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2020: Año Internacional de la Enfermería

70 años
Toda una vida cuidando vidas
1950 - 2020

Facultad de Enfermería

UNIVERSIDAD DE ANTIOQUIA
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Editorial

Faculty of Nursing at Universidad de Antioquia: 70 years, a whole lifetime caring for lives

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Seventy years have passed since Doctor Ignacio Vélez Escobar, in his possession speech as dean of the Faculty of Medicine at Universidad de Antioquia, on 23 August 1950, had the initiative of creating a new school of nursing. Thus, on 29 September of that year, Resolution Number 30 by the Directive Council at Universidad de Antioquia approved opening the School of Nursing, as dependence ascribed to the Faculty of Medicine. It operated under this figure until August 1975 when its creation resolution was repealed and it was determined that it would continue operating as a teaching unit at Universidad de Antioquia, but conserving its figure of School, which it kept until May 1981 when the same Council approved the transformation from School into Faculty.

For 2020, we had planned a great celebration for the 70th anniversary of a Faculty of Nursing that has been pioneer in Antioquia, with national and international recognition, which offers three

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specializations, two master's, and a doctorate; with important development in research and extension areas. For this celebration, we had additional conditions that supported us, among these that the Executive Council of the World Health Organization (WHO) declared 2020 as the International Year of the Nurse.[1] Further, the president of the International Council of Nurses highlighted that this decision by the WHO "will enhance the nurse's figure and will highlight the need for well-prepared nurses, as well as the need to invest on recruitment and retention strategies; and will eliminate barriers to the development of the roles of advanced nursing that are demonstrating great efficacy in the expansion of universal health coverage".[2]

Moreover, the *Nursing Now*[3] campaign between 2018 and 2020 highlights that nurses are the heart of most of the health teams and that improving and promoting their role will improve health results of the citizens. All of the aforementioned within the framework of the celebration of 200 years since the birth of Florence Nightingale, considered the precursor of modern professional nursing and creator of the first conceptual model of the profession. However, within the framework of such well-deserved celebration, in March of the present year, the WHO declared that COVID-19 outbreak went from being an epidemic to a pandemic, a public health emergency of international importance with imminent consequences for health and the social and economic wellbeing of all the nations.

From that moment, without being something alien to our reason for being, protecting human lives became our maximum priority, the celebrations were reformulated, and the ways of teaching, doing research, and extension were reinvented. The new reality has led us to a transforming process where curricular flexibility gains importance; face-to-face methodologies have been displaced by virtuality and the students' transit through their formation process is more dynamic, while activities and administrative actions that support teaching have become virtual.

We soon understood that our rhythm could not stop, but it was necessary to reformulate times, methods, and goals, while new commitments appeared to meet the current needs of our academic community and of our interest groups. Now, in honor of our slogan, **70 years, a whole lifetime caring for lives**, we are dedicated to displaying on the terrain why integral care, health promotion, prevention of complications, education for health, caring for the environment, interdisciplinary teamwork to maintain health and life are the center of interest of our formation and of our professional practice.

Thus, to meet the needs of our alumni, students, professors, administrative staff, and society in general, we opened our social networks to answer the principal questions made regarding the current pandemic situation; hence, the strategy **UdeA Nursing Caring for You, We care for each other at UdeA Nursing**. The answers are oriented according to up-to-date scientific information and guided by the Faculty's academic groups.

Every week, the Faculty of Nursing, given the disciplined work by its academic groups, shares actions and recommendations of care and self-care for people and their families, through strategies, like personalized answers to questions guided via our social networks, infographics, educational videos and booklets. All this academic production can be consulted in our web page http://enfermeria.udea.edu.co. Additionally, in solidarity manner the theoretical-practical course is being given on nursing care to patients in critical state under COVID-19 protocol, directed at nursing professionals not specialized in critical care. Professors with expertise in distinct areas participate in 11 of the 16 work groups to analyze the social, labor, economic, territorial, and food safety implications due to COVID-19, a strategy generated from the University and led by the Vice-rectory of Research. The project: "Strengthening Mental Health in the Nursing Community" was begun and is led by a group of professors with training in family therapy and by the Welfare coordination in our dependence.

Today, 20 years after the start of this new century, also began the process of curricular modernization. Nursing professionals graduating from our faculty are critical in their practice, evidencing that the clinical and community care they provide is the fruit of the interaction of being, knowing, and knowing how to do; not as finished processes, but open to change and to the transformation's characteristic of the uncertainty that the current reality imprints on their professional work. Now, we are shown a panorama where students do not dedicate their time solely to their professional formation, they are also workers. The professor, student and alumni are now citizens of the world. With academic-cultural internships, increasingly frequent. This, among other issues, has obligated the Faculty to think of a curricular transformation that contemplates homologations of the degree in other countries, analyze the number of credits in the study plan, denominate its courses, along with their thematic and practical contents according with the social, cultural, political, epidemiological dynamics that have marked big changes in daily life. The presence of chronic and reemerging diseases has obligated necessarily to a new dynamic and transforming formation process. As response to these new demands, a new proposal is introduced of curricular modernization, increasing the formation of nursing professionals from four to five years, seeking to continue on the leadership path at the national level and gaining global positioning.

We continue working for the future, with unwavering illusions for an autonomous professional exercise and with high qualification standards. The following are some of the principal aspects we have envisioned for our faculty:

Consolidation of a work group for issues of quality in graduate programs, for renovation of qualified registries and processes of quality accreditation. Participation in the curricular internationalization project led by the Vice-rectory for Teaching. Performance of feasibility studies to offer undergraduate and a specialization programs in a regional branch of the University. Elaboration of the master document of the specialization in Obstetric Nursing. Strengthening incoming and outgoing national mobility in light of the globalization of knowledge. The consolidation of environments that generate good living reactivates the work environment committee with different strategies that require and invite participation from all. We are advancing on the characterization of our alumni to offer accompaniment, especially during the initial years after graduation, which responds to their labor and formation needs.

In the line of managing the relationship with the environment, currently, we are undertaking some projects with the Mayor's office of Medellín on very important themes for the city, like the elderly, disability, care in emergency services, and health promotion and disease prevention with differential approach. We are managing a project to accompany and update the guidelines of Primary Health Care for the department of Antioquia. We are undertaking strategies of pedagogical development that support the implementation process of curricular transformation. The current conditions that lead to diminishing the professor/student ratio and the time of permanence in the practice sites require greater and better equipping of our skills laboratory, thus, we advance in the project of renovation of simulators for academic enhancement in the undergraduate, graduate, and extension programs.

We are working on improving the conditions of physical infrastructure of the Faculty and on starting the construction of the new building in the lot next to our facilities; currently, its designs are in approval phase. Research and reflection, as an activity characteristic of universities, tends to the search, production, dissemination and appropriation of knowledge and of its logics. This is how the *Cuaderno de la Facultad* (Faculty Notebook) emerges, which will be a digital medium of dissemination of the academic production by students and professors; a component to make visible the research of our action plan, under the

leadership by the head of the Research Center and with participation from a group of five professors and one student. The *Cuaderno* is framed by the guidelines that in research are given from the University and the Faculty on the importance of disseminating knowledge for disciplinary development and on the urgent formation necessity of students in research, critical reading and writing, further revealed in the diagnostic phase of the recent process of curricular transformation

So many projects carried out and so many still pending account for the commitment we have with undergraduate and graduate formation, as well as with the generation of human knowledge, which has always been the motor of social development that seeks to satisfy the desire to learn as an inherent condition of the very life of each subject. This search for knowledge is transferred among intergenerational relations to consolidate learning and an episteme that is affirmed at every moment of the institutional life of our Faculty of Nursing.

Although we are aware about having had to adapt to this new reality, we wish to dream with a fraternal face-to-face meeting. For this reason, as of 29 September, day to commemorate the official creation of our esteemed Faculty, we will continue celebrating until reaching the 71st anniversary, hoping that the evolution of the COVID-19 pandemic allows us the opportunity to meet in 2021 to celebrate life.

The history of these 70 years is the construction of the work by students, graduates, retirees, professors, employees, and allies, all are leading players.

Thank you, Faculty of Nursing for 70 years! For a whole lifetime caring for lives!

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COVID-19: Threat or Opportunity?

Editorial

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Descriptors: nurses; coronavirus infections; pandemics; professionalism.

Descriptores: enfermeras y enfermeros; infecciones por coronavirus; pandemias; profesionalismo.

Descritores: enfermeiras e enfermeiros; infecções por coronavirus; pandemias; profissionalismo.

The COVID-19 pandemic is spreading quickly. Despite scientists' best efforts all over the world, there is not a vaccine or definite treatment for it and the novel coronavirus remains a threat to humanity with far-reaching, and in many cases, irredeemable consequences for the economic, political, social-psychological , and cultural aspects of humans' lives.[(1)]The quick transmission and fatality of the disease, absence of herd immunity, lack of or inequitable distribution of resources,

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e.g. Personal Protective Equipment (PPE), and the existing challenges in the implementation of social distancing result in a daily increase in the number of victims and, consequently, an ever-expanding workload in healthcare systems worldwide. Moreover, the increasing mortality and morbidity of COVID-19 and lack of hospital beds and ventilators have led to healthcare provider's exhaustion and burnout.[1,2] Healthcare providers, especially nurses are the most vulnerable group in the face of the current disaster. Unfortunately, In the world, many front-line experts have lost their lives.[3]

One of the indicators of social capital and the public's risk perception is political trust. Understating a crisis, or the opposite, overstating it, lack of consistent policies or sudden changes in policies, and conflicts among administrative patterns can result in reduced risk perception and unhealthy imitation, which, in turn, can result psychological, social, and health tension in the society. The ensuing panic and anxiety pose a serious threat to public health.[4] The necessity of complying with certain prevention and control requirements, including social distancing and quarantine, have increased stress, social isolation, intra-family violence, and depression.[5]

The stigma of COVID-19 is another issue which causes individuals to delay or refuse to seek medical attention, which, in turn, results in a wider spread of the virus. COVID-19 has also disrupted monitoring programs and pediatric vaccination all over the world. According to WHO on May 22, 2020, the pediatric vaccination programs in 68 countries have been adversely affected and about 80 million babies under 1 year old have not received any primary health care, which can have serious consequences in the future.

Despite all the challenges, the COVID-19 emergency; however, it has provided opportunities which are briefly dealt with below. Solidarity in human societies following the onset of this complex crisis has underlined the essence and significance of human unity in the universe.[5] One of the most prominent themes of global collaboration is the commitment of the countries to the WHO for the production and equal distribution of a vaccine. Currently, the Solidarity Trial with the participation of 94 countries is in progress to examine the efficacy of various drugs in treating COVID-19.[6] The unprecedented crisis has created the chance for all healthcare professionals in different fields to provide comprehensive professional care by a holistic multi-disciplinary approach.

Every day, there is news about voluntary dedication of financial funds and medical equipment to hospitals, dedication of food to the lower classes, and allocation of resources to medical research, all of which are examples of "humanity in practice." This context has been accompanied by unique opportunities and innovative solutions. Employment of technological advances, e.g. telehealth and protecting public health, to facilitate the provision of care to patients and minimize the need for face-to-face exposure is one of the interesting, effective, and economical options in preventing the spread of the virus. In many countries, the telemonitoring applications were designed to detect patients suspected coronaviruse. The rapid transmission of health information is a top priority in the control and prevention of disease. Given the problems which the pandemic has caused in the traditional ways of informing the public, distance learning, has become a necessity. Webinars on COVID-19 control and prevention and recent scientific advances in the fight against the virus are held on a daily basis all over the world.

The pandemic has underlined the significance of self-isolation facilities in residential areas. By preventing the transmission of the infection, isolation can lessen the current pressure on healthcare providers and enable them to focus on the preparation of special care units for the admission of severe cases.[7] Another apportunity to this crisis, as a result of the lockdowns and travel restrictions, is the temporary rehabilitation of the earth, especially in March and April 2020.

Also, for a short time, the release of CO_2 in China decreased to a quarter of its usual amount. In addition to reduced air pollution, there has been a significant decrease in the amount of greenhouse gases produced in all continents. Air pollutants are the major causes of respiratory system disease.[8]

Strategic planning is the analysis of basic environmental risk factors and the identification of the shortest way to achieve a goal .Under the current circumstances where our resources are inadequate and our knowledge about how to control COVID-19 is incomplete, there is an essential need for strategic planning to accomplish healthcare goals in the shortest possible time and in the most efficient way. Organizations which are constantly testing and updating their strategic plans are able to significantly reduce the undesirable consequences of the crisis and play an effective role in protecting the health and safety of their staff and patients.[9] In the International Year of the Nurse, the COVID-19 outbreak created a bold public image of nurses that saves human lives. An inhanceed public image of nurses will positively affect their self-image, professional identity, job satisfaction, and professionalism. [10] Nurses have a significant contribution to the population's health. The current pandemic has marked a turning point in the enhancement of communication and trust between the public and the medical personnel. In most countries, millions of people have sincerely expressed their gratitude to healthcare professionals and motivated them.

Despite the fact that the COVID-19 crisis has been followed by many challenges and, with the daily increase in the number of the infected, has imposed considerable workload and expenses on healthcare systems, it has been accompanied by many opportunities, including the greater recognition of the priority of prevention over treatment in pandemics, modified life styles and improved health behaviors, unity in the world, empathetic thinking, awareness of the significance of telehealth and virtual education, recognition of the necessity of strategic planning, greater attention to the role of caregivers in promoting public health, people's appreciation of the efforts of the healthcare providers, and innovation in making up for shortages, e.g. lack of PPE. Ultimately, the novel coronavirus has created a chance for us to reflect on our lives and gifts, including the ability to breathe without the aid of a ventilator. In addition to, the deathly crisis made further strengthened our connection to spirituality. One of the main principles in crisis management is trying to turn "threats" to "opportunities."Thus, the invaluable experiences gained in the pandemic can help healthcare policy-makers to better plan to resolve current or future health crises.

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Research Care and Teaching Care Research in the Faculty of Nursing at Universidad de Antioquia. Testimonies and Legacies in 70 years of Institutional Life, 1950-2020

Essay

Check for updates

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Research Care and Teaching Care Research in the Faculty of Nursing at Universidad de Antioquia. Testimonies and Legacies in 70 years of Institutional Life, 1950-2020

Abstract

The development of care research and its teaching in the Faculty of Nursing at Universidad de Antioquia cannot be understood outside the context in which it emerges and from the trajectory of its leading players. This is how this article will present a synthesis of the future of research, with its principal milestones and events in institutional history, in dialogue with the trajectories of four teaching nurses, protagonists of key moments in said history and living testimony of 70 years of institutional life. This panorama seeks to constitute a referent for strategic reflection, which inspires new generations to meet the research challenges and teach care research.

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Descriptors: nursing research; education, nursing; nursing care; research support as topic.

Investigar el cuidado y enseñar la investigación del cuidado en la Facultad de Enfermería de la Universidad de Antioquia. Testimonios y legados en 70 años de vida institucional. 1950-2020

Resumen

El desarrollo de la investigación del cuidado y de su enseñanza en la Facultad de Enfermería de la Universidad de Antioquia no puede ser entendido por fuera del contexto en que emerge y de la trayectoria de sus protagonistas. En este artículo se presentará una síntesis del devenir de la investigación, con sus principales hitos y acontecimientos en la historia institucional, en diálogo con las trayectorias de cuatro enfermeras docentes, protagonistas de momentos claves de dicha historia y testimonio vivo de 70 años de vida institucional. Este panorama pretende constituir un referente para la reflexión estratégica que inspire a las nuevas generaciones para responder a los retos de la investigación y la enseñanza de la investigación del cuidado.

Descriptores: investigación en enfermería; educación en enfermería; atención de enfermería; apoyo a la investigación, apoyo a la investigación como asunto.

Investigando o cuidado e o ensino da pesquisa sobre o cuidado na Faculdade de Enfermagem da Universidade de Antioquia. Testemunhos e legados em 70 anos de vida institucional. 1950-2020

Resumo

O desenvolvimento da pesquisa do cuidado e seu ensino na Faculdade de Enfermagem da Universidade de Antioquia não podem ser compreendidos fora do contexto em que se inserem e da trajetória de seus protagonistas. É assim que este artigo apresentará uma síntese da evolução da pesquisa, com seus principais marcos e acontecimentos na história institucional, em diálogo com as trajetórias de quatro enfermeiras professoras, protagonistas de momentos chaves de dita história e testemunho vivo de 70 anos de vida institucional. Este panorama pretende constituir um ponto de referência para a reflexão estratégica, que inspire as novas gerações a responder aos desafios da investigação e do ensino da investigação em cuidados.

Descritores: pesquisa em enfermagem; educação em enfermagem; cuidados de enfermagem; apoio à pesquisa como assunto.

Introduction

As indicated by Fawcett,[1] it would seem that nursing research has operated similarly in different parts of the world, having as foundational milestone the pioneering works by Florence Nightingale in 1850. With asynchronies characteristic of the global north and south, the first undertook research works and formation processes since the 1920s, with strong tendency to conduct studies related with nursing education, which were then energized around themes related with the health experiences of people and communities during the 1970s, seeking to create an evidence base to support care practices,[2] which has been maintained to current times.

