nursing students were more positive towards treatment and reintegration of people with mental illness in to the society than students from medicine were. These results could be due to negative stereotypes and social prejudice they hold, hence they were unaware about rehabilitation of people with mental illness. However, nursing students in the present study were not undergone the psychiatry course, the rich clinical experience (begins with in few months) might have influenced them in developing positive, kind attitudes toward mental illness.

More women than men in the present sample were least restrictive and more benevolent attitudes toward persons with mental illness. These findings were congruent with a study among undergraduate nursing students that showed women participants were less authoritarian, more benevolent, and had more CMH (Community Mental Health) ideology than men.[22] In addition, abundant documented studies report that women were more tolerant, humanitarian, and flexible attitude towards mental illnesses.[23] However, these findings were contrary to a recent study conducted among medical students, demonstrated high restrictiveness among females than male participants.[24] nonetheless, few studies illustrated no significant differences between men and women attitudes related to mental illness.[25] On age wise analysis, participants aged below 20 years were found to be less restrictive (8.34), more benevolent (15.27) and lesser pessimistic predictions (12.25) toward mental illness. Though few studies[23] indicate that as age increases, decreased tolerance toward mental illness was observed among participants from Sweden, the present sample age ranges from 17-27 years. In the present study, student from rural background hold least pessimistic attitudes toward mental illness compared to urban participants. These findings were in support of previous studies.[26] These findings were contrary to an Indian study that proved more stigmatizing attitude towards persons with mental illness by the rural participants.[27] In support of earlier research,[28] present study also demonstrated, students those were familiar with people with mental illness hold least restrictive and more benevolent attitudes toward mental illness. Never the less, numerous studies among nursing[29] and medical students[30] revealed that there was a positive change in their attitudes towards persons with mental illness after completion of psychiatry course.

The present study has certain limitations such as small and convenient sample selected and cross sectional design made difficult to generalize the findings. Thus, future studies should focus on larger sample and comparative studies between the students after completion of psychiatry course, and qualitative approach such as focus group discussions to understand the multiple factors that influence the attitude of future health professionals toward mental illness. Despite of these limitations, the present study showed certain important findings to the educators and administrators in medical and nursing professions to target students with negative attitudes toward mental illness in specific domains.

Conclusion

Concisely, while nursing students were more benevolent and less pessimistic attitudes toward mental illness, medical students hold more attitudes that are positive in separatism and stigmatization domains. These findings have important implications in reviewing the current curriculum and adapting modern teaching methods that confront negative attitudes of future health professionals towards mental illness. Further, there is need for short educational interventions to inculcate positive attitudes among the students to face the challenges in order to provide quality of care and protect the human rights of these disadvantaged populations.

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Menopause, the beginning of aging for Chilean women: A qualitative study

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Menopause, the beginning of aging for Chilean women. A qualitative study

Objective. To develop the meaning of menopause of a group of post-menopausal women and their relationship with aging. **Methods.** Qualitative descriptive study on 15 Chilean women that completed a taped face-to-face in depth interview that were interpreted according to Krippendorff. **Results.** A qualitative content analysis revealed the presence of two themes: (a) Cessation of women´s reproductive stage and (b) a life transition to aging. **Conclusion.** Women perceived their menopause as the beginning of aging focusing on the end of fertility and the social connotation that this new role implies. Feeling old 10 years before the customary beginning of old age is an important starting point to be incorporated in women's health education.

Descriptors: aging; female; menopause; qualitative research.

Menopausia, el inicio del envejecimiento de las mujeres chilenas. Un estudio cualitativo

Objetivo. Desarrollar el significado de manopausia de un grupo de mujeres posmenopáusicas y su relación con el envejecimiento. **Métodos**. Estudio cualitativo descriptivo de las grabaciones de 15 mujeres chilenas que completaron una entrevista a profundidad, cara a cara. Los relatos se interpretaron de acuerdo con Krippendorff. **Resultado**s. Un análisis de contenido cualitativo reveló la presencia de dos temas: (a) Cesación de la etapa reproductiva de las mujeres y (b) transición de la vida adulta al envejecimiento. **Conclusión**. Las mujeres percibieron la menopausia como el principio del envejecimiento que se centraba en el fin de la fertilidad y la connotación social que implicaba este nuevo papel. Sentirse viejo 10 años antes del comienzo habitual de la vejez es un punto de partida importante para ser incorporado en la educación para la salud de la mujer.

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Descriptores: envejecimiento; femenino; menopausia; investigación cualitativa.

Menopausa, o inicio do envelhecimento das mulheres chilenas. Um estudo qualitativo

Objetivo. Desenvolver o significado de menopausa de um grupo de mulheres pós-menopáusicas e sua relação com o envelhecimento. **Métodos**. Estudo qualitativo descritivo das gravações de 15 mulheres chilenas que completaram uma entrevista a profundidade, cara a cara; os relatos se interpretaram de acordo com Krippendorff. **Resultado**s. Uma análise de conteúdo qualitativo revelou a presença de dois assuntos: (a) Cessação da etapa reprodutiva das mulheres e (b) transição da vida ao envelhecimento. **Conclusão**. As mulheres perceberam sua menopausa como o princípio do envelhecimento que se centrava no fim da fertilidade e a conotação social que implicava este novo papel. Sentir-se velho 10 anos antes do começo habitual da velhice é um ponto de partida importante para ser incorporado na educação para a saúde da mulher.

Descritores: envelhecimento; feminino; menopausa; pesquisa qualitativa.

Introduction

Currently the elderly population represents one of the population segments with the greatest growth in the world. According to the National Institute of Statistics,[1] in 2050, for the first time in history, the number of older persons in the world will exceed the number of young people. Worldwide, one of the challenges of an aging population is the feminization of aging.[2] Women perceive menopause as the beginning of aging.[3,4] Menopause is defined as the permanent cessation of menstruation; whether of a natural or surgical nature, the latter produced by the removal of the ovaries before the natural cessation of hormone function. Menopause is the milestone that clearly connects physiological and biological changes with cultural and social issues. Worldwide, the age of menopause is around fifty (50 and 52 years old) in Europe,[5] Australia[6] the USA[7] and in Chile.[8] Understanding the meaning of menopause and aging is relevant to promote healthy aging, not only from a physical perspective, but also from social and psychological aspects. There is a lack of research on the experience of Chilean menopause women and aging. The aim of this article is to develop the meaning of a group of post-menopausal women and their relationship with aging.

Methods

Research design. This study is a secondary analysis from a qualitative descriptive study[9] based on content analysis according to Krippendorff.[10] The original study explored the meaning of menopause, and one description was related to aging.

Participants and setting. All participants were drawn from a convenience sample of 15 Chilean Women recruited between June and July 2014 from an outpatient clinic in Santiago, Chile. Eligible participants were women who have lived the menopause period during the last twenty-four months or more, not including those who have had surgery menopause and/or early menopause.

Data collection. Women were informed about the study by a research assistant in the waiting room at the clinic during their routine medical appointments. Snowball sampling was employed to reach the number of participants who provided data that were saturated. Women interested in participating were referred to the principal investigator to check eligibility criteria and to obtain informed consent to participate. Then the women completed an audio taped face-to-face in depth interview in Spanish administered by 3 female nurse-midwife trained interviewers (the research team) in a private room at the clinic. Audio tapes were transcribed verbatim. The interviews were back translated to verify the accuracy of the quotations. The original interview was conducted in an open and exploratory way, using 5 open-ended questions: “What is the meaning of menopause to you? and this was followed by the next four questions: “In what ways did you face this stage? , “What were the needs of support/help during this period?”, “What were the positive aspects of this period?”, and “What were the negatives aspects during this period?”. This paper is focused on menopause and its connection with aging. In addition, women were asked basic demographic questions including age, number of children, partner, and age of menopause.