The need to research the nursing practice managed to consolidate itself in the 1980s, with an important increase in the number of nurses carrying out research projects and discussions in theoretical and contextual themes that led to understanding nursing as art and as science.[3] This trend is strongly linked to the dynamics of nurse formation centers, which particularly in Colombia, became a legacy of the Faculty of Nursing at Universidad de Antioquia. During its 70 years, this study center, from 1950 to 2020, the institutional trajectory is intersected with biographical accounts of nurses who constructed the day to day, through questions and diverse modes of doing research and teaching the craft of researching, positioning and generating knowledge about nursing and care, with regional, national, and international reach.

This article will tour the milestones and events of the institutional life in a framework with personal testimonies, whose purpose is to open and propitiate a setting for intergenerational dialogue, an approach to the exchange of memories, a wager and concern for the "heritage" to new generations. These memories, more than a nostalgic remembrance, seek to position a living speech of dialogic nature,[4] to recognize and emphasize diversity, differences, conflicts, dissents, and struggles, as well the lessons, supports, and agreements, synthesized in every memory.

Institutional milestones and trajectories

Although since early 20th century, the need to form nurses duly trained in the city of Medellín, Colombia was evident, the initial training processes were not conducted with the purpose of leading to any degree and, rather, responded to specific needs, which were supported by professors from the Faculty of Medicine at Universidad de Antioquia.[5] It was only by the middle of the century, as response to recommendations by North American medical missions, who visited the country between 1944 and 1948, that the importance was acknowledged of "creating schools of nursing, as response to needs felt by society",[6] with the religious community of the Sisters of the Presentation

in Medellín assuming and materializing this idea through the foundation, in March 1950, of a School of Nursing, with the attendance of 11 members from the religious community.

Although at the beginning, the nascent School of Nursing was destined for the formation of people from the religious community, the directives at Universidad de Antioquia requested considering also secular individuals and jointly create a school of professional nurses with capacity to provide health services based on scientific knowledge and backed by this institution. This is how in September 1950 began the School of Nursing at Universidad de Antioquia, under the direction of the Sisters of the Community of the Presentation.[3]

At this time, learning was marked by a technical and instrumental logic, with strong influence from the biomedical model. In the Colombian context, debates had not been undertaken that in the Anglo-Saxon world already claimed recognition of nursing as a scientific discipline, independent and autonomous. During this period, the precariousness in access to scientific production characteristic of the profession, limited significantly early access to areas as important as research, and to progress in the disciplinary discourse. Even up to the 1960s, although the importance of strengthening training in areas, like administration and teaching, was emphasized, research as such did not have a preponderant place.[7] Very incipiently in 1957, the Advisory Council that presided over the then School of Nursing approved the obligation of an academic work that approached what was considered a degree thesis as condition for the students to receive their degree. Orientation and approval of said works was in charge of the School's teaching physicians.[3]

Thereafter, new debates in the formation model led in 1965 to the establishment of a complementary cycle to the basic program of nursing formation, which permitted opting for the Degree in Nursing. At that time, the influence of the hygienist current and the preventive model of public health permitted encouraging formation in epidemiology and biostatistics, considered important tools for research work. It also included formation contents related with the methodology of social research, evaluation techniques, communications, among others, which directly or indirectly provided nursing students tools to conduct research.[6]

This is how after 15 years from the creation of the Nursing program at Universidad de Antioquia, positivist research was added to the formation of professionals, marking a first milestone in the institutional and professional trajectory in research, which kept a preponderant place as hegemonic trend until the 1980s. This tradition collected the imprint of Nightingale and her renowned publication Notes on Nursing, which aimed for measurable and concrete knowledge related with issues of care.[8]

Although the Degree in Nursing was approved in 1965 and perfected in 1967, it favored access to graduate studies, like specializations and Master's studies, only a few professors sought access to them during the early 1070s, especially in epidemiology, with which they became a privileged group, carriers of specialized knowledge and special training, which as of that moment insinuated the tension that remains to today, of dedication to research or to teaching in research for "closed groups", which leaves out an important number of teaching faculty, generating relations of power and resistance against the social status that accompanies the figure of researcher. Paradoxically, the scarcity of professors with graduate formation, not only established the idea of this species of "research elite", but a certain aversion to research, considering that this was an activity of little significance for the development of nursing, whose focus was indissolubly linked to the care practice. That is, the idea of research as motor for disciplinary development, which was already consensual in other geographies, was a matter questioned in our context, which still had to deal with bias established on the distance among research, nursing, and the care practices, besides the political and ethical debates around the research practice.[3]

Later in the decade, multiple debates were stirred and grew, claiming the need to transcend the clinical, individual, and biomedical vision to approach an integral vision of the people and of the health-disease process, recognizing the importance of the approach among disciplines.[9] This understanding stirred great interest in the study of the existing relation between disease and society, which led to the creation of the movement of social medicine in Latin America.[7] In Colombia, this movement began growing between the 1970s and 1980s, around specific programs in some universities, including Universidad de Antioquia. Professors and students from the health area, with an important representation from the School of Nursing, addressed the country's sociopolitical problematics, demanding greater critical conscience and a broader and humanistic vision of health and of the social context, which entered into conflict with the biomedical and positivist approach strongly positioned in the School.[3]

All this raised changes in the formation and the nurses' practice, recognizing that the solution of problems was necessarily the competence of intersectoral actions, when facing the health-disease phenomenon as a collective, historical, and social reality and, hence, complex, which is why interdisciplinary team work emerged as an unavoidable response.[3] With this new orientation, a second milestone was positioned in the research trajectory of the School of Nursing at that moment, establishing the theoretical and epistemological debate around the methodological monism and giving rise to interpretative research, an approach consolidated during the 1980s and which became a seal of institutional and professional recognition after the 1990s, with permanence to date. In the 1980s, the purposes of research development materialized in the Research Center of the Faculty of Nursing, which began in August 1981 and in the conformation of academic and work groups, which would later migrate to the research groups now in the Faculty; as well as with the offer of graduate programs that began during this decade, which grew and remain until now.

On par with these changes, a new philosophy was proposed in the formation of nurses in the early 1980s, which besides claiming greater social and political awareness, also advocates for autonomous, purposeful, and reflective nursing upon social, institutional, and disciplinary needs.[3] At that given moment, the Superior Council at Universidad de Antioquia approved the project that transformed the school into Faculty of Nursing and which established a professional profile that explicitly declares the importance of: *a close relation with the theoretical, methodological, and technical elements of social and epidemiological research to analyze the relation of health problems with the economic, sociopolitical, and demographic structures, guiding the search for real solutions to problems not only from biological alterations, but from the expression of multiple determinations of the social structure*.[6]

By this time, a public declaration was instituted committed with the formation of nurses for quality performance in their four basic functions: care, teaching, administrative, and research in the clinical and community environments.

We could, then, state that, after 30 years of existence of the Faculty of Nursing at Universidad de Antioquia, research had managed to position itself and secure a place of legitimacy as guarantor of scientific and disciplinary development, under a vision of approaches in tension, which were mobilized and emerged in the classrooms and in the teaching-learning process. Precisely during this decade, in 1983, the journal Research and Nursing Education, founded on the recognition research had gained in the faculty and the scientific production derived from it, which merited the creation of a dissemination instrument. In spite of the gains indicated, it was a process with stumbling blocks, given that nursing was still seen by most people as a technical profession dedicated only to practice, with total dependence on the medical discourse. The journal managers skewed the generalized idea that research was an unknown and foreign exercise for nursing; making a balance of research being conducted

since the 1970s, which mostly had not been published, given the scarcity of dissemination media that allowed these works to be made visible; an inventory published in the first number of *Research and Nursing Education* in 1983.[3] It must be indicated that this was the third journal of scientific dissemination in nursing in Colombia, which had been anteceded by the *ANEC* journal published by the National Association of Nurses of Colombia since 1966 and *Advances in Nursing* at Universidad Nacional, published since 1982.

In parallel manner, with the initial work of the journal, its pioneers also traced the first lines of nursing research, a totally novel theme because it was the first time this was talked about in the country, and specifically of lines in nursing, which was of interest both in and out of the university, making visible in an important way the faculty throughout the country. The product of the reflections on the lines of research was published in the second number of the journal *Research and Nursing Education* in March 1984, when neither the university or COLCIENCIAS (now MinCiencias) referred to these forms of organization of the research activity.[6]

As mentioned, synchronously and complementary to these initiatives, the Research Center of the Faculty of Nursing was also created, which was founded to train members from the academic unit on research, manage research, and disseminate knowledge. From this center, arduous work was undertaken on the conformation and positioning of the lines, managing to consolidate several of them as care for adults and children in critical state of health; health of ethnic groups; the nursing practice in the social context; gender and health; sexuality and the clinic; end-stage care, death and palliative care; and interest groups around the dynamics of health professionals and reforms to the sector.[10] All this progress positioned the Faculty as a reference center for internal and external training and advice to nurses from health institutions and also to the Colombian Association of Faculties of Nursing (ACOFAEN, for the term in Spanish) on the preparation and execution of academic events.[6]

Amid these dynamics, the 1990s emerged with strong reforms of global nature, which liberalized economies and imposed important reforms, especially in Latin American countries. Paradoxically, said decade left a constitutional reform that sought the recognition of a diverse and inclusive country, while also bringing the reform to the social security system in which the privatizing neoliberal ideas of social guarantees were embodied. Health and education began to take the course of the market, under the premises of free enterprise and reduction of the role of the State, which also marked the course of research, not only in its investment and funding priorities, but in the same logics of social function of knowledge, which for many authors takes shape in what has been called cognitive capitalism in the 21st century, where the generation of critical thinking is also trapped by the logics of commodification and its formats of creation and dissemination of knowledge.[11]

Within the Faculty of Nursing at Universidad de Antioquia, the 1990s was a period of great and profound movements, characterized by great deliberations and understandings on the object of nursing reflection and practice, which, with great conceptual maturity, made important contributions to the academic production of the discipline in the country. In this regard, María Consuelo Castrillón[12] states that: *During this period "care" was identified as a historical function of nursing professionals, a function that has had diverse modalities and contents, and whose study must contribute to enriching the conceptual and action field*. (p. 24-25)

In terms of research, emphasis was made on the need to develop projects with other disciplines and, thus, generate feedback of technical-scientific knowledge with regional and national communities, and training was significantly encouraged in qualitative research. It was also,

starting this decade, when the opening of the Master's in Collective Health, which inaugurated research formation as a Faculty project. Management of this program, with participation by many teaching nurses who led other, already mentioned, projects related with the development of research in the Faculty of Nursing began by problematizing single-disciplinary training and some fields that were in the academic scene at the moment, as was the case of family health and community health. Finally, it was opted for collective health; considering this a novel and encompassing field, which in epistemological terms installed an interdisciplinary intention, in methodological terms proposed a diversity of comprehensive approximations, and in praxeological terms privileged a sociopolitical approach to comprehend and intervene the health-disease-care-death process.[13]

At the dawn of the 21st century, research in the Faculty of Nursing had opted for important projects; on one side, a research center operating uninterruptedly for 20 years, five active research groups, a scientific journal for the dissemination of knowledge in nursing, development of some editorial projects, and projection and implementation of a solid graduate studies offer for formation in research, not only for nursing professionals, but for professionals from other disciplines. The first decade began with the approval of the Master's in Nursing and closed with the approval of the Doctorate in Nursing.

Currently, closing the second decade, we encounter a complex panorama regarding research: the "false dilemma" among the methods,[14] the scientist status and "elitist" circuits of knowledge, the preponderance of cognitive capitalism, and the biotechnological challenges, besides a full context of demands derived from an epidemiological profile in transition of demographic transformations and of great social and environmental problems, which place at odds the local with the global, are only some of the challenges we must face. On par, now, unlike 15 years ago, research is part of the university dynamics of professors and students from the Academic Unit, that in a naturalized way circulates through the daily life of its different spaces and settings, with important qualification of the teaching staff on research, bearing in mind that 95% have studies at master's and/or doctorate levels. These new generations today must respond to the challenges indicated and others related with the transit of mono disciplinary to inter and trans disciplinary studies[15] that integrate solid theoretical argument against care, which articulate care practices as source of knowledge and which consider the management of the results of nursing research, to bridge the gap between theory and practice of care.[16]

Personal milestones and trajectories

The institutional path, previously mentioned, comes alive in the trajectory of teaching nurses, who in their reports bring memory to life. During the Research Days of the Faculty of Nursing in 2020, four nurses, professors and researchers participated, who have been part of the developments presented.[17] From the point of view of their biographical trajectories, they highlight how the formative research processes in undergraduate studies, included in the national curricula since the early years of the 1970s, were decisive in their professional and disciplinary development, given that these permitted understanding the social importance of research and, as stated by María Consuelo Castrillón "finding a place in the world".[17]

The biographical reports indicate that these were the first incursions through formative research, which led them to seek research formation processes through undergraduate studies, in and out of the country, a strength with which then arrived to echo on the curricular and research mobilizations that took place during the 1970s and 1990s in the Faculty of Nursing. Added to the progress that in terms of research had been obtained by including courses in the study plan, motivation, and training of professors and students

was the involvement of some professors with formation principally in master's in epidemiology, public health, and education, who trained other professors and nurses in formation, comprising a solid, recognized, and highly respected academic group that gave national and international visibility to the Faculty of Nursing at Universidad de Antioquia.

These formation processes were, in addition, accompanied by active participation in associations and academic groups that permitted them an encounter with peers and with professionals from other disciplines, important referents in the field of health and research in Latin America. These experiences ratify the importance of the collective to produce debates leading to new questions and exploration routes, where the interdisciplinary took and continues occupying a central spot; besides hinting at a line that today is much more forceful around the internationalization of research as a promising path to generate knowledge on care. This path also identified the importance of understanding and recognizing the disciplinary dimension to drive a nursing practice based on theoretical thought.

The testimonies by María Consuelo Castrillón Agudelo, Clara Inés Giraldo Molina, María Mercedes Arias Valencia, and Beatriz Elena Ospina Rave[17] account for the importance of spiraled routes that combine actions of researching, teaching, acting, and investigating inspired in the metaphor of "teaching from the swamp", that is, from the place of the expert researcher who accompanies novel researchers, but also from the strategy of "teaching to research, investigating", which permits consolidating a conscientious and critical attitude in the formation of researchers. For such, their testimony invites to consider the theoretical challenges that permit an approach to multiple authors, with their diverse tones and voices; the flexibility to recognize other paradigms and incursion into disciplines different from nursing, under the premise of epistemological insufficiency of the mono-disciplinary. The need to recognize epistemological interconnections emanates precisely from the complexity of human problems and care practices, from the certainty of the uncertain, and from the infinity and at the same time partiality of the questions and their responses.

In closing

The history of the Faculty of Nursing at Universidad de Antioquia in its 70 years of institutional life, trajectory that began in 1950 and which takes place in a transition from vocational nursing to professional nursing, has positioned research as a fundamental pillar for its dynamics and transformations, amid tensions and debates that still continue within a context that still owes social recognition to the nursing discipline, as legitimate and autonomous field of knowledge and practice.

The distinct approaches to research have occurred as product of academic and social mobilizations that over the years have imposed different challenges and which are translated into curricular transformations, where the question for care research and teaching of care research have been present.

At its 15 years of existence, the Faculty of Nursing already included in its formation proposal research elements of positivist tendency, of great influence during the 1960s and 1970s, which, beyond the epistemological or methodological debates, permitted – temporarily – for nurses of the time to become sensitive to the social importance of research and strengthen their capacities and skills in the research practice.

Without a doubt, the 1980s consolidated the greatest debates, where the question for interdisciplinarity emerged with force, as well as the debate for methodological monism. As a result of that, sharp discussions for the moment, context, and discipline were undertaken in this study center, related with the sense of reality to which care was aimed, the forms of relationship between research nurses and the subjects of care, and the reach in the explicative and/or

comprehensive horizon of the process. As of that moment, academic groups and lines of research were steadfastly established, which later gave rise to the five research groups that currently would gather nearly 80 teaching researchers.

From the formative point of view, since the 1970s until now, the Faculty of Nursing remains in favor of formative research for undergraduate students, which it enhances through different courses and seminars that permit their acquiring tools and skills to construct research questions and problems, design response paths, and execute their projects. Likewise, it has maintained, since the 1980s, an offer of research formation in master's programs, consolidated during the first decade of this century with the implementation of the second Doctorate in Nursing in Colombia. In this sense, research continues claiming and occupying an articulating place for the discipline, now also associated to discussions for technological innovation, social appropriation, and transfer of knowledge, with all their vicissitudes. It is agreed that nursing research is essential for its development as profession and that it is in the production of knowledge where support bases are obtained to develop as science and as art.