Data analysis. Tapes were transcribed verbatim and analysed by 4 qualitative researchers. Individual investigators performed preliminary secondary analyses of the data until categories were saturated and themes were generated as appropriate for qualitative inquiry.[11] Trustworthiness of the data was ensured through member checks, with the researchers discussing findings with 13/15 study participants, to verify that the themes identified reflected their experiences. Themes were identified and amplified using rich narrative data obtained during the interviews through discussion by the research team on a continuing basis.[12]

Ethical approval. All study procedures were approved by the Institutional Review Boards at the Pontificia Universidad Católica de Chile in Santiago, Chile and at the Southeast Metropolitan Public Health Service.

Results

The demographic characteristics of the women were between 55 and 71 years old. There were nine married women and two single, two divorced and two widows. For women with partners, the average time of living together was over thirty-four years. Five women did not have a partner and two of them did not have any children. The age of menopause ranged between 47 and 58 years and the time lived without menstruation ranged between 2 and 29 years. Two themes pertaining to the menopause is the beginning of aging were identified: Cessation of women´s reproductive stage and a life transition to aging. The menopause as the beginning of aging dimension refers to all the accounts where women identify the process of menopause as a particular manner and timing of aging focusing on the end of the reproductive life. Women feel that menopause is a milestone that must be faced and the last stage of the life. While their responses varied, all the study participants viewed menopause as a cessation of their reproductive life and a life transition to aging.

Cessation of women´s reproductive stage. Menopause connects women with leaving their fertility and therefore they need to deal with the inability to have children, which in some cases causes feelings of nostalgia for not being able to have children any more. In other words, the meaning of menopause for women is mainly related to the end of the reproductive life focusing on tasks related to reproduction and the childrearing stage:... *To me it [menopause] means that the adult part is over, a thing ... so I describe it ... childhood, youth, adult part comes later, when you are a mom, you have children, the children are grown, and then comes the menopause as, it’s like seniors ... you know?* ... [Interview 4]; *I cannot have more children ... I’m happy with my only daughter I had, but I feel sad about the productive stage, what do you call that? The reproductive stage of women* [Interview 8].

A life transition to aging. The results show that women identify menopause as an age at a particular time; women felt that menopause is a milestone that places and must face the final stage of the life, the aging part of life. Reinforcing the concept of aging, there are accounts that emphasize the perception of women that identify the milestone of menopause as the beginning of the aging stage in a woman’s life: *For me to get older, they are women that want to believe that they are young... There are women who want to live in an eternal youth. It is not possible because we have to live this process we have to get older. The aging process entails many things, and one of those things is the menopause* [Interview 2]; ... *now comes the aging, one goes down, then it has affected me but ... I’ve been preparing myself for this period but now that I turned 60 it has affected me a lot*...[Interview 5].

Discussion

Menopause is a normal stage in the life cycle of women, marked by the cessation of ovarian function, however beyond this biological fact, it is important to understand women´s meaning of this period and its connection with aging. Women perceived their menopause as the beginning of aging focusing on the end of fertility and the social connotation that this new role implies. In Latin cultures the woman's role is closely linked with the concept of motherhood and it is also associated with the parenting role. No longer having the biological status of getting pregnant may influence women as a female gender role to play in Latino society. This difference may be due to what role the female gender plays in different cultures. For example, the end of fertility is perceived as an aspect of maturity in which women recognize the independence of their children as a result of the cessation of the task of nurturing and, therefore an aspect that influences their perception of freedom[13] and to refocus attention on themselves.[14] Relating to the life transition of aging, this research developed a link between menopause and conceptualization, by women, on the onset of aging. These results are consistent with other studies, where women from different cultures and countries identify with the biological milestone of menopause as a sign of aging[15-22] recognizing aging with positive and negative values.[23]

Interestingly, the significance of passing to another stage in other cultures has been a synonym for advancement, as role changes, you have more time[24] and gain respect in society[25] older woman are given a position of having greater wisdom, knowledge and ability to hold their own opinions regarding younger women.[26] Post-menopausal women are more competent[13] and live a privileged status in some societies;[27] they are able to educate younger women[19] and have more self-confidence.[20] The transition to another stage, and thus the start of old age, becomes a prize,[25] whereas in this study these points are not reflected. The effect of menopause in women's lives may thus be more symbolic than biological, expressed as a form of anticipation of old age.[28] Feeling old 10 years before the customary beginning of old age is an important starting point to be incorporated in women's health education. This situation brings up the questions for nursing related to anticipating women's care in this period of life targeting women's needs about menopause not only in the biological aspects of this period but also incorporating psychological and social aspects of this period of women`s life. Indeed, changes in women´s quality of life are related to their perception of aging;[29] therefore, it is important to address well what women's feelings of getting older at 50 years old are. In conclusion, there is a need to recognize the special health needs of women beyond the reproductive age, through strengthening and reorienting the public health services at all levels starting from primary healthcare with adequate referral linkages to other levels. Discussions between healthcare providers and menopausal women should include the provision of information that will be helpful for women making this life transition, focusing on menopause as a wellness experience.

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Original article

Preparing for post-discharge care of premature infants: Experiences of parents

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Preparing for post-discharge care of premature infants: Experiences of parents

Objective. The study sought to describe the experiences of parents of premature children regarding discharge from the neonatal unit. **Methodology.** This was a qualitative study, in which 10 semi-structured interviews were conducted with parents of premature infants upon discharge from the neonatal unit. Data were analyzed following principles of grounded theory; open and axial coding was performed. **Results.** The following categories emerged from the analysis of the information: *feelings experienced upon discharge,* and *experience of the discharge as a process*; the latter category clearly identified barriers and facilitators. The results highlight that the parents experience ambivalent feelings; joy is mixed with the fear of caring for a premature child at home. **Conclusion.** For parents, discharge of premature children from the neonatal unit is a complex process during which conflicting feelings are experienced. Nursing must develop strategies to involve parents early in the care of their children during the hospital stay.

Descriptors: neonatal nursing; infant, premature; intensive care, neonatal; patient discharge; parents.

Preparación para el cuidado frente al alta de bebés prematuros: Experiencias de los padres

Objetivo. Describir las experiencias de los padres de niños prematuros frente al alta de la unidad neonatal. **Metodología.** Estudio cualitativo. Se realizaron 10 entrevistas semiestructuradas a padres de niños prematuros de la unidad neonatal. La información se analizó con los referentes de la teoría fundamentada. Se realizó codificación abierta y axial. **Resultados.** En el análisis de la información surgieron las siguientes

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categorías: *sentimientos experimentados al momento del alta* y *experiencia del alta como un proceso.* En esta última categoría se identificaron de forma clara barreras y facilitadores. Se destaca en los resultados que los padres experimentan sentimientos ambivalentes, pues la alegría se mezcla con el temor de cuidar a un hijo prematuro en el hogar. **Conclusión.** Para los padres, el alta de los niños prematuros de la unidad neonatal es un proceso complejo en el que experimentan sentimientos encontrados. Enfermería debe desarrollar estrategias para involucrar tempranamente a los padres en el cuidado de sus hijos durante la hospitalización

Descriptores: enfermería neonatal; prematuro; cuidado intensivo neonatal; alta de paciente, padres.

Preparação para cuidados pós-alta de prematuros: Experiências de pais

Objetivo. Descrever as experiências dos pais de crianças prematuras perante a alta da Unidade Neonatal. **Metodologia.** Estudo qualitativo. Se realizaram 10 entrevistas semiestruturadas a pais de crianças prematuras na alta da unidade neonatal. A informação foi analisada com os referentes da teoria fundamentada, se realizou codificação aberta e axial. **Resultados.** Na análise da informação surgiram as seguintes categorias: *sentimentos experimentados no momento da alta,* e *experiência da alta como um processo,* nesta última categoria se identificam de forma clara barreiras e uns facilitadores. Destaca-se nos resultados que os pais experimentam sentimentos ambivalentes, a alegria se mistura com o temor de cuidar a um filho prematuro no lar. **Conclusão.** Para os pais, a alta das crianças prematuros da unidade neonatal é um processo complexo o qual experimentam sentimentos encontrados. Enfermagem deve desenvolver estratégias para envolver precocemente aos pais no cuidado dos seus filhos durante a hospitalização

Descritores*:* enfermagem neonatal; premature; terapia intensiva neonatal; alta do paciente, pais.

Introduction

According to figures from the World Health Organization published in 2012, preterm births represent 11.1% of all live births globally and large differences exist between countries according to their level of development, with Colombia reporting 8.8%.[1] Prematurity brings along a high risk of early and late mortality and morbidity[2] that demands specialized care within a neonatal unit. The continuity of care at home once the infant is discharged home is of great concern to the health staff, given that proper care is needed to ensure the wellbeing and adequate development of premature infants. It has been identified that after hospital discharge of premature children, a series of events take place in the home that can impact negatively on the child's wellbeing.[3-6] Therefore, discharge from the neonatal unit is an important process that involves, among other aspects, evaluation of the parents' skills to care for their premature infant. It has been found that inexperience and lack of skills to care for premature child at home are related to a higher number of readmissions[7] and to feeding difficulties, one of the most common problems in preterm infants after discharge.[8] The hospital discharge of premature infants is thereby a critical event for the parents who requires close accompaniment, where participation from nursing professionals is highly relevant.[9,10] The care skills of the parents must be assessed so that they can be guided at the time of discharge to strengthen their trust and security in their care of their infant once they get home.[11]

Although health care staff have previously identified barriers and facilitators which have provided better understanding of the needs of parents of premature infants upon discharge;[11] it is necessary to also learn about the parents' experiences to better understand their needs and how they can be best accompanied during the discharge process. This work seeks to contribute to the generation of strategies to enhance the discharge preparation process for parents of premature infants, to reduce their stress and enhance their sense of security and trust upon their infant's discharge from the neonatal unit. Through knowledge of the parents' experience upon discharge, we also hope to impact positively on the quality of care of preterm infants once home.

Methods

A qualitative descriptive study was conducted; information was gathered between September and December 2014 at a level III complexity neonatal unit in the city of Medellín. Data were collected through semi-structured interviews. Parents were interviewed close to the moment of their infant's discharge. Once the parents were informed of the possibility of discharge or upon confirmed discharge, they were informed of the study and its purpose. After voluntary decision and signing of the informed consent, the interview was scheduled with the parents. For parents whose children were discharged on the day of the interview, the corresponding administrative procedures were guaranteed and prioritized. The interview was only conducted when the parents were calm, had sufficient time, and were emotionally ready. A comfortable and quiet place within the unit was sought for the parents, where they could be close to their infants and the health staff, and be available to respond quickly if they were needed.

The interview inquired about their lived experience regarding discharge from the neonatal unit. The interviews were audi-recorded by the researchers, transcribed textually by experienced research assistants and then validated by the researchers, and – finally – analyzed as of the references from founded theory.[12] The number of interviews was determined by data saturation,[13] that is when in the analysis of the interviews new data or relationships did not emerge among the categories. A total of 10 interviews were carried out, each lasting approximately one hour; only one interview was conducted with each parent (mother or father). The interviews were conducted by the researchers, who are nurses with diverse expertise in qualitative research and experience in neonatal care, who applied in full the ethical criteria required for the study.

Ethical principles corresponding to health research were adhered to. To that effect, the study was approved by the institutional ethics committees. Participants were asked to sign the written informed consent and were guaranteed confidentiality and anonymity. They were informed that they could withdraw from the study and stop the interview if they so desired without any prejudice against them or their infant An exploratory phase was carried out to allow refining of the interview guide, the approach to the study site, and rapport with the unit staff in order to enhance their collaboration and to better understand the dynamics and norms in the neonatal unit.

Data was analyzed with grounded theory[12] as reference; open and axial coding was performed until the categories were arrive at: *feelings experienced upon discharge* and *the experience of the discharge as a process.* The methodological rigor of the research was based on criteria of confirmability, credibility, and auditability. Conversations were held with experts on the theme in other similar contexts. Likewise, the results were shared with the neonatal unit staff to validate them. Triangulation among the researchers was conducted throughout the analysis process, and was enriched by their diverse experiences; all have worked in different contexts and institutions, with different levels of experience in the area and from different schools of research.

Study participants were parents (mothers or fathers) who had a preterm infant hospitalized in the neonatal unit and who were near the time of discharge. The study excluded fathers and mothers with training in the health field. Nine mothers and one father participated in the study. Despite having only one father participant, his experience in relation to the aspects explored is congruent with the experiences of the mothers, hence, his data was included in the analysis. The youngest mother was 18 years of age at the moment of the interview and the eldest was 31 years old. Six of the participants had incomplete secondary studies, two had technical level education, and one was undertaking university studies. The most common occupation among the participants was domestic work; the participating father, who did not finish secondary education, worked as a field hand and/or construction and did not report formal employment. Three mothers were employees (drug store manager, executive secretary, industrial sewing machine operator), and one of them was a student. Only one of the participants did not report belonging to any religion; one was Christian, and the remaining participants were catholic.

Four of the participants were primiparous; one gave birth to twins; three had a previous child, and one had three other children including a previous preterm infant. Two mothers had no support from the fathers of their infant and the rest reported having support. In all cases, the participants had support from at least one relative. In general, study participants had low socioeconomic level. The number of days of hospital stay of the newborns were variable, thus, the shortest hospital stay was three days and the longest was four months. Length of stay was directly related to weight at birth, with the lowest at 790 g and the highest at 2 440 g.

Results

From analyzing the information obtained from each of the interviews, substantive codes were identified and grouped to form the following emerging categories: *feelings experienced upon discharge*, and *experience of the discharge as a process*; the latter category clearly identified barriers and facilitators.

Feelings experienced upon discharge

When asking the parents about their experience upon discharge, their feelings initially emerged as an aspect that influenced their experience. The feelings expressed by the participating parents were ambivalent, in general, denoting feelings of joy but in turn, some feelings of fear regarding the care and fragility of their infant. Joy mixed with the fear of caring for their premature child at home. The parents stated feeling "happy" and, in general, that was the feeling preceding the expression of other emotions. Feeling "happy" for the participants was related with relief and the joy that their child's critical health stage had been overcome; going home was for them evidence that their child was well: *it will be lots of joy because they give you your child in good health…* (P4); *because he was discharged, which means he is well…* (P1).

In general, the participating parents experienced other feelings besides feeling happy, such as concern and fright, attributed to the fragility of the infants due to their condition of prematurity: *Scared… too much responsibility, what if I drop him, they are like glass, oh no! What horror! They are very fragile* (P2). "Fright", understood in this context as an expression associated with fear, originated from the awareness parents have upon discharge that prematurity makes their children more vulnerable. The "fright" that parents say they felt upon discharge had to do with the possibility of their child getting sick, given that the prematurity increases health risks compared to other infants born at full term: "*Scared… because he is preterm, because he might get sick"* (P1). This possibility also scared them because it may imply returning to the hospital and a readmission for another hospital stay, a situation not desired by any of them.