The year 2020, denominated the Year of Nursing by the Advisory Council of the World Health Organization, where the profession receives public institutional support, is also the year in which, for the first time for many generations, a global pandemic produces unthinkable changes in individual and collective lives. Undoubtedly, these combined events, again reveal caring for life as a fundamental issue,[18] updating questions related with their ontological status and claiming epistemological and methodological alternatives upon its complexity. Although social recognition of nursing does not manage to fulfill the expectations of those in the profession, it is fundamental to insist on that path of "lights and shadows" of questions and infinite, although partial, answers to those where we are summoned by the research practice because therein is where care is strengthened.

Now more than ever, ethical and political challenges come forward, involving care research and teaching of care research, which urgently must address profoundly ontological issues related with the limitations of the humanist visions, the anthropocentric preeminence, and the urgent decentralization towards a socio-biocentric vision, which besides human life, recognizes also the need to care for non-human life forms. [19] If during the 1980s and 1990s the legacy of the discussions for the social determination of the health-disease-care-attention-death process [13] permitted energizing the research processes under an interdisciplinary vision; even today, these formats seem limited by the comprehension of care phenomena that in their complex order claim transdisciplinary logics and reflection on the ontological status of that life care is concerned with. For a Faculty of Nursing with 70 years of life, with a convincing historical legacy and qualification programs in the formation of researchers in Nursing, but – likewise – with consolidated processes of formative research, these and other challenges that are part of the uncertainty brought by the 21st century, will be tracing factors in the following years of institutional life.

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Formation of Nurses at Universidad de Antioquia: A Reality embodied in its Study Plans

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Formation of Nurses at Universidad de Antioquia: A Reality embodied in its Study Plans

Abstract

The article presents the trajectory of the study plans that have guided the formation of nursing professionals at Universidad de Antioquia in Medellín (Colombia). It presents the principal milestones or events that at a given moment determined significant ruptures in the formation processes and which show how this Faculty of Nursing, in its 70 years of existence, has always articulated the health needs of the context with the formulation of its study plans, with the sole purpose of forming critical and innovative nursing professionals capable of responding assertively to care needs, according with the principal challenges or trends that condition the health environment.

Descriptors: education, nursing; curriculum; students, nursing.

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La formación de enfermeros en la Universidad de Antioquia: una realidad plasmada en sus planes de estudio

Resumen

El artículo presenta la trayectoria de los planes de estudio que han direccionado la formación de los profesionales de enfermería en la Universidad de Antioquia de Medellín (Colombia). En él se presentan los principales hitos o acontecimientos que en un momento dado determinaron rupturas significativas en los procesos de formación, y que muestran como esta Facultad de Enfermería, en sus 70 años de existencia, siempre ha articulado las necesidades de salud del contexto con la formulación de sus planes de estudio, con el único propósito de formar profesionales de enfermería críticos e innovadores, capaces de responder asertivamente a las necesidades de cuidado, de acuerdo con los principales retos o tendencias que condicionan el entorno de la salud.

Descriptores: educación en enfermería; curriculum; estudiantes de enfermería.

A formação de enfermeiro na Universidade de Antioquia: uma realidade refletida em seus planos de estudos

Resumo

O artigo apresenta a trajetória dos planos de estudos que orientaram a formação dos profissionais de enfermagem da Universidade de Antioquia em Medellín (Colômbia), separados por marcos ou eventos que em determinado momento determinaram rompimentos significativos nos processos de formação, e que mostram como esta Faculdade de Enfermagem, nos seus 70 anos de existência, sempre articulou as necessidades de saúde do contexto com a formulação dos seus planos de estudos, com o único propósito de formar profissionais de enfermagem críticos e inovadores, capazes de responder assertivamente às necessidades de cuidado, considerando os principais desafios ou tendências que condicionam o ambiente de saúde.

Descritores: educação em enfermagem; currículo; estudantes de enfermagem.

Introduction

Evidencing the trajectory of the study plans of the Faculty of Nursing at Universidad de Antioquia, Medellín (Colombia) is the common thread in this work, with the idea of facilitating the comprehension of the formation process experienced in its 70 years of existence and, hence, the development the profession has had in it. This process has been permeated by cultural, socioeconomic, political, and scientific-technical factors characteristic of each period, as well as by the characteristics of the profession's internal development, which influenced, over time, the philosophies of the academic program and, consequently, the study plans, the pedagogical model and, in general, the curricular issues on which the formation of its students has been supported. In this sense, this article shows the principal milestones that have guided the study plans of this faculty and emphasizes the curricular transformations that derive from profound processes of reflection and permanent self-evaluation.

As pioneer in the formation of nursing professionals in the region, today – after 70 years – the Faculty continues with the commitment of preparing highly qualified professionals to satisfy the care needs of a society in permanent change. The trajectory described is not shown as a finished process; on the contrary, it leaves it open to permanent reflection to ensure the construction of pertinent and contextualized academic proposals that favor the positioning and visibility of nursing within the setting.

Beginnings of the formation

The need to train nurses in Medellín became evident since early 20th century, however, only until 1950 was the first school of nursing created, under the direction of the religious community of the Sisters of the Presentation, whose scientific knowledge and technical capacity were backed by Universidad de Antioquia.

As with other institutions preparing nurses at the time in the country, the study plans had a three-year duration and granted the general nursing degree, which would today correspond to a technological formation. The first study plan was constituted by an offer of basic assignments, with eminently biological foundation, whose contents were determined by the professors of the time, who were mostly physicians, leaving them to decide the knowledge the nurses had to learn. In turn, the religious instructors had to strengthen in the students the skills and procedural abilities to care for patients, under a technical and instrumental logic. Memorization was the fundamental learning method that demanded acritical, silent, and obedient acceptance, which was assimilated through repetition, without including any reflective or analytical element and – much less – of discernment and critique upon such.[1]

Skills, procedural ability, and attitudinal and affective components were the most relevant aspects of the formation process during this time. For the religious, emphasis was placed on training the personnel in passive compliance of the norm, order, discipline, and absolute obedience of the entities considered of superior order, like physicians and priests, values in keeping with their religious principles and the invisible and subordinate role assigned to women. This particular way of thinking, reasoning, and acting was gradually implemented in the formation of the students, amid learning lacking disciplinary and philosophical conceptualizations and by means of thoughtless repetition of theory and practice, within the disciplinary framework of pastoral power[2] that shaped their subjectivity, where everything was assimilated as something natural and non-problematic.

Parallel to this formation experience, the offer of health services in the country was influenced by the Flexner model, which grouped patients according to type of diagnoses, classifying them by specializations, under the premise of considering the human body as a set of systems disconnected from each other, isolated from its social environment, which is why disease was seen as an aggregate of signs and symptoms, whose treatment was similar independent of the person. This model was implemented in Colombia, following recommendations by the North American medical missions that visited the country in the early 1950s and was determinant for the adoption of an education model in medical schools throughout Latin America and, through these, in the schools of nursing.[3] This was how the formation of the health staff, and in this case nurses, placed disease at the core, with a predominantly curative practice that considered the hospital as its principal scenario.

The strength of the Flexner proposal, added to poor conceptual development nursing had in Colombia, strengthened the positivist paradigm in the theoretical and practical formation imparted in the school during the early 1950s, with technical-scientific foundation exclusively biological and organicist and an ordering of the study plan supported on the scheme of medical specializations, with which the distorted imaginary of the nurse was strengthened, as an aide to the physician.[4] Although the study plan of the School of Nursing at la Universidad de Antioquia had its first modification by late 1950s, this obeyed more the need manifested by the students of diminishing their academic load, than the scientific, curricular, or pedagogical developments that led to a change in its orientation.[5]

Approach to public health as a new reality

During early 1960s, the country posed the political need to plan health and education in centralized manner, articulating them the planning of socioeconomic development. This was a response to the orientations by the Inter-American Economic and Social Council and by the Organization of American States, which in the country took shape in the so-called Alliance for Progress, seeking to respond to the political, economic, and social problems in Latin America, given the region's social inequality and the mandates characteristic of the cold war. For the country, this implied stopping the potential influence of the socialist movement facilitated by the success of the Cuban revolution in 1959.[6]

The formation of the health staff was one of the most relevant issues in Colombia's planning intention, in relation with the assignment and use of resources. Specifically for nursing, characterization studies were begun, which evidenced that the highest percentage of graduate nurses was concentrated in capital cities, the majority in the hospital area, and very low percentage in outpatient services.[7] These results showed the importance of redirecting nurses toward the rural area, which led to the idea of implementing the compulsory social year immediately after the students finished their studies, which, additionally, would permit broadening the health care coverage. Moreover, as part of the planning policy promoted by the

United States, the Inter-American Cooperative Public Health Service was created, aimed at technical and financial support to train technicians in public health. With these means, the technical guidelines were oriented and defined to face the main problems in this area, from a hygienist conception,[6] which considers disease a consequence of exposure to inadequate environmental conditions that can be corrected hygienic means.

This policy influenced decisively on the orientation of the formation and exercise of the nurses, during a period in which an important number of international advisory consultants, especially North American, visited institutions forming nurses in the country, including the School of Nursing at Universidad de Antioquia. Simultaneously, training of nurses in the United States was favored, through scholarships granted by international health organizations, like the Pan-American Health Organization and foundations, like the Rockefeller and Kellogg foundations.[6]

By this time, the revision of the study plans from the schools of nursing in Latin America, conducted by a group of nursing professionals supported by the World Health Organization, evidenced the lack and/or marginality of contents related with public health, transmissible diseases and psychiatry and, in turn, highlighted as the principal flaw the inadequate formation of nurses for their performance in professor and administrative functions.[5] This was reaffirmed in the 1961 Seminar on Nursing Education held in Paracas, Peru; as of that moment, the professor role was included as part of their functions.[7] For the School of Nursing at Universidad de Antioquia, this implied a rupture in the orientation toward training in technical procedures to meet the demands of the medium, which the graduates already manifested openly.

Thus, in 1963, the study plan was revised and a new proposal was aired, which incorporated and strengthened public health and mental health, adjusting the contents to the hygienist trends of health care. Public health acquired a leading role, formation was aimed at strengthening skills in actions of health prevention and recovery, supported on epidemiology and biostatistics, which later was reflected on the institution's academic and research production. Mental health began to glimpse a turn toward the social and community.[8]

By 1965, following the orientations of the Colombian Association of Faculties of Nursing (ACOFAEN, for the term in Spanish) the complementary program of the Nursing degree was created. This implied offering an additional proposal to the three-year technological formation, which strengthened areas of administration, teaching, with research elements, including new orientations of caring for healthy individuals, with a preventive look where disease continued being the center. This new orientation toward caring for the healthy individual, necessarily led to adopting new pedagogical strategies for the teaching-learning process, propitiating the development of extramural teaching models. The degree in Nursing accredited professionals to manage nursing departments and work with health and education programs in the area, which also gave free access to graduate studies, like specializations and master's.[5]

Enhancement of the community practice

During the 1970s, the economic crisis in Latin America obligated countries to reduce drastically public expense, with disastrous consequences for social services and among them health services, which is why it was necessary to adopt health systems that, in spite of being more rational, permitted achieving universal coverage. With this intention, the World Health Organization and the World Bank prioritized programs in Primary Care or Basic Health Services that used simple and affordable procedures that enabled the maximum use of scarce resources available.[6]

In coherence with this orientation, Colombia broadened health coverage to the least protected

areas and the compulsory social service was institutionalized. In 1977, it was legalized as a requirement, which justified in the School of Nursing implementation of the rural practice of students in senior year.[5] Contact with the social reality of the communities was a fact that transformed the vision on the origin and care of health and disease, upon understanding that these phenomena were closely related with the sociocultural, political, and economic contexts of the people, which explained their complex and multidimensional nature, not reducible to exclusively biological or physiological explanations, or to the exploration of isolated and circumstantial phenomena.[4]

This comprehension stirred great interest in the study of the existing relation between disease and society, a stance assumed by the interdisciplinary movement of social medicine in Latin America.[4] Several professors from the School of Nursing had a leading role in the gestation and development of this movement in Colombia and specifically in Medellín through a group led from the National Faculty of Public Health at Universidad de Antioquia, which managed to energize academically the school with profound reflections that showed the need to transcend from a merely clinical, individual, biological, and positivist vision to nursing practice with greater critical conscience and an increasingly broader and humanistic vision of health and of the social context.

This panorama revealed the urgency for a curricular reform in the general nursing program and in the degree program. On one side, recognition and increasing acceptance of the social current in the health area and its questions of the conceptual and methodological bases that guided the offer of services, favored the entry of new more comprehensive and encompassing concepts; and on another, the implementation of new policies in the health and education areas, related with broadening the coverage, strategies of primary care, and community participation. Thus, these favored areas, like public health, mental health, social medicine, environmental sanitation and health administration. As response to this need, after multiple debates, the proposal was consolidated of a new study plan that sought to transcend the clinical, individual, biological, and positivist view toward a more social conception of the nursing practice. A new conceptual framework guided the formation in the school, giving way in care to clinical care, as well as to the social and the collective.

Based on the natural and social history of disease, this new study plan was oriented by levels of growing complexity, considering the healthy or sick individual in his social and community life, under a concept of disease prevention, treatment, recovery, and rehabilitation.[5] Explicitly, recognition is granted to the four performance areas nursing professionals have: care, teaching, administrative, and research. In this sense, students begin to recognize themselves as active and purposeful subjects; and professors as counselors and guide. Thus, entered the concept of co-responsibility with great relevance, which modified the teaching-learning strategies. Responding to an integrating conception, the change of the study plan in 1978 sought greater articulation through the establishment of courses from basic sciences, epidemiology, nutrition, administration, and mental health, as transversal to the academic program.[5] The new study plan, approved amid resistance and fear of abandoning the traditional schemes and opening the mind to new concepts and methods favored the creation of a unique four-year program leading to the Nursing degree, approved in 1980 by the Colombian Institute for the Promotion of Higher Education (ICFES, for the term in Spanish). Consequently, in May 1981, the Superior Council at Universidad de Antioquia approved the transformation of the School into Faculty. [5]

Enhancement of knowledge

At the start of the 1980s, the Faculty of Nursing establishes for the first time a professional profile that guided the formation of its students, in compliance with the exigency by the ICFES as

condition to certify the program. Reflecting on this profile permitted identifying new areas in which the nursing profession could start to dabble, bearing in mind the possibilities and care needs in the environment, emphasizing on primary health care and in areas, like sports medicine, occupational health and in pre-school, scholar, and adolescent care programs, and care for the elderly. Furthermore, complementing the care, administrative, teaching, and research functions it could perform in the clinical and outpatient areas. This generated a new curricular proposal, approved by ICFES in 1984, with a philosophy and objectives not very different from the program approved in 1980.[5]

Training and qualification opportunities, on the rise for professors from the Faculty of Nursing during the 1980s, were key to strengthen research and the approach to the development of the disciplinary discourse, which had been advancing in other countries around the world, where there was already talk of the importance of the conformation and appropriation of a body of knowledge characteristic of nursing, of a model of conceptual orientation and of innovation and expansion of a new professional role. This secured the idea of implementing and assuming new concepts, besides theories and models in nursing, which impacted the undergraduate study plan and later pushed the creation of graduate programs. A fundamental change was the organization of the study plan outside the medical specializations that till then guided its nominations, to assume the vital cycle as the tracer axis, for example, from obstetrics Gynecology, it went to caring for the mother and child, from medical-surgical to caring for the adult and so on. Besides breaking with the nominations derived from the medical model, the aim was to make explicit the social responses nursing had to provide regarding the health-disease process.[5] By the end of the 1980s, teaching of nursing demanded greater social and political awareness that placed the profession in more autonomous, purposeful, and reflective planes against the social, institutional, and disciplinary needs, contemplating central elements in the formation, like comprehension and strengthening of the disciplinary discourse, continuous formation, professional autonomy, interdisciplinary work, and research as essential source of knowledge.

Complexity of a normative context that redirects the practical exercise of nursing

In 1991, a new Political Constitution was agreed upon for the country, with a perspective of democratization of the State and society, with political, ideological, regional, religious, ethnic, and cultural plurality. Legislation 30 of 1992 established a new philosophy of education, promoting human development through formation processes that stimulate high participation, responsibility, autonomy and self-criticism by the students. All these guided institutions toward a more integral formation, considering the person in its totality, not only circumscribed to the professional development. This new vision required more participative pedagogical models that recognized the capacity of the subjects from their overcoming the limits of automatic repetition of knowledge and lack of professional judgment.