Given the possibility of their infant getting ill, there was the added concern of not being able to recognize early signs and symptoms that may suggest illness. In contrast with the environment in the neonatal unit, where children are cared by the health staff and have clinical monitoring, the home confronts parents with the fear of not recognizing an illness in their child, given that they will not have equipment to monitor their infant or support from the health staff. One aspect that helped parents to minimize their fear is experience in caring for other children. The mother who had four children and prior experience caring for a preterm infant expressed tranquility at discharge:

I am already used to dealing with my children, so nothing worries me... (P4). This expected, important role of experience was reinforced by participants who expressed that, even though they did not feel totally confident for care at home, once there they will receive support from others who have experience in caring for small children. This element helped minimize their fears: *my uncle's wife, she also has children, so that will help me a lot* (P1).

Trust in one's ability to provide basic infant care such as bathing, feeding, and changing diapers depended, to a large extent, on experience acquired through practice. Having previously performed these caregiving skills gave the parents greater security upon discharge. This point related to the participation in care that the nursing staff assigned to the parents during the hospitalization and their involvement with caring for their infant before returning home. In addition, upon discharge, the parents felt "relief" at the possibility of receiving follow-up care. The participants stated that they had been informed that their infant will be included in the "kangaroo plan", which is a program which provides close and continuous follow-up of preterm infants. The families attend consultations within the plan; in this setting the infants are evaluated and the families are guided according to any identified needs. The participants, although unaware of this program untill discharge, saw in it a possibility of accompaniment, during which they can have issues solved, validate their care, and have specialists evaluate their infant's state of health. In their experience as parents of preterm children, knowing that they will have access to monitoring programs after discharge gave them trust and security. This mitigated their fear, which was one of the principal feelings experienced by parents in the discharge process.

The experience of the discharge as a process

Although the hospital discharge for the participating parents was a special moment giving rise to emotions and feelings, parents recognized it as a process as they stated that they have been preparing for the discharge. Within the preparation process, they identified the need to learn a series of tasks in order to care for their premature child at home. During the discharge preparation process, the parents indicated that the staff taught them aspects related to caring for their children, highlighting basic care skills, like breastfeeding, changing diapers, and bathing their child. *I have been taught to feed him, bathe him, and change him, and also that the child must be supported…* (P3). In regards to how they were taught, the mothers and the father stated that they were first shown how to do things and then they had to perform the task while being evaluated on how they were doing things: *yes, they have you bathe and change the infant* (P4), *I watched them bathe two babies and then I bathed mine, the nurse watched me do it* (P7).

This category confirms that parental bonding was promoted through supervised direct care within the unit, as a strategy to prepare for care at home. The experience of providing direct care was identified by the parents as a helpful element to obtain greater trust and diminish fears upon discharge. With respect to who taught them how to care for their children once home, the participants viewed nursing assistants as the first line of preparation, however, they unified the nursing staff by not distinguishing nurses with different level of training or functions. Those who distinguished between levels of nursing viewed the primary work of professional nurses to be communication: *they also kept each other informed, even when one arrives in the morning, they reported on what had occurred, or what tests had been run and for what reason* (P6). The role of the medical staff was to provide information with respect to more critical health issues, and to ask whether parents have received adequate training prior to the discharge. *Yesterday, the physician who was here spoke to me, he asked me about caring for my child… I told him that I've had babies with low birth weight, and he said, then there is no problem I will discharge the child tomorrow if you already know about that* (P4).

At this point, it is possible to establish that the parents identified the participation of all members of the health care team in their process of preparing to care for their children at home, with different team members playing interrelated and complementary functions. In addition, the parents described barriers and facilitators to the process of preparing to care for their children at home.

Barriers

Socioeconomic difficulties were described as barriers to the preparation process for hospital discharge. Coming from far away, staying with relatives, being away from their familiar surroundings, having to leave their other children in the care of relatives or others, places a high emotional burden on the mothers and diverts their attention: …I cried practically day and night thinking of my children back home. It wasn't so much for my baby, but for the others I had back home (P4). The economic difficulties of the parents was an obstacle to continuous accompaniment of their infants in the NICU and, hence, the teaching opportunities for care at home were limited. The economic support from close friends or relatives became a factor that facilitated the preparation for hospital discharge: So, you get collaboration from some people to get money for travel expenses or to get something to eat because sometimes you go hungry here all day and having even if it is only something to drink, thank God my family has helped me (P1).

*The parents expressed that is was easier for maternal participation, as fathers had limited presence and little participation in the discharge process because of work, as they were the economic providers for the families . …my husband did come on weekends, on Saturdays when he left work early, and Sundays were sacred for him to come and kangaroo her (P6). The one father who participated in the study was able to be present during the whole hospitalization process and upon discharge because he was unemployed at the moment of the child's hospital adm*ission and had economic support from his family.

All the participants also identified as a barrier to the hospital discharge preparation process, restriction from participation of other significant members of the family who would support home care: *For example, in my case, my mom will continue caring for my baby, she should have been aware of the care the baby needs. I would have liked that, now I have to talk to her about the education I received* (P6). Other difficulties expressed by some of the mothers were associated with personal and attitudinal factors, which limited their interaction and the asking of questions: *I am shy, I haven't asked! Yes, I haven't asked either because I imagine that if I ask obviously they will answer, sometimes one is somewhat shy* (P1). This finding demonstrates that attitudinal, personal, and cultural characteristics interfere in the process and must be considered upon discharge in order know the parents' reality and ensure understanding of the guidance given for care at home. Likewise, empathy and an atmosphere of trust are fundamental for parents to openly express their fears.

Facilitators

The mothers and the father who participated in the study, expressed good communications with the staff as a facilitator of the discharge preparation process. *…I felt it was all fine, they were very nice and everything, very kind to deal with, they are not bad tempered. They are very patient, they take care of you and everyone* (P3). Another facilitator for the mothers and the father interviewed was the educational material distributed, mainly that having to do with warning signs and written information on caring for their children at home: *…they gave me a booklet that had to do with the warning signs and those for which we shouldn't be worried, so clearly, when you read this you understand more about the child* (P4). Regarding support groups, the mothers and the father interviewed described that space for interaction with other parents helped give them perspective on their own situation and allowed them to talk about their lives, which was positive for them: *we would talk a lot, most of all about our families, about the families and their* *issues, about my issues. I got along well with those mothers. Super well* (P8).

Another aspect identified as a facilitator for discharge preparation was the opportunity for telephone contacts with the unit nurses after discharge, which offered the mothers and the father interviewed the possibility of receiving reassurance for their doubts when needed. That placed them at ease when leaving the unit, becoming a form of support for them when faced with caring for their children in their homes: *she told me: if anything, call us right away, they gave me the phone number in case something came up I could call them to get explanations, so I felt more secure, I felt I could call them for them to explain things about the baby* (P1). Table 1 presents a summary of the categories that account for the experiences lived by the parents participating in the study:

Table 1. Experiences of parents of preterm children upon discharge from the neonatal unit

Categories	Description
Feelings experienced upon discharge	**Joy**. Associated with overcoming a critical health phase and the idea that their child is fine and, as such, may go home **"Fright".** Due to the vulnerability condition of prematurity, fear of not recognizing when their child is ill and of re-hospitalization. Two aspects helped to diminish fear**:** *their own experience,* or that of people close to the family, of caring for infant; and *having follow up* after discharge, because it gave them the possibility of having professional accompaniment once they are in their homes.
Experience of the discharge as a process	**Barriers** • Living far from the place of hospitalization. • Staying at a relative's home during the hospitalization process. • Leaving other children in the care of relatives • High costs of displacementRestrictions on participation of other family members in the preparation of the premature child (mothers, sisters, aunts)Socio-cultural aspects and individual attitudinal characteristics **Facilitators** • Good communication with the health staff • Provision of educational materials • Interaction with other parents in the same situationTelephone service to call the nurses from the unit if they have doubts after discharge • Being accompanied to provide their infant's basic care prior to discharge