At the start of this decade, the country's health sector underwent an important reorganization in its normativity, with effects on nursing formation and its practice. The proposal founded the social development in the market, without losing sight of the increase in health level with strategies that permit enhancing a health culture, based on promotion and prevention to, thus, improve the efficacy of the sector. The reorganization of the health system was based on the decentralization of health services, assigning responsibility to each municipality and, more specifically, to its maximum health authority from its own territory, which is why effective participation by the community was essential. This proposal increased requirements for human resources in health in the first levels

of care, with notable strengths in management, social participation, health promotion, and disease prevention.[7]

Paradoxically, Legislation 100 of 1993 was characterized by a marked trend toward the privatization of health, under the logic of free enterprise, within the neoliberal reference framework and reduction of the economic intervention by the State. The possibilities that the new constitution granted to the private sector to open their health programs placed free competition on the scene and, from there, the dilemma of competing with quality in providing the service and in programs of human resource formation. Within this scenario, during the early 1990s, the Faculty of Nursing saw a new process of analysis and self-evaluation of the study plan, having as inputs the regulatory scenario, the demands of the University to maintain updated study programs, progress in the scientific foundation of the nursing discipline, and the trends that showed nursing in an important moment of disciplinary and professional transition. According to Velandia,[7] these *trends comprise changes that range from the biological to the bio-psychosocial, from the individual to the group, from the curative to prevention, from the individual to community, from the hospital to ambulatory, from hierarchical to participatory, from the centralized to decentralized, from the quantitative to qualitative, from results to processes, from the regional to interregional, from single disciplinary to interdisciplinary, from sectorial to inter-sectorial, from manual management of data to computation, from closed information to broad and open communication. (p. 168)*

After many debates, in the Faculty of Nursing it was agreed to go from the health-disease concept to that of care, as tracer in the vital cycle, upon recognizing care as the object of study by nursing and upon adopting the Nursing Care Process as the methodology *par excellence* and the models and theories of nursing as sources of guidance. Similarly, it was considered that the history of nursing had to be part of the study plan to contextualize care within the development of the profession.[5]

The formation of the subject was assumed as a relevant issue, recognizing the importance of training in values, like respect, tolerance, participation, democracy, freedom, autonomy, development of self-esteem, and criticality among others, which had to be developed and strengthened in par with formation in *doing and knowing.* From the pedagogical, the need was recognized to adopt a more dynamic, flexible, and inclusive model, where students are leading players in their formation process and professors counselors who encourage participation and autonomy. The thematic contents of the courses were selected according to the profile of the alumni and the theoretical-practical integration was promoted seeking to favor learning and relevance was granted to the cognitive and affective goals throughout the formation process, which is why reproduction and repetition of information was left behind as a way of approaching knowledge.[5] Emphasis was placed on integral human development by using participation strategies that would favor the concurrence of all knowledge.[9]

This curricular proposal, made official in 1998, established in its conceptual framework various central categories, like the human being, nursing, nursing care, environment, the human vital process, and learning environments in which nursing care became the central axis around which revolves the formation process, supported on the concepts and theories of nursing, specified in the development of practice in the clinical and community setting.[9]

These elements support the curricular structure from the basic foundation line, constituted by knowledge from different sciences or disciplines that provide to students a cognitive support to access and comprehend more complex processes; likewise, from the professional-disciplinary foundation line, where knowledge is acquired

characteristic of nursing as discipline and as profession (theories, concepts, methodologies, among others), considering the individual clinical and social community dimensions in the professional exercise; and, finally, the deepening line in which management is delved into as a specific area of this profession. The curricular reform of 1998 maintained the four-year formation, which sought to develop in the students, academic and professional skills within the roles of caregiver, researcher, manager and educator,[9] which led in 1999 to obtaining for the first time the Accreditation of Quality from the National Ministry of Education for five years, a process repeated later in 2006 for seven years and in 2013 for eight years.

The first two decades of the 21st century: care needs in a globalized world

Since the first institutional accreditation, the Faculty of Nursing entered a permanent process of self-evaluation of the framework of norms that regulate health and education, but also of the changes and exigencies of an increasingly complex and dynamic context. These evaluations have led to adjustments and modifications in the curricular structure, without undertaking a radical reform. Since 2008, adjustments have been made on the flexibility and social pertinence of the study plan, and in this measure, it has been updated according to specific needs. Currently, work in underway on the fifth curricular plan version, approved since 2017 by the National Ministry of Education. Adjustments during these two decades of the nascent century account for the necessary reflection regarding the pertinence of its study plans to prepare in a globalized world nursing professionals that can respond to an epidemiological profile in transition, to demographic transformations, and to the big social problems that advocate for intersectoral and interdisciplinary work. Inter- and trans-cultural care and social conscience and sensitivity are today key issues in the formation.

Since 2010, the competencies approach was adopted in the formulation of courses from the orientations made by the University, which led to the question of the relevance, articulation, and integration of content and of the methodology employed in the teaching-learning process. Added to this, the results of the program's self-evaluation, conducted in 2012, were key in raising awareness of the need for a more radical change in the faculty's curricular structure. They highlight the lack of indispensable knowledge in the profile of the current nursing professional, like health and mental ailments, care related with old age and aging, strengthening in knowledge and skills in basic nursing procedures, education for health, and political formation, without discarding the need to delve into the family and community health area and continue strengthening management and research. These needs were established in the diagnosis of current care needs performed by the academic community in 2016, when this new reform was decisively promoted.

This proposal of change considered as important element to review the profile of the alumni from the Faculty of Nursing at Universidad de Antioquia, in coherence with the principal challenges or trends proposed for the profession and which must be resolved with formation in the program, without leaving aside the University's commitment to an integral formation, within a process of co-responsibility among the university, family, society, and the subject, which must involve in the formation, besides technical-professional issues, others of socio-humanist order.

The curricular structure proposed, which seeks to stimulate the integration, innovation, interdisciplinarity and interculturality, and flexibility as fundamental principles is grounded on an integrated pedagogical model, which according to Basil Berstein and Mario Díaz,[10] seeks for the diverse contents or knowledge to not go on different paths, but rather maintain an open relationship with each other. Its purposes include achieving the systemic articulation of knowledge, student-

centered education, and significant learning, with emphasis on formative research.

The proposal is structured from three components: basic, disciplinary, and professional and linked to them, the socio-humanistic, investigative, and innovative and caring integrating nuclei and the academic nuclei in which knowledge is grouped into areas of knowledge or problems, like social, human, and care sciences, and formative research among others, and from here the thematic nuclei that make up the courses. Both the components and the nuclei are articulated together in the design and implementation of the courses.[11] From this route, the program's formation purposes are deployed, in a relation of interdependence and not of hierarchy.

The new curricular structure is organized in a study plan that goes from 8 to 10 academic semesters. In it, research and innovation, health and mental ailments, and family and community health are configured as important nuclei, which were not visible in the prior study plan. Likewise, courses of basic and advanced nursing processes and procedures are integrated, as well as the course on aging and old age. From the pedagogical point of view, a model is proposed that highlights the participation of students in their learning process, which conceives the professor as a guide or advisor. Moreover, other teaching methods are strengthened, using the new communication and information technologies (CIT).

From the point of view of flexibility, a bank of elective courses is proposed that allows strengthening or enhancing the knowledge acquired in the compulsory courses, according with the specific interests of the students, which is also made visible through lifting the requirements and pre-requisites, free election of the emphasis in an area for the clinical professional practice and flexible research.

Challenges

The new study plan seeks to go from a pyramidal approach where the areas of knowledge were divided hierarchically, (basic foundation, disciplinary foundation, and professional foundation), to an articulating structure that does not see knowledge in stages but complementary and in network, which – thus – permits make visible the need to establish methodologies that permit integrating and strengthening knowledge, from *being*, *knowing* and *knowing-how*, which gradually are acquired during the formation process, not as finished processes, but, on the contrary, open to change and to the transformations that the world imprints in their professional work.

Today, the characteristics of the context show us the need for a globalized study plan where interculturality is protagonist. In this sense, multilingualism is essential, as well as the increase of ICT as a pedagogical tool. All this favors the homologation of professional degrees; nevertheless, demanding – in turn – a large component of flexibility that considers a student that, besides being a worker, is a citizen of the world.

In addition, other academic processes are strengthened related with internationalization, cooperation, taking advantage of the existence of agreements with universities from other countries and regions, which permit two-way exchange of professors and students, membership to international networks of nursing and health and, from this logic, carry out academic events, multi-center research in addition to consulting and advising.

Conclusions

As described at the beginning, this text has shown how in each period the characteristics and exigencies of the context, which with respect to the formation of the nursing professionals, is an aspect that has permeated their formation, which has been subject to political, cultural, social, academic, and economic inputs that have guided

the objectives and philosophy of the program over time, its study plans and pedagogical models and, in general, the internal formation dynamic.

In that sense, the Faculty of Nursing shows that its development has been parallel with theoretical and epistemological discussions on health and disease, existing norms and all its endogenous development.

Development of the faculty during these 70 years has taken place within a dynamic of changes and transformations of the society, with a permanent commitment to consolidate highly qualified training programs of nursing professionals, with capacity for constant transformation to respond critically and innovatively to the care needs of society during each period.

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Adherence to Secondary Prevention and Influential Factors in Individuals with Coronary Angioplasty

Original article

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Adherence to Secondary Prevention and Influential Factors in Individuals with Coronary Angioplasty

Abstract

Objective. To explore the relation between adherence to secondary prevention and factors that influence on said adherence in people with acute coronary syndrome, who underwent percutaneous coronary angioplasty in a clinic in Medellín. **Methods.** Cross-sectional study on a random sample of 128 volunteer patients. A questionnaire was used for sociodemographic variables, the "Scale to measure therapeutic adherence for patients with chronic diseases, based on explicit behaviors" by Trujano, Vega, and Nava and the "Instrument to evaluate adherence by patients according to influential cardiovascular risk factors" validated by Consuelo Ortiz. **Results.** Socioeconomic factors influenced in very low manner on the adherence to secondary prevention; factors related with the therapy did so moderately and patient factors influenced in low manner. No relation was found between the health provider factor and said adherence. **Conclusion.**

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Factors exist that influence in a lesser or higher measure on adherence to secondary prevention and which must be recognized in people with coronary angioplasty to design strategies to improve this aspect of self-care.

Descriptors: treatment adherence and compliance; secondary prevention; self care; acute coronary syndrome; angioplasty; estudios transversales.

Adherencia a la prevención secundaria y factores influyentes en personas con angioplastia coronaria

Resumen

Objetivo. Explorar la relación entre la adherencia a la prevención secundaria y los factores que influyen en dicha adherencia en personas con Síndrome Coronario Agudo, a quienes se les realizó angioplastia coronaria percutánea en una clínica de Medellín. **Métodos.** Estudio de corte transversal en una muestra aleatoria de 128 pacientes voluntarios. Se utilizó un cuestionario para variables sociodemográficas, la "Escala para medir la adherencia terapéutica para pacientes con enfermedades crónicas, basada en comportamientos explícitos" de Trujano, Vega y Nava y el "Instrumento para evaluar la adherencia de los pacientes según factores influyentes de riesgo cardiovascular" validado por Consuelo Ortiz. **Resultados.** Los factores socioeconómicos influyeron de manera muy baja en la adherencia a la prevención secundaria, los factores relacionados con la terapia lo hicieron en forma moderada y los factores del paciente influyeron de manera baja. No se encontró relación entre el factor del proveedor de salud y dicha adherencia. **Conclusión.** Existen factores que influyen en menor o mayor medida en la adherencia a la prevención secundaria y que deben ser reconocidos en las personas con angioplastia coronaria para que se diseñen estrategias para el mejoramiento de este aspecto del autocuidado.

Descriptores: cumplimiento y adherencia al tratamiento; prevención secundaria; autocuidado; síndrome coronario agudo; angioplastia; cross-sectional studies.

Adesão à prevenção secundária e fatores influenciadores em pessoas com angioplastia coronária

Resumo

Objetivo. Explorar a relação entre a adesão à prevenção secundária e os fatores que influenciam essa adesão em pessoas com Síndrome Coronariana Aguda, submetidas a angioplastia coronária percutânea em uma clínica de Medellín (Colômbia). **Métodos.** Estudo transversal em amostra aleatória de 128 pacientes voluntários. Foi utilizado um questionário para variáveis sócio-demográficas, a "Escala para medir a adesão terapêutica para pacientes com doenças crônicas, baseada em comportamentos explícitos" de Trujano, Vega e Nava, e o "Instrumento para avaliar a adesão do paciente de acordo com fatores de risco cardiovascular influenciadores" validado por Consuelo Ortiz. **Resultados.** Os fatores socioeconômicos tiveram uma influência muito baixa na adesão à prevenção secundária, os fatores relacionados à terapia tiveram uma influência moderada e os fatores do paciente tiveram uma influência baixa. Não foi encontrada relação entre o fator provedor de saúde e a referida adesão. **Conclusão.** Existem fatores que influenciam em menor ou maior grau a adesão à prevenção secundária e que devem ser reconhecidos em pessoas com angioplastia coronariana para que estratégias possam ser traçadas para melhorar esse aspecto do autocuidado.

Descritores: cooperação e adesão ao tratamento; prevenção secundaria; autocuidado; síndrome coronariana aguda; angioplastia; estudos transversais.

Introduction

Due to coronary cardiopathy, 7.4-million people died in 2015 according to reports by the World Health Organization (WHO).[1] Since 2004, registries indicate that in Medellín this disease is the principal cause of mortality in people over 45 years of age.[2] For patients with Acute Coronary Syndrome (ACS) it is recommended that besides an interventionist management, secondary prevention[3] be applied. Investigations exist aimed at demonstrating the benefits of this, which must be considered by nursing and other health professions for their application; one of these investigations is the study PRESENTE[4] study conducted with 4174 post-infarction patients, showing effectiveness in secondary prevention regarding mortality and re-infarction outcomes with pharmacological treatment, incorporation of patients to the cardiac rehabilitation program, having a beneficial early effect on endothelial dysfunction, as well as diminished adverse effects. However, many times, the results are not those expected due largely to non-adherence by the patient, which is influenced by various factors (socioeconomic, related with the disease, with the treatment, with the health system, and with the patient) that can be favorable or not in this process. In addition, we must recognize that the patient is not the only one responsible for the adherence, but also the health staff, the health system, and regulatory organisms.[5] This is why it is useful to consider the Self-care Deficit Theory by Dorothea Orem, which declares that nursing must generate activities for patients to promote and maintain life, health, and wellbeing;[6] thereby, working for patients and their families to learn what ACS is, promote adherence to secondary prevention – bearing in mind the influential factors, and, over time, evaluate the efficacy of the work done.

This research assumed the definition of therapeutic adherence adopted by the WHO, which states that it is "the degree to which a person's behavior —taking the medication, following a feeding regime, and executing lifestyle changes—corresponds with the agreed recommendations by a healthcare provider."[7] Thus, it is considered that secondary prevention requires patients to have therapeutic adherence. The research sought to broaden knowledge on this theme by exploring the relationship between adherence to secondary prevention and the factors influencing said adherence in people with ACS, who underwent percutaneous coronary angioplasty (ACP) in a clinic in Medellín.

Methods

This was a cross-sectional and correlational quantitative study, with a sample of 128 volunteer patients diagnosed with ACS and who underwent ACP in a clinic in Medellín between October 2017 and February 2018. Data was

collected from three to four months after the event. Participants were selected by performing simple random probabilistic sampling, with 95% reliability and 5% estimated error. The study had the data base of 189 patients and 128 were selected. When gathering the information, it was found that six patients had died, which is why the invitation calls to participate in the research continued until completing the sample.

Eligibility criteria were: women and men > 18 years of age admitted with ACS diagnosis, intervened with percutaneous coronary angioplasty in the clinic, residents in the urban area of Medellín (Colombia). The study excluded those who besides ACP received surgical revascularization. To collect information, initially a written consent was created, but because information was collected via telephone, a call protocol was implemented that followed rigorously a check list to provide clear information to participants fulfilling the ethical criteria, to obtain the verbal informed consent and request data about (i) sociodemographic variables (age, sex, educational level, work situation) and health aspects (weight, height, dependence on care by others, suffering from other diseases), (ii) *Scale of therapeutic adherence for patients with chronic diseases*, based on explicit behaviors created by Trujano, Vega and Nava;[8] this scale has a Cronbach's alpha value of 0.91 and the factorial analysis found it has three factors with seven items each: control of medication and food intake, medical behavioral monitoring, and self-efficacy. This scale has 21 items, whose score ranges from 0 to 100. The score is interpreted, thus: 0 - 33 points, low adherence; 34 – 67 points, moderate adherence; 68 – 100 points, high adherence, (iii) *Instrument to evaluate adherence to treatments in patients with cardiovascular risk factors* validated by Consuelo Ortiz.[9] This instrument reduced from 53 to 24 the items from the scale *Factors influencing on adherence to pharmacological and non-pharmacological treatment in patients with risk factors of cardiovascular disease* by Bonilla and De Reales.[10] This shortened version of the original instrument has a Cronbach's alpha of 0.60. The factors are socioeconomic, those related with the provider: system and health staff, those related with the therapy and those related with the patient. The factor related with the disease characteristics was included in the items of the four factors evaluated. The response options were never, sometimes, or always. The score interpretation is <60% cannot respond with adherence behavior, 60%-79% at risk of not developing adherence behavior, 80%-100% advantage for adherence.

The information was collected through *Google Form* and the SPSS program, version 24, was used for its analysis. Sociodemographic data were analyzed to show a description of the study participants. The qualitative variables used measures of central tendency and dispersion. A bivariate analysis used the Shapiro-Wilk test to check the assumption of normality of the scores of the scales. Upon confirming the assumption, Student's t test and ANOVA were used to identify if influential factors are related or not with therapeutic adherence. Finally, Pearson's correlation coefficient was used to determine the relation between the scores from the scale of influential factors and scores from the scale of therapeutic adherence. A 5% significance level was used for all the statistical tests.

The Human Ethics Committee of the Faculty of Health of the Universidad del Valle endorsed the study and the clinic's Research Ethics Committee authorized it.

Results

It can be noted in Table 1 that the general characteristics prevailing in the study sample were: mean age of 65.12 years, 65.6% were of male sex, 57.8% were married, 63.2% had secondary or higher education, 26.1% was retired, 81.5% belong to socioeconomic levels 1 to 3, 61% live

in their own home, and 89.1% receive economic monthly income of less than two Legal Minimum Wages (LMW). It was found that 91.3% of these patients live with at least one person, 68.5% are not dependent on care, 84.3% suffer from other diseases (arterial hypertension, diabetes mellitus, and hypothyroidism), 38.1% have had cardiology control in another institution, and 91% have self-perception of adherence between good and excellent, and mean BMI was 25.07.

Table 1. Sociodemographic characteristics and health aspects of 128 patients with acute coronary syndrome with percutaneous coronary angioplasty

Variables	Values
Age; mean ±SD (Minimum - Maximum)	65.1±10.6 (35-90)
BMI; mean ±SD (Minimum - Maximum)	25.1±3.7 (15.8-35.8)
Sex; *n* (%)	
Female	44 (34.4)
Male	84 (65.6)
Marital status; *n* (%)	
Single	11 (8.6)
Separated	10 (7.8)
Widowed	17 (13.3)
Married	74 (57.8)
Divorced	5 (3.9)
Common law	11 (8.6)
Educational level; *n* (%)	
Primary	46 (36.8)
Secondary	35 (28.0)
Technical/Technological	15 (12.0)
University	11 (8.8)
Graduate	1 (0.8)
Other	17 (13.6)
Home ownership; *n* (%)	
Rented	22 (17.9)
Own	75 (61.0)
Family	24 (19.5)
Other	2 (1.6)
Socioeconomic level; *n* (%)	
1 to 3	97 (81.5)
4 to 5	18 (15.1)
6	4 (3.4)
Work situation; *n* (%)	
Full-time job	15 (13.0)
Part-time job	2 (1.7)
Unemployed in search of a job	8 (7.0)
Unemployed, not looking for work	26 (22.6)

Table 1. Sociodemographic characteristics and health aspects of 128 patients with acute coronary syndrome with percutaneous coronary angioplasty (cont.)

Variables	Values
Independent	21 (18.3)
Retired (work)	30 (26.1)
Pensioned (disease, family)	13 (11.3)
Monthly economic income in Legal Minimum Wages (LMW)*; n (%)	
Less than the minimum wage	15 (27.3)
1 to 2	35 (63.6)
3 or more	5 (9)
People living with; *n* (%)	
0	12 (9.7)
1	22 (17.7)
2 to 3	51 (41.1)
4 to 5	29 (23.4)
6 or more	10 (8.1)
Dependent on care from other people; *n* (%)	
No	87 (68.5)
Totally	24 (18.9)
Partially	16 (12.6)
Suffers from other diseases; *n* (%)	107 (84.3)
Has had cardiology control in another institution; *n* (%)	48 (38.1)
Perception of the adherence process; *n* (%)	
Excellent	71 (55.5)
Good	48 (37.5)
Regular	8 (6.3)
Bad	1 (0.8)

* 1 LMW for 2018 = $781 242 Colombian pesos. Note: 1 US Dollar = 3623 pesos

With respect to the results in the scale of therapeutic adherence for patients with chronic diseases based on explicit behaviors, it was found that patients in general have high adherence with 96.1%, and – likewise – in each of the three factors, medical behavioral monitoring obtained a score of 97.7%, followed by the control on the intake of food and medications with 91.4%, and self-efficacy with 89.1%.

Table 2 displays the mean scores and standard deviations of the factors from the scale of therapeutic adherence in function of some aspects related with health. It is highlighted that dependence on a caregiver is a factor related significantly with adherence to medical behavioral monitoring and self-efficacy, although not positively, that is, that those patients who depend totally on care from another person have lower medical behavioral monitoring than those who do not depend or depend partially on another person. It was also identified that patients attending other institutions for cardiology control have lower self-efficacy compared with patients

who attended the institution where the study was conducted, a finding that was also significant. The patient's perception on the adherence process is significantly related with the three factors of therapeutic adherence. The other items studied had no significant relation.

Table 2. Factors of therapeutic adherence in function of some factor aspects related with health

Aspects	Categories	Control of food and medication intake		Medical behavioral monitoring		Self-efficacy	
		Mean ±SD	*p*-value*	Mean ±SD	*p*-value*	Mean ±SD	*p*-value*
Dependence on care from other people	No	89.5±13.6	0.409	97.0±7.0	0.008	90.7±13.1	0.008
	Totally	84.9±19.7		90.1±16.2		80.1±20.9	
	Partially	88.4±12.4		95.4±6.2		86.1±12.7	
Has had cardiology control in another institution	No	90.2±13.9	0.077	96.4±9.3	0.196	90.7±14.7	0.018
	Yes	85.4±15.9		94.0±10.2		84.0±15.7	
Perception on the adherence process	Excellent	91.3±11.5	<0.0001	96.6±7.8	0.047	90.5±12.2	0.009
	Good	88.0±14.1		95.2±11.2		87.6±15.9	
	Regular	66.8±25.6		87.5±12.1		71.6±25.8	
	Bad	92.9		85.7		85.7	

* Student's t test and ANOVA test

Table 3 shows the Pearson correlations among the scores from the scales of influential factors and scores from the scale of therapeutic adherence. The following mentions the statistically significant correlations:

Regarding socioeconomic factors, a low positive relation was found with adherence to intake of food and medications, and a very low positive relation, which indicates that better socioeconomic aspects are related with adequate administration of medications and diet, and with better therapeutic adherence, although to a lesser measure. With respect to factors related with therapy, this yielded a moderate positive relation with adherence to medication intake control, medical behavioral monitoring, self-efficacy, and to therapeutic adherence in general. Hence, better aspects of therapy improve adherence to the consumption of appropriate foods; also, correct administration of medications favors effective behaviors to follow medical recommendations and the self-efficacy; that is, it leads to better therapeutic adherence.

With respect to patient-related factors, a low positive relation was noted with adherence to medication intake control, to self-efficacy, and to therapeutic adherence in general; and a very low positive relation with medical behavioral monitoring. Thereby, better aspects related with the patient favor an appropriate diet and administration of medications, the patient's self-efficacy, and therapeutic adherence; and, thus, favors effective health care behaviors, according to medical indications, although in lower measure. In the other correlations, no statistically significant results were found.

Table 3. Relation between associated factors and therapeutic adherence

Adherence factors	Factors influencing on adherence			
	Socioeconomic	Systems and health staff	Therapy	Patient
Intake of food and medications	0.271*	0.098	0.536*	0.237*
Medical behavioral monitoring	0.047	0.047	0.528*	0.187*
Self-efficacy	0.083	0.038	0.444*	0.226*
Therapeutic adherence	0.179*	0.078	0.619*	0.274*

* *p*-value <0.05

Discussion

The research had a higher proportion of men with el 65.6%, which coincides with other studies, like that reported by Chavarriaga *et al.,*[11] and by Ferreira-González,[12] who mentions in "Epidemiology of coronary disease" that the prevalence of heart conditions has shown strong male dominance. Regarding age, the mean was 65.2 years, coinciding with data published by the American Heart Association[13] where the mean age of the first heart attack is 65.3 years for men, and 71.8 years for women.

The population studied has a protection factor related with the housing variable, which in highest proportion was owned; adding to this the fact that 58% of the patients correspond to socioeconomic levels 3 and above; however, it is concerning that the lowest socioeconomic levels of the population show a high percentage (42%), comparable numbers of the data registered by the Mayor's Office of Medellín,[2] who report that 21.9% are in socioeconomic level 1 and 48% in level 2; these patients need to receive special care, given that for the most part they only have income lower than two minimum wages, which makes one think that this fact implies difficulties to care for basic needs, like access to an optimal nutrition, affording medications in cases where the insurance carrier does not provide them, and attending medical control appointments, among others. This aspect must be kept in mind to provide other alternatives.

With respect to the company the patients keep, of any type, most of the study subjects are accompanied and have family support; however, no necessarily do they always receive care from their relatives. Relating this finding with la Self-care Theory by Orem, this result gives a perspective that patients are self-care agents, that is, "deciding what they can and should do for their health and wellbeing over time";[14] it is expected that the self-care capacity of patients must have improved after discharge and that according to the individual condition of each patient does not depend on others to adhere to secondary prevention; it is highly likely that this fact demonstrates the aid and education provided by nursing to patients regarding their self-care.

It is important to highlight that the cardiology control appointment after discharge depends on the insurance carrier, which decides if the patient continues the controls in the clinic or in another institution. It was evidenced that those attending another institution see adherence affected in the self-efficacy factor due to the change of institutions that possibly presents differences in their management protocols; this is important because some administrative policies could generate discomfort in patients need continuity

with the treating cardiologist, given that said cardiologist already knows their health-disease process; additionally, as demonstrated, this situation affects the adherence of the individuals in the present study, specifically in the self-efficacy factor; in this regard, the WHO[7] confirms that when care is received by the same professional, as time goes by patients demonstrate better therapeutic adherence.

Likewise, in the variable asking if the patient depended on the care from another person, it was detected that said dependence affects the factors: medical-behavioral monitoring and self-efficacy. This gains importance because the patient's caregiver (partial or primary) fulfils an indispensable role on adherence; however, upon evaluating the items from the scale, comprising said factors, it is easy to note that there are items in which the caregiver cannot fulfil this role, like, for example, be able to watch for symptoms, feel confident if the doctor demonstrates knowing the disease or feel sure of the disease he has and stick to the treatment, given that these are very personal functions. In addition, the other items from these factors can also be affected with overburden implied by caring for another person; that is, being attentive of the individual activities and the activities of the other, like administering medications punctually, taking the patient to scheduled exams and attending medical appointments, as expressed by Carreño *et al*.,[15] this overburden implies "physical fatigue, which has repercussions in the decrease of their daily activities due to lack of energy and in the alteration of their cognitive functions"; finally, by self-efficacy being a behavior influenced by the expectation of success, it becomes something personal and is affected when depending on another.

The study acknowledges that participating patients had high adherence with 96.1%, which does not coincide with that reported by other studies where adherence is lower; however, the study by Rojas and Flórez[16] with 180 patients with acute myocardial infarction found that those with greater adherence were patients with less than two years (58%) or more than five years (63%) after the event and merely 2% of the patients who had between six months and one year were classified as adherent. Hence, it is necessary to bear in mind that this study was conducted only between three and four months after the medical discharge and the fact that the results obtained do not coincide with other investigations reporting deficient adherence to pharmacological and non-pharmacological treatment, the following two reasons are submitted to discussion: the first are the differences in the sociodemographic characteristics and size of the sample implemented, which can affect the results; but above all, the second reason, considering that the factors related with adherence vary over the time transpired since the diagnosis, and with it the impact upon said adherence. The adherence process is a complex process that can depend even on the moment patients are going through, given that the closeness of this experience with the Acute Coronary Syndrome can sensitize and motivate them to be adherent; however, the passage of time and the sensation of health may cause patients not to be rigorous with the treatment and falter; therefore, it is submitted to discussion that this study teaches us the importance of providing continuity and paying attention to patient's adherence over time, being an important task of nursing professionals to motivate patients to not abandon the treatment and maintain adherent; thus, following the recommendations by Orem,[17] who states that "self-care must be applied deliberately and continuously over time, always in correspondence with the regulation needs individuals have in their stages of growth and development, states of health, health characteristics or specific developmental phases, and environmental factors".

The purpose of this study sought to determine the relation between influential factors and adherence to secondary prevention, which is measured through Pearson's correlation and through this it was evidenced that: the highest relation that took place is that between the factors related

with the therapy and adherence, with this being a moderate positive relation; that is that better aspects related with the patient's knowledge about taking medications, distances to attend control appointments, customs on foods and exercise, occupations in and out of the home, lead to better patient adherence regarding medication and food intake, medical behavioral monitoring, and self-efficacy. It must be highlighted that within this aspect, nursing work is implicit, given that the education it provides is aimed at sensitizing the patient with respect to customs difficult to change, strengthening knowledge about medications, emphasizing on the importance of not abandoning the treatment and on seeking alternatives so they won't forget to take the medication. Likewise, Orem[6] – through the educational support system mentioned in the theory – considers that people need to guided and educated to achieve self-care and the nurse plays a fundamental role.

Thereafter, we find the relation between patient-related factors and adherence, with this being a low positive relation with each of the adherence factors, except for the relation with the medical behavioral monitoring that was very low; that is that the less convinced patients are regarding the benefits of the treatment, the higher their interest in knowing about their health and how to care for themselves, and their conviction about the responsibility of health care, the greater will be the patient's adherence with respect to medication and food intake, medical behavioral monitoring, and self-efficacy. In this regard, in the research by Moral and Cerda[18] in patients with diabetes, they coincide in that higher perception of improvement and control of the disease means less problems of adherence to treatment.

With respect to the relation between socioeconomic factors and adherence, only a low positive relation was found between socioeconomic factors and medication and food intake; in other words, having the economic availability to meet the basic needs, the capacity to afford medications, to travel to the place of consultation, read written information about the disease, having the money to modify the diet, as well as having support from the family and close friends, favor adherence to ingest recommended foods and take the medications prescribed. In this sense, the study by Chacon *et al.,*[19] in Chile with hypertensive patients evidenced the relation between adherence to the treatment and the socioeconomic factor, which is logical, given that secondary prevention demands a strict diet (diminished consumption of salt, sugar, carbohydrates, and fats) and if the patient has economic resources and family and social support it will be easy to access this type of diet. Similarly, if the insurance carrier does not provide the medication prescribed and the patient has the economic capacity to acquire it, optimal adherence could be achieved. Although it was not possible to demonstrate existence of a significant relation between socioeconomic factors and the other adherence factors, a very low positive relation does exist between socioeconomic aspects and therapeutic adherence, which could be explained by the fact that for patients to have adequate adherence, the socioeconomic aspects do not influence so much to achieve medical-behavioral monitoring and self-efficacy.

It was not possible to demonstrate the presence of relation between the factors related with the provider (systems and health staff) and adherence, which does not coincide with that mentioned by the WHO and other investigations that report the influence of the provider on adherence, including the work by governmental entities, insurance carriers, and the health staff. In the research by Ortega and Vargas,[20] this factor showed higher difference among the different groups of situation of adherence, considering that the relation existing between patients and the health provider is quite important on the degree of adherence. With respect to this, the WHO[7] is emphatic in stating that the health care system impacts potentially on the patients' adherence behavior. In factors related with the provider, communication is highlighted between patients and the health staff, which is essential to achieve the patients' motivation and

participation in their health process; moreover the WHO[7] encourages communication that keeps patients participating in health care, considering it a simple and economic strategy that improves therapeutic adherence.

This research found differences in self-efficacy among patients who continued controls with cardiology in the clinic where this study was conducted, and those who continued in another institution; thereby, in this case the health staff did influence on the self-efficacy of patients. This does not mean a contradiction in the findings, given that it must be kept in mind that the finding of no positive correlation existing between the provider and self-efficacy was performed with all the patients grouped, that is, patients who attended another institution and those who continued controls with cardiology in the clinic, hence the results change. Upon not evidencing positive correlation between the factors related with the provider and the factors integrating adherence, both the institution where the study was conducted and the insurance carriers must know these findings for visibility implementation regarding the relevance of the adequacy of health care equipment and systems in their entirety and context. Likewise, it is fundamental for nursing to know of the factors influencing on adherence by each patient, to plan and carry out the educational intervention, to generate positive impact on patients and for this to be reflected on their adherence.

Knowing the influence exerted by socioeconomic factors, provider (system and health staff), therapy, patients, and disease on people with ACS, the work nursing must perform favors in boosting adherence to secondary prevention. The conclusion of this study is that, although each person's process is different, factors exist that influence to a lesser or greater extent and which must be recognized by the health staff to take action in said regard. The work performed must be constant to guarantee the individuals do not falter in the adherence with the passage of time.

For this study, the principal limitation was achieving personalized communication with the patients, given that the purpose implied that the information would be obtained after discharge, which was complicated to make them return to the institution to apply the evaluation instruments; therefore, the call protocol was followed, which had been applied in prior investigations in the clinic and had been successful.

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Needs for family caregivers of Cerebrovascular Accident survivors

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Needs for Family Caregivers of Cerebrovascular Accident survivors

Abstract

Objective. To know the needs of family caregivers of Cerebrovascular Accident survivors. **Methodology.** This is a qualitative, descriptive, and exploratory study. Data were collected from 37 family caregivers of Cerebrovascular Accident survivors from a city in the interior of Bahia, through an interview using a semi-structured form, between September 2017 and March 2018, and submitted to thematic content analysis. **Results.** Three categories emerged: the early need for health education on the disease and care for family caregivers; the need to restructure care for family caregivers; 3) family caregivers need free time for social activities and (self)care. **Conclusion.** Caregivers have basic needs for health care and social interaction, which can enable by educational health interventions.