Discussion

Parents experience a series of emotions and feelings during the discharge of their preterm children. The first category that emerged in the study had to do with feelings at the time of discharge. Participants expressed feelings of joy, given that they were waiting for the moment when they would go home with their child; yet all commonly felt fear due to the vulnerability associated with their child's prematurity. This finding is consistent with other studies[12,15,16] which also report that parents perceive a preterm child has having a higher risk of being ill and thus require special care, generating fear upon discharge. Parents distinguish between caring for a full-term versus and a preterm infant and express that prematurity makes them fragile and dependent on special and different care, a finding also described in other studies with similar populations and purposes.[17]

Clarification and understanding of this perceived greater vulnerability associated with prematurity can guide the nursing staff and the health team in charge of caring and preparing parents for discharge, as this can lead the parents to more effective care. Other aspects that must be considered during the hospital discharge process, according to the study participants, relate to the parents' attitudinal and cultural factors, which can limit communication and understanding of the guidelines for care of their infants at home. It is necessary to assess the personality and specific needs of the parents.[11,18] Regarding fathers, the participants expressed a scarce presence during the hospitalization of the preterm infant due to work responsibilities, as father have the role of economic provider and family support. These results are consistent with previous studies in which the fathers are attributed with the traditional function of supporting the family, which limits their participation in the discharge preparation process and leads health professionals to focus on the mothers.[18,19] In addition, it reinforces the mother's role as principal caregiver that prevails in our culture.

A main point of interest in this study is the role of experience and practice. According to the parents, caring for their infant prior to the discharge increases the level of sufficiency or competence for care at home. Parents understand that the more they provide direct care for their infant in the neonatal unit and have greater contact with them, the more confidence they will have to care for the infant at home. The value of practice or experience for effective care of preterm children at home has been described in similar studies.[20,21] Through their experiences, parents describe the discharge as a process, characterized by education from the health staff on a series of necessary skills to care for their infant at home. This finding establishes that for parents the hospital discharge is a process and not a single moment isolated from the hospitalization experience. In this sense, participants identified some barriers and facilitators related to the discharge process. The following were considered barriers: living far away from the hospital; having to live with relatives during their infant's hospitalization; having to leave their other children in the care of family in order to care for their hospitalized infant; the high costs of displacement; restrictions on the participation of other family members in the preparation of the premature child (mothers, sisters, aunts); and socio-cultural aspects and individual attitudinal characteristics.

On the other hand, family accompaniment, the option of calling the staff at the unit in case of doubts, and having a follow-up service such as the kangaroo plan were highlighted as facilitators. These, according to participants, gave them confidence that they will receive support once they leave the neonatal unit. This type of accompaniment offered to the parents, once they leave the hospital, is an element of great importance for parents of preterm children.[22]

The findings reinforce the importance of establishing institutional monitoring programs that facilitate the transition to home. It has been found in the literature that these types of programs impact positively on the number of readmissions and on parent satisfaction.[23] Similarly, it is important to make efforts to involve family members and other potential caretakers at home, such as grandmothers and aunts. in the discharge preparation process,[24,25] thereby enhancing quality of care at home by other caretakers. The results obtained provide direction for strengthening the preparation process for caring of preterm infants at home, which impacts upon the experiences of parents upon discharge, upon their emotions and feelings, as well as on their trust and security in caring for their children. In conclusion, participants experience during discharge from the neonatal unit a moment that blends feelings of joy and fear associated with their children's condition of prematurity. From the parents' experiences, participation in caring for their children while in the unit allowed them to feel better prepared for care at home, which is why it is quite important to promote participation by parents in caring for their children from the start of the hospitalization process and once the preterm infant's health condition permits. Lastly, the hospital discharge is a process with barriers and facilitators that the nursing staff and health care team must value and recognize within the framework of the diverse social and cultural contexts from which the parents and families come.

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Quality of life of women with pre-and post-operative breast cancer

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Quality of Life of Women with Pre-and Post-Operative Breast Cancer

Objective. The objective of this study was to evaluate the Quality of Life (QOL) at the pre and postoperative time of women with breast cancer submitted to surgery and to associate it with the socioeconomic class. **Methods.** This is a longitudinal study, performed at Santa Rita de Cássia Hospital (HSRC), Vitória - ES, Brazil. The EORTC QLQ instrument C-30 and the EORTC BR-23 were used to measure the QOL of the interviewees before and after breast surgery. **Results.** A population composed of 87 women, 42.5% were 60 years old or more. The socioeconomic condition C was identified as predominant among the interviewees, covering 62% of the sample. Women´s QOL in the preoperative period was better in the Physical Function dimensions for class C and D; and the Emotional was better for class B. There was improvement in QOL after surgery for Body Image in class C, and for Social

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Function in B. Evaluating all social classes, only the dimensions Cognitive Function and Future Perspectives improved in the postoperative period. **Conclusion.** The quality of life of women after breast surgery worsened in most of the studied dimensions, evidencing the need for an interdisciplinary work dedicated to the recovery and rehabilitation of these patients.

Descriptors: quality of life; breast neoplasms; women's health; nursing.

Calidad de vida de mujeres con cáncer de mama en pre y postoperatorio

Objetivo. Evaluar la calidad de vida en los momentos antes y después de la cirugía en mujeres con cáncer de mama sometidas a tratamiento quirúrgico y su asociación con la clase socioeconómica. **Métodos**. Estudio longitudinal, realizado en el Hospital Santa Rita de Casia (HSRC), Vitória - ES, Brasil. Se utilizó el instrumento EORTC QLQ C-30 y la EORTC BR-23 para medir la calidad de vida de las participantes antes y después de la cirugía de mama. El criterio de clasificación económica establece la división: A1, A2, B1, B2, C1, C2, D y E, siendo, A1 la mayor renta. **Resultados**. El estudio incluyó 87 mujeres, el 42.5% mayores de 60 años. Se identificó como predominante en las participantes la condición socioeconómica C (62%). La calidad de vida de las mujeres en el preoperatorio fue mejor en la dimensión de Funcionamiento Físico en las clases C y D, y en la Emocional en la clase B. Hubo mejoría en la calidad de vida después de la cirugía de la Imagen Corporal en la clase C, del Funcionamiento Social en B, y del Funcionamiento Cognitivo y de las Perspectivas de Futuro en todas las clases sociales. **Conclusión.** La calidad de vida de las mujeres empeora después de la cirugía de mama en una parte de las dimensiones estudiadas, lo que evidencia la necesidad de un trabajo interdisciplinario dedicado a la recuperación y rehabilitación de estas pacientes.

Descriptores: calidad de vida; neoplasias de la mama; salud de la mujer; enfermería.

Qualidade de Vida de Mulheres com Câncer de Mama no Pré e Pós-Operatório

Objetivo. Avaliar a Qualidade de Vida no momento pré e pós-operatório de mulheres com câncer de mama submetidas à cirurgia e associar à classe socioeconômica. **Métodos.** Estudo longitudinal, realizado no Hospital Santa Rita de Cássia (HSRC), Vitória – ES, Brasil. Utilizou-se o instrumento EORTC QLQ C-30 e o EORTC BR-23 para mensurar a QV das entrevistadas antes e após cirurgia da mama. O critério de Classificação Econômica estabelece a seguinte divisão: A1, A2, B1, B2, C1, C2, D e E, sendo, A1 a maior renda. **Resultados.** O estudo incluiu 87 mulheres, 42.5% apresentaram 60 anos ou mais. Identificou-se a condição socioeconômica C como predominante entre as participantes (62%). A QV das mulheres no pré-operatório foi melhor nas dimensões Funcionamento Físico para a classe C e D; Emocional para a classe B. Houve melhora da QV após a cirurgia para Imagem Corporal na classe C, e para Funcionamento Social na B. Avaliando todas as classes sociais, somente as dimensões Funcionamento Cognitivo e Perspectivas Futuras melhoraram no pós-operatório. **Conclusão.** A qualidade de vida das mulheres após a cirurgia da mama piorou uma parte das dimensões estudadas, evidenciando necessidade de um trabalho interdisciplinar dedicado à recuperação e reabilitação dessas pacientes.