Descriptors: needs assessment; caregivers; family; stroke; homebound persons; survivors; qualitative research.

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Necesidades de los cuidadores familiares de los sobreviventes de accidente cerebrovascular

Resumen

Objetivo. Conocer las necesidades de los cuidadores familiares de sobrevivientes de accidente cerebrovascular. **Metodología.** Estudio cualitativo, descriptivo y exploratorio. Los datos se recogieron de 37 cuidadores familiares de sobrevivientes de accidente cerebrovascular de una ciudad en el interior de Bahía, mediante una entrevista semiestructurada, entre septiembre de 2017 y marzo de 2018, y sometidos al análisis temático de contenido. **Resultados.** Surgieron tres categorías: 1) la necesidad temprana de educación en salud sobre la enfermedad y la atención a los cuidadores familiares; 2) la necesidad de reestructurar la atención a los cuidadores familiares; 3) necesidad de tiempo libre para los cuidadores familiares para las actividades sociales y (auto) cuidado. **Conclusión.** Se encontró que los cuidadores tienen necesidades básicas de atención en salud e interacción social, lo que puede ser posible gracias a las intervenciones educativas en salud.

Descriptores: evaluación de necesidades; cuidadores; familia; accidente cerebrovascular; personas impossibilitadas; sobrevivientes; investigación cualitativa.

Necessidades de cuidadores familiares dos sobreviventes de acidente vascular cerebral

Resumo

Objetivo. Conhecer as necessidades de cuidadores familiares dos sobreviventes de Acidente Vascular Cerebral. **Metodologia.** Estudo qualitativo, descritivo e exploratório. Os dados foram coletados com 37 cuidadores familiares dos sobreviventes de Acidente Vascular Cerebral de uma cidade no interior da Bahia, por meio de entrevista com uso de formulário semiestruturado, entre setembro de 2017 e março de 2018, e submetidos à análise de conteúdo temática. **Resultados.** Emergiram três categorias: necessidade precoce de educação em saúde sobre a doença e cuidados à cuidadores familiares; necessidade de reestruturação da assistência à cuidadores familiares; necessidade de tempo livre aos cuidadores familiares para as atividades sociais e (auto)cuidado. **Conclusão.** Verificou-se que os cuidadores possuem necessidades básicas de atenção à saúde e interação social, que podem ser viabilizadas por intervenções educativas em saúde.

Descritores: determinação de necessidades de cuidados de saúde; cuidadores; família; acidente vascular cerebral; pacientes domiciliares, sobreviventes; pesquisa qualitativa.

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Introduction

Cerebrovascular Accident (CVA) is a neurological and degenerative disease with two different phases, the acute phase characterized by the patient's transition from hospital to home, and the chronic phase, which begins at six months post-stroke and lasts over time.[1] The limitation of these phases is important due to the varied biopsychosocial changes in the short and long term of the survivors of this disease and, concomitantly, the demands for specific care that sometimes need support from others such as family caregivers. Most stroke survivors have cognitive, psychological, and motor deficits that reduce their ability to perform basic daily activities and social participation,[2] making them dependent on their families to provide care during community rehabilitation. As a consequence, these caregivers experience the burden of care, highlighted by the deterioration of physical and mental health, which affects the worsening of their Quality of Life (QOL).[3]

These caregivers need to receive continuous support from a formal support network, from the moment of hospital admission to the return home, including assistance to their health and training for care.[4] However, it is not standard clinical practice for services, and health professionals offer this support to the caregivers. Studies point out that adequate social support must be preceded by the investigation of their needs,[5-7,9] especially in the chronic phase of the CVA because the caregiver's burden is still critical in this phase, especially due to lack and/or incipience interventions in health.[10] To describe these needs, Bradshaw developed the concept of felt and expressed needs. The felt needs represent the individual desires and want under the perception of each person and the expressed needs are the needs of a person looking for a health service,[11] and they are strongly recommended by systematic reviews.[12,13] Considering this scenario, the objective of this study is to know the needs of family caregivers of Cerebrovascular Accident survivors.

Methods

This is exploratory and descriptive research with a qualitative approach. It is part of a larger project entitled "Perception of health professionals and family caregivers about the care of people after a Cerebrovascular Accident". In this, the needs of caregivers were investigated to subsidize the planning and construction of a social support intervention for families.

Family caregivers of Cerebrovascular Accident survivors participated in the study. The data collection occurred with saturation, which is a criterion commonly used in qualitative research to determine the sample from the moment when data collection no longer clarifies the object of study.[14] The

inclusion criteria adopted were: being 18 years old or older, declaring to be the primary caregiver of a family member dependent on care after the stroke, living in an urban area during the production of the data, and presenting care time between six and 50 months (considered a chronic phase stroke). The choice of the chronic phase of the stroke was related to learning the long-term care needs of dependent people who have already gone through the acute often unexpected and (re) adaptation phase.

The selection of the participants was after the initial identification of CVA Accident survivor's dependent on home care. Thus, we searched the medical records of a public hospital and the 17 Basic Health Units (UBS), located in the urban area of the city of Guanambi, in the interior of Bahia, for people with a medical diagnosis of a stroke. Subsequently, we scheduled a home visit with family caregivers to identify stroke survivors who were in the chronic phase of the disease and with functional dependence. In the health services records, we identified 14 people from the BHU and 23 from the hospital, totaling 37 people. All caregivers experienced the act of caring in both health units, taking care of patients in the chronic post-CVA phase, and were monitored by the UBS professionals.

To evaluate the functional dependence of CVA survivors, we used the Basic Activities of Daily Living (BADL) scale developed by Sidney Katz.[15] A specialist nurse trained by the main researcher applied this scale. It is an instrument that evaluated the functional independence of the BADL of the people being needing care, the stroke survivors, in six hierarchical functions (food, sphincter control, transference, condition of going to the bathroom, ability to dress and bathe). The score used ranges from zero to six points, in which one point is assigned to each "Yes" answer, with the individual being classified as independent in all functions (score zero) or dependent from one to six functions (score from one to six).[15]

The main researcher identified the caregivers' needs through interviews, using a semi-structured form in their respective homes, from September 2017 to March 2018. The research questions were: "What are your personal needs since becoming a caregiver of your relative? What are your needs related to the care of your family member since you became a caregiver?" We used an audio recorder for the testimonies that lasted an average of 30 minutes each. For the treatment of data, we used the technique of analysis of categorical thematic content, which consisted of three stages: 1) The pre-analysis that corresponds to a systematic organization of the data transcribed for reading, construction of the text corpus, and guiding the following analytical operations 2) The exploration of the material that promotes the conversion of the raw data collected into categories and/or subcategories by coding the units of analysis. 3) Finally, the treatment of the results, the inference, and the interpretation that involve apprehending the manifest and latent contents to the construction of the categories and/or subcategories by proposing inferences and interpretations based on them, interrelating them with the theoretical reference.[16]

All participants agreed to participate and signed the Informed Consent Form. The anonymity of family caregivers was guaranteed by the acronym "FC", followed by a different number for each of them, according to the sequence of their participation. The Research Ethics Committee of the State University of Southwest Bahia (UESB), campus Jequié approved this study with opinion 2,187,869 and CAAE 71341017.5.0000.0055.

Results

Thirty-seven family caregivers participated in this study. The age of the caregivers ranged from 18 to 77 years old, 35 were female, 26 married, 25 had financial income below to one minimum wage, 23 did not work and 20 studied until complete elementary school, 23 lived with stroke survivors, 16 were children and 15 were spouses. Although all of them did not receive

formal instruction for the role of caregiver, 15 of them used popular knowledge for their practice for more than 16 hours a week. In the analysis process, three empirical categories emerged: 1) early need for health education about the disease and care for family caregivers; 2) the need to restructure care to family caregivers; 3) need for free time for family caregivers for social activities and (self) care.

The early need for health education about the disease and care for family caregivers

Although the caregivers interviewed take care of Cerebrovascular Accident survivors in the chronic phase, in this category emerged their needs to receive effective guidelines on the stroke and daily care since the acute phase of the stroke, as they were experienced moments that demanded formal support. This was expressed in the following statement: *At the beginning [from hospitalization to community return], I had doubts [...]. When the person has a stroke, we [family members] are very insecure about what will happen [...], so we need more guidance for day-to-day care* (FC03). Caregivers reveal that this deficit of guidelines listed in the context experienced comprises a gap in the knowledge of their praxis, marked by the difficulty in recognizing the risk factors, signs and symptoms of a stroke, and the possible recurrence of the disease. The participants reported these issues: *I don't know how to recognize the "stroke" [CVA] and I don't even know why he [husband] had this disease [...]* (FC21). *I don't know what the "stroke" [AVC] is like, what caused it and if it can be repeated* (FC11).

For caregivers who acquired knowledge about the disease on their initiative in research or from the experience of the incidence of stroke episodes, the main doubts were related to the recovery of the compromised functions, especially to physical disability and the exact cause of the stroke to prevent their recurrence. They stated and/or asked: *if we know what caused the stroke, we will fight [...]. In addition to physical therapy, what can be done to make the movements return?* (FC22). *What are the chances of the person returning to what was before [recovering] from the stroke?* (FC35). Regardless of the family caregivers´ age, they took care according to the knowledge they acquired during their daily lives and taking care of other people, sick or not. However, there are still several doubts related to the instrumentalization of basic daily care, such as food, locomotion and transfer, bathing, clothing, medications, seizure care, and treatment of pressure injuries, which should have already been addressed, considering the long-time of post-stroke care. Some of these issues are cited here: *I had doubts about picking him up, [...] moving him and lifting him [...] from one place to another [...]* (FC24). *Would a water mattress be better than an egg crate mattress to prevent injury? Is sunflower oil essential or is there a better one? [...]* (FC06). *I wanted someone to guide me to take care of her, [...], how to give a bath because I don't know if I take care of her correctly [...]. There are times when I hurt her and she is full of purple marks [bruises] [...]* (FC16).

The need to restructure care to family caregivers

Caregivers inform that there is a delay in scheduling exams and consultations, lack of priority in care, failure in the referral and counter-referral system, and lack of home visits by the staff of the local health unit. These statements explain their difficulties: *Professionals should pay more attention to the person who cares. When I get to the "health center" [UBS], there should have more priority in the service* (FC25). [...] *The [community] health agent never came here again. [...] The nurse should come to our house [...] sometimes, to see how [we, caregivers] are doing, check the pressure [...], measure [the capillary blood glucose] with the tape [...]* (FC34). *"[...] I am not well received at the "health center" [UBS]. [...] When he gets sick, nobody [from the health team] comes [to the house]. I had to leave*

him [husband] lying in bed twice to get an exam. [...] Once, they [employees] forgot to schedule my name for the appointment, and the second time the doctor took time to attend me. I had to go back and make his lunch [...] (FC33).

They also described the importance of psychological support to talk about their daily anxieties and gain knowledge about how to act in stressful situations from their intrapersonal (internal conflicts) and interpersonal (conflicts with the patient) relationship. They stated: *I wanted a psychologist to help the mind because sometimes it is good to talk about losing the person, we like [...], it is like a preparation* (FC07). *[...] taking care of him [husband] makes his head "heavy" [many duties]. [...] There are many concerns and changes at the same time. [...]. If I "get" [consult] a psychologist [...], I will get better. I will be calmer* (FC19). *I wanted a psychologist to talk about stress and anxiety. [...] Sometimes, I have conflicts with her for any reason* (FC11).

The need for surgical, clinical (general and specific), and nutritional care - to improve health through dietary (re) education and weight reduction - were also mentioned: *I need to have hernia surgery [...], which increased due to her weight* (FC29*). I need the physiotherapist due to pain [in the sacral region], because I stay down for a long time during her bath [mother], especially when I do her intimate hygiene. I [weighing 68 kilos] hold her entire weight [73 kilos]* (FC30). *I wanted to go to a nutritionist because I am pre-diabetic, I am overweight and I diet on my own* (FC32).

Need for free time for family caregivers for social activities and (self) care

When assuming the responsibility of caregivers, they faced the difficulty of leaving home and resuming their autonomy completely due to the little support received. However, when they find a moment for themselves, they take the opportunity to go to church, visit friends and family or practice another pleasant activity. At the time of prayer, caregivers feel good, with spiritual comfort, and living in the social environment leaves them calm, relaxed, and free. They reported: *Going out, traveling, and taking a walk is good for me because I distract the mind [...]* (FC11). *Prayer comforts the person [...]* (FC20). *I feel very good about going to church because I feel alive and free. Hearing the word [of God] is always great. I like being in the middle of my family [...]* (FC23). *Young caregivers and young adults in particular are still eager to resume occupational activities. Work is recognized not only as a source of income but also as a moment of leisure and distraction: Before, I [...] worked sewing to help with the expenses of the house. I went out on a Saturday afternoon to go to my brother's house, visit a friend, or take my sewing. It was like having fun [...]* (FC07).

Discussion

Family caregivers perceive their main needs related to the care of Cardiovascular Accident survivors and have some knowledge on how to seek to remedy them, but they face informal and formal support barriers. This demonstrates the need for health education actions that problematize these difficulties and boost the autonomy of these people to change their life context, so they concentrate on the care of the other, but not to the detriment of actions for self-care.

Prolonged daily care, permeated by learning experiences, can awaken the feeling of security about the disease and care practices. However, in this study, despite the long-time of care, some home caregivers still have health education needs about stroke and basic daily care, which are more frequent at the beginning of the disease. [7,17] Maybe this occurs due to the scarcity or inexistence of effective dialogues between health professionals and family caregivers at home,

especially in primary health care, which is the reference in health education practices. In this sense, caregivers should be advised early, in the first stroke episode and in recurrent episodes, to avoid compromising the recovery of the stroke survivor and the quality of the caregiver's health.[18]

This education should not result in a mere transmission of information based on a technical model, which disregards the social context and previous knowledge of caregivers.[19] Professionals need to stimulate caregivers' curiosity in advance, encouraging them to reflect on the problems of their reality, awakening their critical thinking. When caregivers relate dialogued learning to their social context, there is a greater possibility of understanding the disease, its impacts, and elementary care for patients and, consequently, reducing possible errors during care praxis. With this understanding, the person can transform the way of caring for others and themselves.

For the caregivers in this study who acquired knowledge in the care trajectory, the questions and concerns were focused on the recovery of motor and cognitive functions, the treatment of skin lesions, and the care in convulsive crises. This shows the need to maintain educational practices during home care,[4] as other problems emerge in daily life, especially those linked to the aging process of the binomial caregiver and the person having care, the chronicity and incidence of a stroke. This context reaffirms the importance of establishing an investigative routine of these needs in health units, in particular, in more socially vulnerable groups. Other studies identified that caregivers wanted to share their experiences with their peers (other caregivers) and health professionals in support groups. This exchange of experience showed that it is possible to manage negative feelings[7,20] and that they do not show a lack of love, but a need for assistance. Although in this study, caregivers did not report the need to express their feelings with other caregivers, they expressed the desire to talk to a psychologist, which reinforces the need to offer this mental health care.

Thus, it is important to develop unique therapeutic projects in primary health care to expand mental health care and to create support groups for these caregivers. Although they can be mediated by psychologists, other professionals may be included such as nurses due to the extensive bond with the family. In the area of physical health, the main need was to reduce musculoskeletal pain, which originates from inadequate postures since the beginning of care or from worsening pre-existing injuries related to the role of caregiver.[21] The need for health care for the control of chronic diseases, the general clinical evaluation, and the change in lifestyle reaffirm that these caregivers continue to postpone self-care due to the improvement of the health of the person who has care, often abdicating their well-being to the detriment of caring others.

Therefore, the health professionals should reinforce the importance of self-care,[17] making care possible for caregivers' physical and emotional problems,[12] as they have little or no social support, which allows them to be absent of their function to take care of their health. The lack of priority in caring for the caregiver, especially those at risk of developing or worsening chronic diseases, can trigger short to long-term spending on health systems and social security, and therefore deserves attention from government sectors.

This difficulty in finding time for themselves that also emerged in this study, despite the care is more intense at the beginning,[7] it can last for months or years, affecting the feeling of well-being and reducing the chances of returning from activities work outside the home, especially in young or middle-aged adult caregivers.[22] An international survey carried out in Japan monitored family caregivers throughout care and found that most of them had difficulty finding free time to go out and relax, which resulted in the maintenance of overload of activities related to care. For this research, the limitation of free time occurred for cultural reasons, as the caregivers had a high

sense of responsibility and believed that their substitutes would not adequately perform the same activities.[8] However, this study showed that this limitation may have been influenced by the lack of support from other family members, a common scenario in the Brazilian context also evidenced in other studies.[3,23]

The different cultural realities (Japan and Brazil) may have influenced this perception of social support since in the east the shared care among family members does not generate conflicts since their division is tacit and naturally accepted, while in the west the caregiver, in most cases, it is a single-family member, who does not always choose this function.[24] Despite the different contexts, national and international, the needs of family caregivers of Cardiovascular Accident survivors remain throughout the long-term care. The social support is mainly required in the emotional, assistance, and informational aspects and in the free time.[4,8,25]

As a limitation of this study we have testimonies from family caregivers of a specific context, taking care of people with a specific disease, so we need to expand this investigation in other geographical and care contexts to meet other caregiver needs who care for family members with other (co) morbidities. However, the study demonstrated the importance of (re) knowing and valuing the sensitive listening of the needs of these caregivers to plan specific educational practices and directed to the demands of the people who take care and have care from others.

Conclusion. We observed that the family caregivers of Cardiovascular Accident survivors have basic health needs and social interaction, remedied by health interventions, based on educational practices, and valuing popular knowledge as a way of encouraging them to become active people and able to modify their reality. They also have unmet needs such as guidance, assistance, and time available for self-care, which has influenced their illness related to the care of others.

We expect that the identification of caregivers' needs will contribute to subsidize the planning, development, and implementation of projects directed to the demands of these people, improvement of assistance in health services, and the possibility of ensuring the right to priority in care, according to the singularities of the caregivers.

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Feelings, Stress, and Adaptation Strategies of Nurses against COVID-19 in Guayaquil

Original article

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Feelings, Stress, and Adaptation Strategies of Nurses against COVID-19 in Guayaquil

Abstract

Objective. To explore the feelings, stress factors, and adaptation strategies of nurses during the COVID-19 pandemic in Guayaquil, Ecuador. **Methods.** A cross-sectional, descriptive quantitative study, conducted through the application of a 52-item questionnaire with four sections (feelings, perceived stress, stress-reducing factors, and adaptation strategies). The study population was 227 nursing professionals from "Hospital General del Guasmo Sur" of the Ministry of Public Health, who worked during the peak of the pandemic from March to May 2020. The sample comprised 155 nurses who voluntarily accepted to participate. The study received 127 complete questionnaires for analysis. **Results.** The data showed the priority of humanist feelings and professional duty for these nurses, mostly young (59% under 35 years of age and with the professional exercise of three and fewer

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years), against the fear of contagion and the stress of strenuous work. They also revealed the great importance for them of the institutional support, recognition to the staff, and strict organization of safe care, like strategies for coping with this difficult experience. **Conclusion.** The COVID-19 pandemic represented for nurses from Guayaquil a great professional and emotional challenge. Health services and society could consider these findings to avoid burning out nurses and their professional desertion.

Descriptors: Stress, psychological; nurses; coronavirus infections; risk factors; pandemics; cross-sectional studies; Ecuador.

Sentimientos, estrés y estrategias de adaptación de enfermeros ante covid-19 en Guayaquil

Resumen

Objetivo. Explorar los sentimientos, factores de estrés y estrategias de adaptación de los enfermeros durante la pandemia del COVID-19 en Guayaquil, Ecuador. **Métodos.** Estudio cuantitativo, descriptivo, de corte transversal, realizado mediante la aplicación de un cuestionario de 52 ítems con cuatro secciones (sentimientos, estrés percibido, factores reductores de estrés y estrategias de adaptación). La población del estudio fueron 227 profesionales de enfermería del "Hospital General del Guasmo Sur" del Ministerio de Salud Pública, que laboraron durante el pico de la pandemia en los meses de marzo a mayo de 2020. La muestra fueron 155 enfermeros que aceptaron voluntariamente participar. Se recibieron 127 cuestionarios completos para el análisis **Resultados.** Los datos mostraron la prioridad de los sentimientos humanistas y del deber profesional para estos enfermeros, en su mayoría jóvenes (59% menores de 35 años y con ejercicio profesional de tres y menos años), frente al temor al contagio y al estrés de un trabajo extenuante. Revelaron también la gran importancia que tiene para ellos el soporte institucional, el reconocimiento al personal y la estricta organización de una prestación segura, como estrategias para el afrontamiento de esta difícil experiencia. **Conclusión.** La pandemia del COVID-19 representó para los enfermeros de Guayaquil un gran desafío tanto profesional como

emocional. Los servicios de salud y la sociedad podrían considerar estos hallazgos para evitar el desgaste de los enfermeros y su deserción profesional.

Descriptores: estrés psicológico; enfermeras y enfermeros; infecciones por coronavirus; factores de riesgo; pandemias; estudios transversales; Ecuador.

Sentimentos, estresse e estratégias de adaptação dos enfermeiros ao covid-19 em Guayaquil

Resumo

Objetivo. Explore os sentimentos, fatores de estresse e estratégias de adaptação de enfermeiras durante a pandemia COVID-19 em Guayaquil, Equador. **Métodos.** Estudo quantitativo, descritivo, transversal, realizado por meio da aplicação de um questionário de 52 itens com quatro seções (sentimentos, estresse percebido, fatores redutores do estresse e estratégias de adaptação). A população do estudo foi de 227 profissionais de enfermagem do "Hospital Geral de Guasmo Sur" do Ministério da Saúde Pública, que trabalharam durante o pico da pandemia nos meses de março a maio de 2020. A amostra foi de 155 enfermeiros que aceitaram participar voluntariamente. Foram recebidos para análise 127 questionários completos. **Resultados.** Os dados evidenciaram a prioridade do sentimento humanístico e do dever profissional para esses enfermeiros, em sua maioria jovens (59% menores de 35 anos e com prática profissional de até três anos), frente ao medo do contágio e ao estresse do trabalho extenuante. Também revelaram a grande importância do apoio institucional, do reconhecimento da equipe e da estrita organização de uma prestação segura, como estratégias para o enfrentamento dessa difícil experiência. **Conclusão.** A pandemia COVID-19 representou um grande desafio profissional e emocional para as enfermeiras de Guayaquil. Os serviços de saúde e a sociedade poderiam considerar essas descobertas para evitar a exaustão do enfermeiro e sua deserção profissional.

Descritores: estresse psicológico; enfermeiras e enfermeiros; infecções por coronavirus; fatores de risco; pandemias; estudos transversais; Ecuador.

Introduction

In December 2019, an infection outbreak occurred due to Severe Acute Respiratory Syndrome - Coronavirus 2 (SARS -COV-2) in the city of Wuhan, province of Hubei, China.[1] The global advance of COVID-19 was vertiginous; by January it had spread to Thailand and Spain; in February it was in Italy and Egypt and in March, it reached Latin America, where one of the first countries affected was Ecuador (29 February 2020).[2] Due to antecedents of high contagion, lethality in European countries, and vulnerability of the Ecuadorian health system, local authorities initiated follow up of contacts, detection, and control of cases. On 17 March, the Ecuadorian government took restrictive measures and declared the state of emergency, confinement of the citizenship, and border closings to contain the advance of the virus[3] and the Ministry of Health selected hospitals for referral of patients with COVID-19.

Structural changes were established immediately in health services and reforms were made in the staff's workload, principally due to reasons of logistics and staffing (schedules from 8 to 12 hours daily changed to 24-hour shifts). The vast expansion of COVID-19 in a few days in Guayaquil did not permit timely supply of personal protection equipment, or diagnostic tests, which had very slow processing due to insufficient capacity of daily testing.[4] By late March, the installed capacity of hospitals and clinics in the city was exceeded and even the capacity of funeral services collapsed. By 15 May 2020, 30,502 confirmed cases were reported and 2,338 deaths.[5] At the time, Ecuador had the highest rate of cases in South America, 13.15 per 100-thousand inhabitants, which exceeded the global average of 9.63 and pointed to growing lethality.[6]

The institutional response for nurses upon this complex crisis was based only on their personal protection and biosecurity measures. There was no regard to the unprecedented consequences to the mental health of the health staff. Pandemics not only cause disease and death, they also cause prolonged grief, fear, despair, hopelessness, sleep disorders, and post-traumatic stress that lead to significant social, occupational, and interpersonal dysfunction.[7] The COVID-19 pandemic represented a great threat to the lives and health of the staff. In Ecuador, according to data from professional colleges, there were 700 physicians infected, 80 dead; 147 nurses infected and 8 dead, which caused a significant impact on their emotional responses and on their mental health.[5,7]

Lazarus and Folkman[8] defined stress "as the interrelations between the person and the context, produced when the *person* evaluates that which happens as something exceeding the resources they have available and endangers their personal wellbeing". Additionally, these authors proposed a new concept, "coping with stress", according to which each person has a

particular way of coping that can be determined by the health and physical energy, existential beliefs, motivations, capacity for problem solving, control of the environment and the very person, and social support.

Some studies exist on stress, coping and mental health of nurses at risk of COVID-19, one of them in Anhui, China evidenced that nurses showed anxiety, fear, anger, and sadness.[9] In Huazhong, it was found that 35 members of the front-line nursing staff (85.37%), with patients in severe phase of pneumonia due to COVID-19, experienced somatizations, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety and fear.[10] An Iranian study identified that nurses in the first line of care to COVID-19 patients had a higher job-stress level than those working in other services.[11] Studies have also identified stress reducing factors and adaptation strategies in the health staff in the pandemic: availability of personal protection equipment, rigorous protocols to control infections, recognition of their efforts by the hospital administration and government, and decrease of new cases reported, which provide them psychological benefit.[12]

The nursing staff in the front-line of care faces large and varied demands due to contact with very ill patients with a contagious virus and of poorly known trajectory; the vulnerability not only in them, but also the possibility of bringing the virus into their homes; observing the deaths of patients alone; and varied information projected in communication and social media, that do not encourage them at all.[12,13] Therein the importance of establishing in nurses a baseline of factors related to mental health to implement actions that improve the Nursing exercise against new outbreaks.

Methods

This study had a cross-sectional, descriptive approach. It was conducted in "Hospital General Guasmo Sur" with a capacity of 474 beds, which was designed as the first hospital in the city of Guayaquil to care for patients during the peak of the COVID-19 pandemic, from March to May 2020. The universe of nursing professionals working in the hospital was of 267 of which 40 were excluded due to having criteria of vulnerability for the disease, resulting in a population of 227, distributed in the services of Emergency (79), ICU (35), Hospitalization, and others (113). Given the pandemic circumstances, a non-probability convenience sampling was carried out, recruiting the professionals who voluntarily accepted to participate in the study. Of the 227 nurses who worked during the pandemic, 155 answered the questionnaire, but only 127 fully completed it, with these being the ones finally analyzed. It is important to consider that all the research subjects lived the same experience, given that they exclusively cared for patients with COVID-19 of slight, moderate, and severe symptomatology, guaranteeing non-variability of the result due to the participants.

Data collection was performed by applying an on-line questionnaire on the *Survey Monkey*® platform. Given that at the time of executing the survey there was mobility restriction and social distancing, an invitation was delivered to the professional nursing staff via e-mail to participate in the research. The invitation explained the objective and characteristics of the study, guaranteeing anonymity and confidentiality and included a link with the questionnaire form. The informed consent was taken as implicit if the participants connected to the web site and completed the questionnaire. Instructions were attached for the on-line survey, which indicated how the questions were distributed, the meaning of each item and its corresponding scale.

The instrument used for this study was a questionnaire derived and adapted from the "MERS-CoV staff questionnaire" by Khalid *et al.,*[13] selected because its variables have much affinity with those of the impact of COVID-19 on the health staff during the pandemic in Guayaquil. After obtaining authorization from the author, it was

translated into Spanish by one of the authors of this article for greater reliability in the connotations and affirmations. Additionally, the content was analyzed with six local experts (four nurses and two psychologists who work with Nursing), who individually evaluated the questionnaire and then participated in two group meetings on the Zoom platform, to detect ambiguities and remove that which was not in context or which was not pertinent for the objective of this research, resulting in 52 items among reactions and behaviors.

The questionnaire had four sections with the following response options: (i) *emotions of nurses during the COVID-19 pandemic* with 12 items and its scale: 0 = not at all; 1 = somewhat; 2 = moderate; 3 = very much); (ii) *stress-causing factors* with 16 items and its scale: 0 = no stress; 1 = light stress; 2 = moderate stress; 3 = too much stress; (iii*) factors that help to diminish the stress of nurses* with 11 items and its scale: 0 = not effective; 1 = slightly effective; 2 = moderately effective; 3 = very effective; and (iv) *coping strategies the staff could have used* with 13 items and their scale: 0 = never used; 1 = sometimes used; 2 = frequently used; 3 = always used. The study processed 127 complete questionnaires, which were analyzed with descriptive statistics. Kuder Richardson-Formula 20 and Cronbach's alpha internal consistency coefficients were also obtained. The SPSS statistical program version 25 was used. The questionnaire was subjected to a pilot test with a group of 10 nursing professionals with practice similar to the study subjects, modifications were not needed.

Results

In this study, it was interesting that the sample was mostly comprised of young nurses, seven in every ten were under 35 years of age, and 58% had a time of professional exercise of three years and less; 85.8% were women,74% had no graduate formation, 71% practiced a religion, and 89% lived with the family (Table 1).

The feelings manifested most by the nursing staff during the pandemic were the professional duty of the nurses, 91% (score = 2.33); fear of caring for patients, 91%, (score = 1.80); and the appreciation they would give to institutional recognition, 89%, (score = 2.30). In lower proportion, they felt dissatisfaction for having to work extended hours, 34%, (score = 0.54) or tried to diminish their contact with patients. Very few wanted to call in sick, 7%, (score = 0.11) or felt the urge to quit their job (Table 2).

Among the factors that cause stress, we may highlight due to its frequency and intensity, the possibility of transmission to relatives, 99%, (score = 2.27), as well as factors related to the workplace, such as getting infected by handling patients, 94%, (score = 1.90); and lack of personal protection equipment, 91%, (score = 2.02). An external factor, lack of treatment and vaccines available for this virus, 91%, (score = 2.01), proved stressful. Results above 88% were obtained in various factors: accessing news through television or social media about COVID-19; observing anxious and frightened colleagues, and having possible symptoms of the disease (Table 3).

Among the factors that aided in diminishing stress, it was found that all the nurses benefit when all the colleagues in the unit where they work show a positive attitude, 100%, (score = 2.56), there is teamwork within the area, 100%, (score = 2.76), knowing that COVID-19 cases improve, 100%, (score = 2.69), and no one is sick among their family and circle of friends, 100%, (score = 2.74). A lower percentage (84%) reported that it helps not having an extended schedule at work (more hours in the work shift) (Table 4).

Table 1. General characteristics of the study sample (*n*=127)

Characteristic	Category	Value	%
Age (years)	20 to 24	15	11.81
	25 to 29	47	37.01
	30 to 34	28	22.05
	35 to 39	1	11.02
	40 to 44	11	8.66
	45 to 49	3	2.36
	50 and more	9	7.09
Sex	Female	109	85.83
	Male	18	14.17
Service working in	Emergency	42	33.07
	Hospitalization	37	29.13
	Intensive Care Unit	36	28.35
	Other	12	9.45
Level of education	Degree in Nursing	94	74.02
	Specialist	2	1.57
	Masters	6	4.72
	Others: diploma courses	25	19.69
Years of clinical experience	0 to 3	74	58.27
	4 to 8	32	25.20
	9 to 12	5	3.94
	13 and more	16	12.60
Practices some religion	Yes	90	70.87
Family situation	Lives with the children	12	9.45
	Lives with the spouse	17	13.39
	Lives with the spouse and children	50	39.37
	Lives alone	14	11.02
	Lives with others	34	26.77

Table 2. Emotions of nurses during the pandemic (*n* = 127, maximum score = 3)

Number	Emotions	Responded yes (%)	Average score (±SD)
1	Did you feel you had to do your job when caring for patients with COVID-19 as a professional duty?	91	2.33 (0.96)
2	Did you feel frightened when caring for patients with COVID-19?	91	1.80 (0.89)
3	Were you upset because your workload increased with patients with COVID-19?	54	0.91 (0.97)
4	Were you dissatisfied working an extended schedule (increased number of hours in your work shift)?	34	0.54 (0.83)
5	Did you try to diminish your contact with COVID-19 patients (for example, going less to the patient's unit)?	42	0.69 (0.90)
6	Have you felt that relatives, friends, or neighbors avoid contact with you?	85	1.70 (1.06)
7	Have you felt the urge to quit your job due to the pandemic?	29	0.50 (0.89)
8	Would you appreciate a special recognition from the hospital administration due to your work with COVID-19 patients?	89	2.30 (1.02)
9	Would you appreciate an economic compensation for caring for COVID-19 patients?	80	1.81 (1.19)
10	If it were optional, would you have elected working in a unit where you would not be exposed to COVID-19?	42	0.68 (0.93)
11	Have you thought of calling in sick to avoid going to work?	7	0.11 (0.44)
12	Did you feel exhausted or fatigued due to your work with COVID-19 patients?	85	1.33 (0.87)

Score key: 0 = Not at all; 1 = Slightly; 2 = Moderately; 3 = Very much

Table 3. Factors that caused stress among nursing professionals (*n* = 127, maximum score = 3) (cont.)