Descritores: qualidade de vida; neoplasias da mama; saúde da mulher; enfermagem.

Introduction

Global estimates pointed to breast cancer as the second most common type of cancer in the world (1.7 million), being second only to lung cancer (1.8 million), and it is the first most common among women (25.2 %). In 2012, it was estimated an incidence of 152 thousand cases of breast cancer, followed by cancer of the cervix and intestine. The magnitude of the problem is clear.[1] According to the National Cancer Institute (INCA), the number of new cases of breast cancer estimated for the biennium 2016-2017 in Brazil is 57,960, in the same period, the Southeast Region estimates 29 760 new cases and 1,010 of them will happen in Espírito Santo, where the incidence of breast cancer is 53.85 cases per 100 000 women. In the capital, Vitória, where the incidence of breast cancer is 77.86 cases per 100 00 women, 140 new cases are estimated.[2]

From the beginning, the treatment of breast cancer should be conducted by an interdisciplinary team to meet all the needs that the patient may have. Nursing plays an important role when articulating with the different professionals and in such a delicate and fragile moment seeks to provide the best assistance, clarification of doubts and reduction of insecurity.

Surgery, radiotherapy (for locoregional treatment), hormone therapy and chemotherapy (for systemic treatment) are among the most used therapeutic modalities. Each stage of treatment has its peculiarities and adverse reactions that can increase the level of stress of the woman, which may influence her QOL.[3,4] Quality of Life was defined by the World Health Organization as "the individual´s perception of their position in life, in the context of culture, expectations, standards and concerns" that is QOL can only be evaluated by the person.[5]

Although it is a terminology widely used in daily life, there is a difficulty in obtaining a consensus about its concept, since it is linked to the fact that it is subjective and difficult to conceptualize.[6] Subjectivity, individual perception, feelings and their health conditions can affect their QOL.[7] The socioeconomic level is directly related to this perception, for example, women in more favorable economic classes have higher QOL scores for the physical[7] and social[8] dimension and may face problems and sequels resulting from the treatment of breast cancer more successfully, as it may have more access to psychological support and better housing conditions,[7,8] as well as access to different sites that do not refer to breast cancer and offer more leisure opportunities and social coexistence.[8] The low socioeconomic level generates anxiety and fear, negatively impacting QOL, family dynamics, socio-affective network and the quality of the treatment to which these women are subjected.[9]

Considering the thematic as a relevant public health problem, it is sought the best understanding regarding the life changes presented by the woman affected by this cancer and submitted to surgery, and the impact on their general quality of life, and according to their social class. For this, it is important that issues related to the impact on the physical dimension (such as post-surgical limitations), the psychological dimension (anxiety, fear, depression, faith) and sexuality dimension (women sometimes feel attractive, less feminine) can be studied in depth, searching for basis for decision-making and direction of situations, aiming to help these women to overcome stigmas and manage limitations. Given the above, the objective of this study was to evaluate the Quality of Life at the pre and post-operative moments of women with breast cancer submitted to surgery and to associate it with the socioeconomic class.

Methods

This is a longitudinal study, carried out at the Ylza Bianco outpatient clinic of the Santa Rita de Cássia Hospital (HSRC), maintained by the Feminine Association of Education and Fight against Cancer (Afecc) - Vitória - ES. HSRC is a philanthropic entity recognized throughout the state as a reference in cancer treatment, and it also offers general specialties. The population was composed of 87 (eighty-seven) women diagnosed with breast cancer and who underwent quadrantectomy or mastectomy in 2012 at HSRC. The inclusion criteria included women who were 18 years old or older, who had a diagnosis of breast cancer without previous treatment, and who were in the preparation phase for tumor removal surgery.

The women were recruited by the psychology team, through active search using the hospital´s surgical procedures agenda. Preoperative groups were performed at least 15 days before the surgical procedure and a maximum of six patients, in which health education was performed to prevent postoperative complications, as well as wound care and the teaching of rehabilitation exercises.

The meetings were held on two Wednesdays of the month, and had the support of a multi-professional team, with a nurse, psychologist, social worker, pharmacist, physiotherapist, and dentist. After the group, the women who met the inclusion criteria were invited to participate in the study, signing the informed consent form.

The data were collected by a research nurse during the months of May to December 2012, at the Ylza Bianco Ambulatory, where the questionnaires were applied in two moments: before surgery (moment 1) and in the post-surgery (moment 2), when the women attended the clinic to remove the incision stitches. The late postoperative period is the period preceding the 15th day of the procedure;[11] no woman was evaluated before this period. On average, the first moment was separated from the second by the minimum interval of 30 days. These two moments were chosen to understand what limitations and how the woman saw her way before the intervention and the short-term changes from the surgical procedure affected her quality of life. Data were collected on social and demographic characteristics to categorize the respondent´s life situation. The socioeconomic class (CSE) was evaluated by possession of consumer goods and education of the head of the family, according to the Brazilian Economic Classification Criteria, which establishes the following division: A1, A2, B1, B2, C1, C2, D and E, where A1 is the highest income and E is the lowest income.[12] The objective of this procedure was to classify the social stratum of the participant, considered as a socio-demographic variable, and used in a study to evaluate the quality of life.[7]

The instrument used to measure the QOL of the interviewees was EORTC QLQ C-30 and EORTC BR-23. The first instrument is a general quality of life questionnaire, specific for cancer patients and it has been validated for Portuguese by Pais-Ribeiro, Pinto, and Santos.[13] It consists of thirty functional questions (physical, limitations, emotional, cognitive and social), and 3 symptom scales (fatigue, nausea, vomiting, and pain), a global scale of health status, 6 simple items assessing common symptoms to general cancer patients (dyspnea, insomnia, constipation, diarrhea, loss of appetite, financial difficulties). In this study, the following variables were evaluated: Physical Functioning, Functional Limitations, Cognitive Functioning, Emotional Functioning, Social Functioning, Financial Difficulty, Global Health Status.

The second instrument is a specific module for breast cancer, which was translated and validated in 2007, published in 2013,[14] and composed of 23 questions divided into three groups. The first group investigated secondary symptoms to systemic therapy, so they were not evaluated. The whole second group was used, integrating: Sexual Function, Sexual Pleasure, Body Image and Future Perspectives, and the third group was used the Symptom in the Arm dimension.

From questions 1 to 28 and 31 to 53 the woman could choose: 1 = No, 2 = A little, 3 = A lot and 4 = Very much. In questions 29 and 30, there was a scale from 1 to 7, where 1 = poor and 7 = optimal. Scores were calculated according to the norms established by the EORTC, and the higher scores would indicate a better quality of life on the global health and functional scales and the smaller scores would indicate a better quality of life on the scale of symptoms.[15]

The data were organized in the Microsoft Office Excel 2007 for Windows program and analyzed through the Statistical Package for Social Sciences (SPSS), version 20.0. The non-parametric Wilcoxon test was used to compare the data obtained at the different moments of the research. The data were presented by the Box-Plot, of the statistically significant comparisons. For the comparison between the socioeconomic levels in the two moments separately, the non-parametric Kruskal-Wallis test was performed, for more than two independent samples. The level of significance was 5%. The research project was sent to HSRC´s Affonso Bianco Study Center, with approval from the Institution on March 12, 2012, and to the Research Ethics Committee of the Federal University of Espírito Santo under number 29.909, with approval on May 31, 2012, in accordance with Resolution 196 of October 10, 1996, at the time in force.

Table 1. Presentation of the questionnaires, the domains used, and the corresponding questions. Vitória, 2012.

EORTC QLQ C-30	**Questions**
Functional Scale	
Physical	1- Do you have difficulty to make more violent efforts, for example, carrying a heavy shopping bag or a suitcase? 2- Do you have difficulty in walking a great distance? 3. Do you have difficulty to take a short walk? 4. Do you need to stay in bed or a chair during the day? 5- Do you need help for eating, dressing, washing, or going to the bathroom?
Functional Limitations	6. Did you feel limited in your job or the performance of your daily activities? 7 - Did you feel limited in the usual occupation of your free time or other leisure activity?
Cognitive	20 - Do you have difficulty concentrating, for example, to read the newspaper or watch television? 25 - Do you have difficulty remembering things?
Emotional	21 - Did you feel tense? 22 - Have you had any worries? 23 - Did you feel irritable? 24 - Did you feel depressed?
Social	26 - Did your physical condition or medical treatment interfere with your family life? 27 - Did your physical condition or medical treatment interfere with your social activity?
Global Health Status	29 - How would you rate your overall health during the last week? 30- How would you rate your overall quality of life during the last week?
Scale of Symptoms	
Financial difficulty	28- Has your physical condition or medical treatment cost you financial problems?
EORTC-BR 23	
Body image	39. Did you feel less physically attractive due to illness and treatment? 40. Have you felt less feminine because of the illness and treatment? 41. Have you had trouble looking at your body naked? 42. Did you feel unsatisfied with your body?
Sexual Functioning	44. To what extent did you feel sexual desire? 45- How far have you been sexually active?
Sexual Pleasure	46. To what extent did sexual relations give you pleasure?
Future Perspectives	43- Have you worried about your state of health in the future?
Symptom in the Arm	47. Do you have arm or shoulder pain? 49. Did you have difficulty lifting your arm or making lateral movements with it?

Results

Table 2 shows the socio-demographic data of the interviewees. Figure 1 shows the medians of the statistically significant dimensions by the Wilcoxon test, when compared to the preoperative and postoperative dimensions, Physical Function, Functional Limitations, Social Function, Sexual Function, Financial Difficulty, Body Image and Symptoms in the Arm presented worsening after the surgery. The Cognitive Functioning Dimensions and Future Perspectives improved in the postoperative period.

Table 2. Socio-demographic profile of women diagnosed with breast cancer. Vitória, 2012 (n=87).

Variables	Frequence (n)	%
Age group		
30 to 39 years old	5	5.7
40 to 49 years old	23	26.4
50 to 59 years old	22	25.3
60 years old or more	37	42.5
Marital status		
Single	9	10.3
Married/Stable union	51	58.6
Separate	8	9.2
Widow	19	21.8
Origin		
Grande Vitória	51	58.6
Interior	34	39.1
Other state	2	2.3
Ethnicity		
White	56	64.4
Black	6	6.9
Brown	25	28.7
Education level		
Illiteracy or up to the 3rd grade of elementary school	46	52.9
Complete elementary school	14	16.1
Complete high school	15	17.2
Complete higher education	8	9.2
Socioeconomic condition		
Class B	17	19.5
Class C	54	62.1
Class D	16	18.4

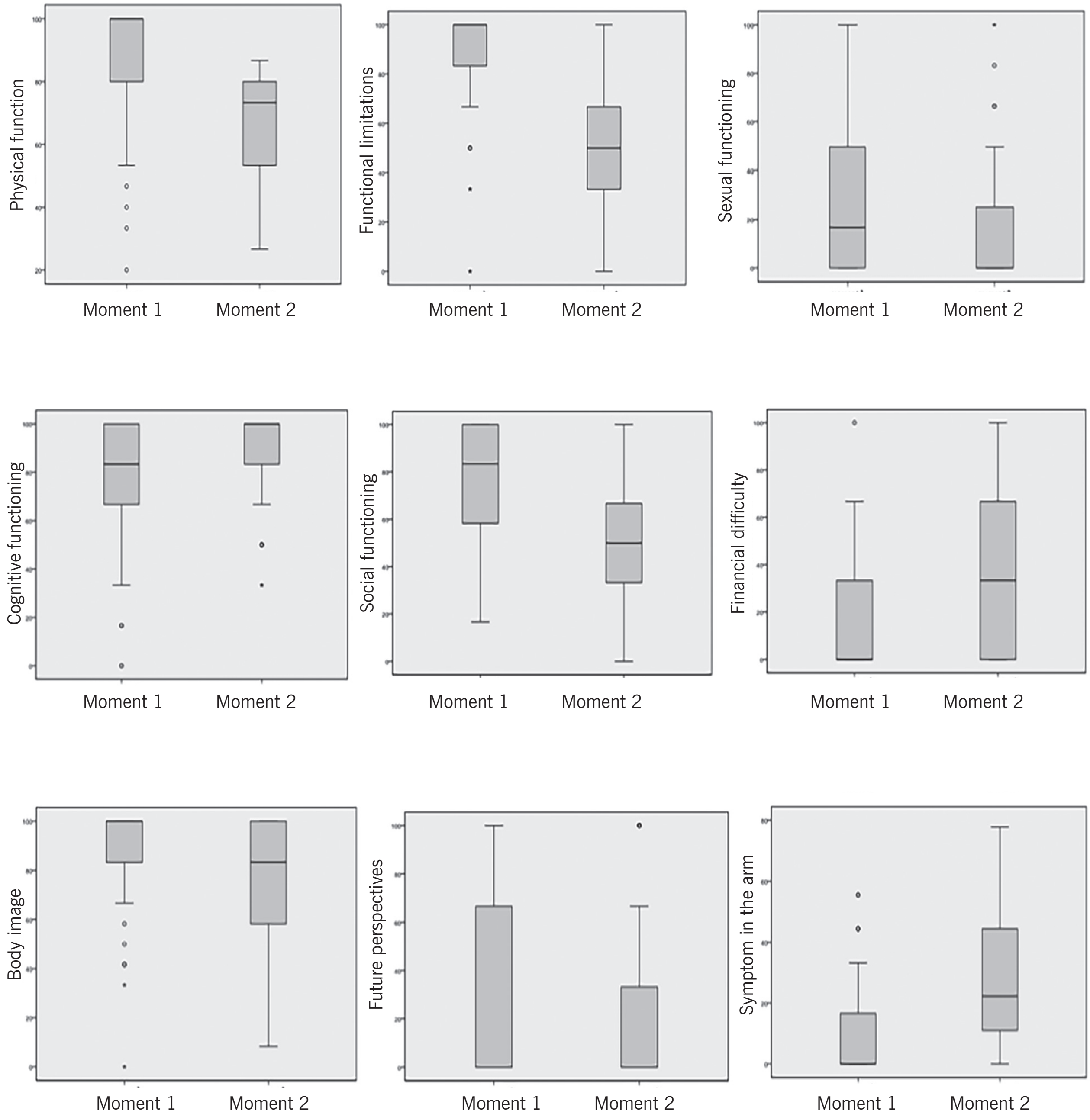

Figure 1. Graph Box Plots of the differences between the preoperative (moment 1) and the postoperative (moment 2) for the statistically significant scores. Vitória, 2012

When the dimension scores were related to CSE, it was observed that the patients in the C and D classes presented better QOL levels at the preoperative moment in the Physical Function dimension, while those classified in class B presented better levels in the Emotional Function dimension. In the postoperative phase, women of class C presented higher QOL in the Body Image dimension; and the women in CSE B had better QOL in the Social Functioning dimension (Table 3).

Table 3. Medians of the pre and postoperative moments according to socioeconomic classification and the respective p-values of the Kruskal-Wallis test. Vitória, 2012

Scores	Medians at Moment 1			*p*-value	Medians at Moment 2			*p*-value
	Socioeconomic classification				Socioeconomic classification			
	B	C	D		B	C	D	
Physical Functioning	86.6	100.0	100.0	<0.01	66.6	70.0	80.0	0.1
Functional Limitations	100.0	100.0	100.0	0.4	33.3	50.0	50.0	0.2
Cognitive Functioning	100.0	83.3	83.3	0.5	100.0	100.0	100.0	0.5
Social Functioning	83.3	83.3	100.0	<0.01	33.3	50.0	66.6	<0.01
Emotional Functioning	33.3	66.6	75.0	<0.01	66.6	70.8	75.0	0.4
Financial difficulty	0.0	0.0	0.0	0.3	33.3	33.3	33.3	0.3
Symptoms in the Arm	0.00	0.00	0.00	0.8	22.2	16.6	22.2	0.8
Global Health Status	83.3	75.0	83.3	0.2	66.6	66.6	70.8	0.3
Sexual Functioning	16.6	16.6	16.6	0.9	0.0	8.3	0.0	0.1
Sexual pleasure	66.6	66.6	33.3	0.3	0.0	66.6	33.3	0.1
Body image	91.6	100.0	100.0	0.3	58.3	83.3	75.0	<0.01
Future perspectives	0.0	33.3	0.0	0.1	0.0	0.0	0.0	0.9

Discussion

The prevalence of breast cancer among women with the highest age group is related to the incidence of the disease in the female population. According to the National Cancer Institute (INCA), age remains the main risk factor for breast cancer, since incidence rates increase rapidly after 50 years old, and after that, this increase occurs more slowly.[2] Married women were also the majority in another study in breast cancer, which suggests that the presence of a partner is important, but their absence was not a risk factor.[16] HSRC is the only Center for High Complexity in Oncology (CACON) at Espírito Santo, assisting the entire state, beyond the south of Bahia and Northwest of Minas Gerais. The fact that its location is in the metropolitan region may have influenced the prevalence of women from Greater Vitória, the capital of the state of Espírito Santo. The variable race/skin color, presented in the study as ethnicity, is a variable that transcends the biological issue, being an important determinant of the lack of equity in health,[17] being able to influence the determination of other variables, such as education.

Higher education attributes women to breast cancer a better QOL,[8] women with less than 8 years of education after mastectomy have worse scores on functioning and physical performance.[18] They are the women of less social classes, numbers that remain on the rise, evidencing a process of feminization of poverty. In Brazil, many families are headed by women and the most of them live in the metropolitan areas. When they divorce, in most of the cases, they are the ones who take care of their children, and still have lower remuneration than men,[19] aggravating the scenario. When affected by breast cancer, they are taken by great tension and stress, as there is fear of compromising the well-being of their family.[9]

The Physical Functioning domain worsened after surgery, as well as Functional Limitations. A similar study found that women who perform total mastectomy when compared to those who undergo Segmented mastectomy have a worse evaluation in this dimension.[18] In Nepal, women with breast cancer had good results in the Physical Functioning dimension, especially women with higher education level. In the Sexual Function and Sexual Pleasure, QOL losses were higher.[20] Sexuality changes during life, especially when a disease such as breast cancer arises because it is a multidimensional phenomenon involving psychological, physical, cultural and social factors, and their treatment causes important temporary and permanent sequels.[21] The negative consequences that the removal of a tumor can have are associated, mainly to the body image and perception of sexuality, and the result can be perceived as mutilation, persisting even after the breast reconstruction.[22]

Patients with breast cancer suffer from reduced Cognitive Function[23] linked to memory and concentration function.[13] In this study, women presented cognitive improvement, a fact that may have occurred because they were still treatment-naive women, and cognitive Social Functioning.[13] The disease, especially in the younger women, can make them very vulnerable, as it is the moment when their life and professional partnerships are established, and it can be interrupted, often by very intense and time-consuming treatments.[23] Poorer women and with a mastectomy also have a worse QOL in this dimension.[20]

The decrease in income after breast cancer can occur due to physical limitations imposed by the treatment process, and this decrease in purchasing power generates impairment of quality of life.[9] In this study, Financial Difficulty was a dimension of statistical importance for worsening QOL, as it happened in a study in Nepal, in which 90% of Nepalese assessed for this dimension had a fall in QOL, and in 84% this difficulty was due to cancer.[20] The dimension Body Image reflects the woman´s interpretation of her physical attraction power and her femininity after illness and treatment, and the difficulty of seeing herself naked and satisfaction with her body.[13] There was a decrease in this dimension; authors claim that there is a process of reformulation and (re) elaboration after breast cancer, and it is difficult to even after placement of prosthesis.[21,22,25] The decrease in this dimension is significantly associated with depression.[25] The study found higher scores in the Body Image when married, older, literate, housewife patients with a diagnosis of fewer than 6 months.[20]

Limitations of movement, presence of edema and pain are related to Symptoms in the Arm.[13] After the surgery, the region undergoes a healing process; the patient needs to use a suction drain, and she is still afraid of rupturing the stitches. When Symptoms in the Arm are present, it decreases the QOL[25]. The perspective of the future is closely related to the quality of information that the patient receives at the time of diagnosis. The communication of the health team is extremely important for the establishment of links and desire for future perspective.[26] Even with so many limitations presented by the woman and shown in this study, the Future Perspective domain was positive, which demonstrates the psychological resilience of these women. Psychological Resilience is a person´s ability to protect the mental health from confrontation, such as the diagnosis of breast cancer, which may change over time and have different variables that affect it.[27]

Patients with breast cancer who are more resilient verbalize symptoms of lower severity, and the less resilient ones report worse scores in the Body Image and Future Perspectives dimensions, besides presenting more serious adverse effects when in systemic therapy. Overall QOL is positively correlated to resilience levels,[27] literacy, better financial condition, type of conservative breast surgery, and good emotional support.[20]

Conclusion

Women´s QOL in the preoperative period was better in the Physical Function dimensions for class C and D; and Emotional for class B. There was improvement of QOL after surgery for Body Image in class C, and for Social Functioning in B. Evaluating all social classes, Physical Functioning Dimensions, Functional Limitations, Social Functioning, Sexual Functioning, Financial Difficulty, Body Image and Symptoms in the Arm presented worsening after surgery. The Cognitive Functioning Dimensions and Future Perspectives improved in the postoperative period. Overall, women's QOL after breast surgery worsened in the vast majority of the dimensions studied.

This study has limitations, such as the interval between the collection of the first and the second moment, about 30 days, and a small interstitial that impacts on the QOL to be evaluated more deeply. Another important aspect was the fact of measuring only such a subjective factor quantitatively, not analyzing discourses, only considering the score attributed to the woman to each of the dimensions. Even with the limitations, the study is assessed as relevant to assist in understanding the impact of an important procedure in women with breast cancer, surgery. This impact can be better worked by multi-professional and interdisciplinary teams, aiming at the provision of adequate care that transcends the breast and treats the body and the soul. Nursing has the sensitivity and competence necessary for comprehensive care, and to technical procedures, having the duty to clarify, along with the multi-professional team, the barriers that women may face, the adverse effects of medications, as well as minimizing the possible QOL losses, and reinforcing that the nursing team will be a great ally throughout the process and have refuge in the most conflicting moments.

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