Number	Factors	Responded yes (%)	Average score (±SD)
1	Were you stressed regarding the probability of transmitting COVID-19 to your family or friends due to your work?	99	2.27 (0.76)
2	Were you stressed when having to care for your own colleagues, acquaintances, or relatives sick with COVID-19?	80	1.43 (0.97)
3	Were you stressed by having to deal with the deaths of patients with COVID-19?	83	1.80 (1.10)
4	Were you stressed by the probability of contracting the COVID-19 infection by handling patients in the hospital?	94	1.90 (0.90)
5	Were you stressed by the lack of adequate protection measures (sufficient equipment and adequate environments) against COVID-19?	91	2.02 (0.98)
6	Were you stressed by the fear of making minimal mistakes or failures in concentration during work, which would expose you or others to COVID-19 infection?	86	1.52 (0.93)
7	Were you stressed by a conflict between your professional duty and your own safety?	75	1.32 (1.02)
8	Were you stressed by the fact of having to use protection equipment daily (discomfort)?	83	1.54 (1.01)
9	Were you stressed by news of new COVID-19 cases reported on TV/ newspapers/social media?	88	1.76 (1.01)
10	Were you stressed by the probability of enduring rejection or attacks from the community?	78	1.37 (0.99)
11	Were you stressed when seeing your unit's colleagues anxious or frightened?	88	1.48 (0.88)
12	Were you stressed when seeing colleagues who showed symptoms similar to those of COVID-19?	89	1.61 (0.94)
13	Were you stressed by the fact of having respiratory symptoms and fearing it was COVID-19?	89	1.88 (1.01)
14	Were you stressed by having to take the test to detect the COVID-19 infection after being exposed?	84	1.62 (1.02)
15	Were you stressed by the lack of a treatment and/or vaccine for COVID-19?	91	2.01 (0.97)
16	Were you stressed by not knowing when there would be more COVID-19 outbreaks?	88	1.72 (0.98)

Score key: 0 = No stress; 1 = Slightly stressed; 2 = Moderately stressed; 3 = Very stressed

Table 4. Factors that help to reduce stress in nursing professionals (*n* = 127, maximum score = 3)

Number	Factors	Responded yes (%)	Average score (±SD)
1	It helps to diminish stress when your unit's colleagues display a positive attitude.	100	2.56 (0.67)
2	It helps to diminish stress when no COVID-19 cases occur in the staff after applying rigorous protection measures.	98	2.39 (0.77)
3	It helps to diminish stress by observing improvement in the health condition of patients with COVID-19.	100	2.69 (0.60)
4	It helps to diminish stress with the hospital providing individual protection equipment.	97	2.54 (0.82)
5	It helps to diminish stress by knowing that their relatives or friends outside the hospital have not gotten sick with COVID-19.	100	2.74 (0.57)
6	It helps to diminish stress by listening to the news reporting a decrease of new COVID-19 cases.	97	2.32 (0.82)
7	It helps to diminish stress by thinking of the probability additional compensation for their work during the COVID-19 pandemic.	95	2.16 (0.92)
8	It helps to diminish stress when all first-line of care health professionals work as a team.	100	2.76 (0.55)
9	It helps to diminish stress by knowing there is trust in the support to the hospital staff in case they get sick or die from COVID-19.	94	2.34 (0.91)
10	It helps to diminish stress when not having an extended Schedule at work (more hours than the regular).	84	1.74 (1.05)
11	It helps to diminish stress when getting free food in the hospital or in the unit.	91	1.98 (1.00)

Score key: 0 = Not effective; 1 = Slightly effective; 2 = Moderately effective; 3 = Very effective

The coping strategies adopted by all the nurses during the pandemic were, in ~~the~~ first place, those related with the safety of their practice: following strictly personal protection measures, 100%, (score = 2.92); maintaining separate clothing for the street and for work, 100%, (score = 2.81); and acquiring greater knowledge about the disease, 100%, (score = 2.63). Together with these strategies, there was another prevention measure disseminated globally, like avoiding going to public places, 100%, (score = 2.69). High percentages were obtained in the communication strategies with their relatives and friends; positive thoughts and attitudes, as well as caring for their nutrition, frequency of engaging in physical exercise and recreation activities. The lowest percentage and intensity value were obtained in the expression of their feelings, 61%, (score = 0.94) (Table 5).

Table 5. Coping strategies used by nursing professionals to reduce stress (*n* = 127, maximum score = 3)

Number	Strategies	Responded yes (%)	Average score (±SD)
1	Follow strict personal protection measures (*e.g.*, hand washing, using a face mask, taking the temperature, using disposable gowns).	100	2.92 (0.27)
2	Maintain separate clothing for street and work to minimize transmission.	100	2.81 (0.48)
3	Engage in healthy activities, like a balanced diet, exercise, rest, recreation, etc.	98	2.21 (0.83)
4	Actively acquire greater knowledge about COVID-19, its symptoms, prevention, transmission mechanisms, and management, etc.	100	2.63 (0.53)
5	Avoid going to public places to minimize exposure to COVID-19	100	2.69 (0.54)
6	Practice relaxation activities (*e.g.*, meditation, yoga, prayer, dance, others).	90	1.74 (0.96)
7	Talk to relatives and friends to relieve stress and get support.	98	2.38 (0.74)
8	Renovate thoughts and get motivated to face the COVID-19 pandemic with a positive attitude.	99	2.46 (0.70)
9	Obtain help from doctors and professionals from the hospital to reduce stress and remain calm.	93	1.87 (0.93)
10	Seek distraction and try to stay busy at home with activities that distance you from information about COVID-19.	93	2.00 (0.93)
11	Avoid working extended schedules to reduce exposure to COVID-19.	66	1.28 (1.10)
12	Avoid news in the media about COVID-19 and related deaths.	89	1.79 (0.97)
13	Express your emotions by crying, yelling, etc.	61	0.94 (0.95)

Score key: 0 = Never used; 1 = Sometimes used; 2 = Frequently used; 3 = Always used

Lastly, the Cronbach's alpha coefficient, used for scales of continuous items, showed that the internal consistency of the section of *Stress-causing factors* was high, while it was moderate in the other three. The Kuder-Richardson test coincided with that reported for the Cronbach's alpha in the section of *Stress-causing factors* as high consistency and of *Emotions of nurses during the pandemic* as moderate, while in the other sections the internal consistency was interpreted as low (Table 6).

Table 6. Internal consistency coefficient of the sections of the instrument used

Section	Kuder-Richardson 20	Cronbach's alpha
Emotions of nurses during the pandemic	0.77	0.72
Stress-causing factors	0.87	0.93
Factors that aid in reducing stress in nursing professionals	0.47	0.77
Coping strategies the staff could have used	0.55	0.73

Discussion

The COVID-19 pandemic placed health professionals throughout the world in a situation without precedent. The impact in Guayaquil, city where the pandemic began in Ecuador, was devastating.[2] Current scientific literature reports that work under pressure, administration and optimization of scarce resources in services, fear of death, and placing one's basic needs aside due to overload of responsibilities, additionally, could affect the physical state and mental health of nurses.[9,10,12-14] Perhaps the more robust health systems have the power to better mitigate impacts, versus weaker health systems, as could be the case in Ecuador.[3] To better explain it, the Ecuadorian National Health System has a more curative than preventive orientation. Regarding the need for better detection, follow up, and control of cases in the first level of care, the conditions did not exist for this to take place in the city of Guayaquil and patients had to attend hospital institutions of greater complexity. As a result, greater saturation was observed of users, work overload, and contagion of health workers.

This study, by being the first to explore the feelings, stress factors, and coping strategies upon COVID-19 used by Ecuadorian nurses, can be a contribution to develop care programs for the staff and have better strategic planning in future outbreaks. The professionals in this study turned out to be, mostly, young recently graduated and with poor work experience who, like many nurses globally, felt that caring for patients with COVID-19 represented a professional duty,[12-14] in spite of their fear of infection, and the extenuating fatigue represented by working with these patients. Fear in 91% of them was higher compared to that young nurses from Taiwan (43%) felt during the possible pandemic of an unknown virus (avian flu), already, warning of the risk of progression from this fear to panic, and then to phobia.[15] A high proportion of the sample (89%) considered institutional recognition important (promotions, job stability, mentions of their performance) and economic compensation for their work. These data are similar to those found among 534 health professionals who were in the front line in Wuhan during the COVID-19 outbreak,[12] and in another study in China.[16]

The factors that caused the greatest stress to the nurses surveyed were the possibility of being infected with COVID-19 and infecting their relatives and friends (99%); likewise, this occurred among nurses in Taiwan with higher intensity (2.35).[17] A critical factor, lack of sufficient personal protection equipment (91%), further complicated by long work shifts that in the "Hospital del Guasmo" were of 24 hours, caused exhaustion and subordination of basic needs, with high physical and psychological demands, and scant resources.[17-19] This situation was, also

manifested in Chinese[16] and European hospitals [20] during the peak of the pandemic. Negative news of the advance of COVID-19, as well as the nervousness and anguish of their coworkers, were very important in this group, unlike the study by Khalid on the MERS epidemic outbreak, probably due to its lesser social impact.[13] The perception of greater risk due to the lack of a vaccine and treatment caused stress in 91% of the respondents.

Four of the factors that helped to reduce stress during the peak of the pandemic were similar in various studies, positive attitude from coworkers and team work;[18,20] observing the clinical improvement of hospitalized patients; and having their relatives and friends free from COVID-19. [12,18] Diminished work shift, as well as receiving compensation or free food were of lesser interest. It is noted in this study that the staff has high solidarity and good disposition to provide their professional services despite the overwhelming situation they encountered.

The coping strategies most used by Ecuadorian nurses included: following strict personal protection measures at work and at home; social distancing (avoiding going out to the streets and public places); and acquiring actively greater knowledge about COVID-19 and its management; similar to those of other professionals in epidemics.[12,17,18] Speaking with relatives and friends relieved stress, as well as renovating thoughts and motivating themselves positively served them as support.[18,19] A large group of nurses did not reduce their schedules to protect themselves (34%) nor expressed their emotions openly by crying and yelling (39%), possibly due to the big moral demands of the crisis.[14] The profound ethical and vocational commitment nursing has, is definitely one of the characteristics these professionals have, and the obligation of offering their knowledge and skills during this threatening moment, was fair and pertinent. It was the moment to demonstrate who is who.

According to the results of this research, it is concluded that the impact on the mental health of nurses could be severe. It must be remembered that they not only experience the stress caused by their work on the front line, but that they are also parents, spouses, sons and daughters, and citizens who are experiencing fear and vulnerability regarding this unprecedented situation for the current world. Fortunately, the social and family components influenced favorably the ways of coping of these professionals during the pandemic; besides the positive work environment, resulting in support for their emotional state. Institutional recognition, more than economic compensation, would have greater importance in their perceptions.

Nurses need government and those in charge of formulating public policy, nursing leaders, as well as professional groups to participate actively in their support, both during and after the pandemic [14,16,19-21] The Union of Nurses from Guayas is monitoring the outfitting of sufficient quality biosecurity supplies for nursing professionals, as well as ensuring possible compensation to the families of nurses who have lost their lives during the pandemic.

This study had limitations with the sample coming from a single hospital and due to the self-selection. Another factor could be the memory bias in the responses upon the fact that the survey took place in late May, after almost two months in which Guayaquil suffered the peak of the pandemic, and “fear” of the virus could have been lost. More studies are recommended from these results, in another group of professionals or in cities of Ecuador that are still in the pandemic cycle.

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Original article

Changing Home: Experiences of the Indigenous when Receiving Care in Hospital

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Changing Home: Experiences of the Indigenous when Receiving Care in Hospital

Abstract

Objective. To understand the meaning of the experience of the indigenous when receiving care in a low-complexity hospital. **Methods.** Qualitative study with ethnographic approach conducted in a hospital of Antioquia, Colombia. The study had 12 indigenous participants who underwent semi-structured interviews. Observation was carried out in hospitalization wards, emergency, and outpatient services of the institution during 40 hours. The analysis process was performed descriptively. The methodological rigor was maintained by applying criteria of confirmability, credibility, transferability, and consistency. The study was approved by the Ethics Committee and authorized by the indigenous authorities to enter the field. **Results.** Five themes emerged: the context of caring for the indigenous, the need to consult the hospital, changes experienced by the indigenous in the hospital, experiences in relation

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with treatments, and relations established within the hospital. The meaning is constructed from a dichotomous perspective based on the favorable or unfavorable aspects of the situations and experiences, which for the indigenous is like “changing home”. **Conclusion.** The meaning of the experience of receiving care in hospital for the indigenous is constructed from the context in which they live and receive health services, the changes they live in the dimension of space by virtue of their traveling from their vital space to another space that, due to their physical characteristics, results strange and different, even not healing. Upon the difficulties, the indigenous develop strategies and actions to overcome limitations, whether through adaptation and learning

Descriptors: health of indigenous peoples; nursing care; transcultural nursing; hospitalization; anthropology; cultural.

Cambiar de casa: experiencias de los indígenas al recibir atención en el hospital

Resumen

Objetivo. Comprender el significado de la experiencia de los indígenas al recibir atención en un hospital de baja complejidad. **Métodos.** Estudio cualitativo con enfoque etnográfico desarrollado en un hospital de Antioquia, Colombia. Participaron doce indígenas a quienes se les realizaron entrevistas semiestructuradas. Se hizo observación en salas de hospitalización, urgencias y servicios ambulatorios de la institución durante 40 horas. El proceso de análisis se hizo de manera descriptiva. El rigor metodológico se mantuvo con la aplicación de los criterios de confirmabilidad, credibilidad, transferibilidad y consistencia. Se contó con aval del Comité de Ética de Investigación de la Facultad de Enfermería de la Universidad de Antioquia y autorización de las autoridades indígenas para entrar al campo. **Resultados.** Emergieron cinco temas: el contexto de la atención de los indígenas, la necesidad de consultar al hospital, los cambios experimentados por los indígenas en el hospital, las experiencias en relación con los tratamientos y las relaciones establecidas dentro del hospital. El significado se construye desde una perspectiva dicotómica con base en los aspectos favorables o desfavorables de las situaciones y experiencias, que para los indígenas es como “cambiar de casa”. **Conclusión.** Para los indígenas, el significado de la experiencia de recibir atención en el hospital se construye a partir del contexto en el que viven y reciben los servicios de salud, los cambios que viven

en la dimensión del espacio en virtud de que transitan desde su espacio vital a otro que, por sus características físicas, resulta extraño y diferente, incluso no curativo. Ante las dificultades, los indígenas desarrollan estrategias y acciones para superar las limitaciones, bien sea mediante la adaptación y el aprendizaje.

Descriptores: salud de poblaciones indígenas; atención de enfermería; enfermería antropología cultural transcultural; hospitalización; antropología cultural.

Mudança de casa: experiências de indígenas atendidos no hospital

Resumo

Objetivo. Compreender o significado da experiência indígena ao receber atendimento em um hospital de baixa complexidade. **Métodos.** Estudo qualitativo com abordagem etnográfica desenvolvido em um hospital de Antioquia, Colômbia. Participaram 12 indígenas, nos quais foram realizadas entrevistas semiestruturadas. A observação foi realizada no hospital, no pronto-socorro e serviços ambulatoriais da instituição por 40 horas. O processo de análise foi feito de forma descritiva. O rigor metodológico foi mantido com a aplicação dos critérios de confirmabilidade, credibilidade, transferibilidade e consistência. Teve o aval do Comitê de Ética e autorização das autoridades indígenas para o ingresso em campo. **Resultados.** Emergiram cinco temas: o contexto do cuidado aos indígenas, a necessidade de consulta hospitalar, as mudanças vivenciadas pelos indígenas no hospital, as experiências em relação aos tratamentos e as relações estabelecidas no hospital. O sentido é construído a partir de uma perspectiva dicotômica a partir dos aspectos favoráveis ou desfavoráveis das situações e vivências, o que para os indígenas é como "trocar de casa". **Conclusão.** O sentido da experiência de receber cuidado no hospital para indígenas é construído a partir do contexto em que vivem e recebem os serviços de saúde, das mudanças que vivenciam na dimensão do espaço em virtude da passagem de seu espaço de moradia para outro espaço que, pelas suas características físicas, é estranho e diferente, nem mesmo curativo. Diante das dificuldades, os indígenas desenvolvem estratégias e ações para superar as limitações, seja por meio da adaptação e do aprendizado.

Descritores: saúde de populacões indígenas; cuidados de enfermagem; enfermagem transcultural; hospitalização; antropologia cultural.

Introduction

Analysis of the cultural issues immersed in care situations seeks to promote a therapeutic, sensitive, and respectful relation with the cultural diversity from which is derived knowledge that guides the practice, both of nursing professionals, as well as of other professionals involved in caring for people with diverse cultural characteristics. In the intersection of anthropology and a nursing, the cultural issues of care emerge that have been gathered and framed within Transcultural Nursing,[1] creating a field of practical analysis, study, and development that has evolved and has expanded with research and contributions by other theorists, to understand culture as a fundamental element in the interaction among care actors.

Culture is a term with multiple meanings; this study used the theoretical assumptions by Leininger[1] who defines it as a group's beliefs, values, and lifestyles that are learnt, shared, and transmitted among generations, influencing the ways of thinking and action; on the same way, Purnell[2] adds to the cultural concept the behavioral patterns, lifestyles, artistic creations and thoughts that are socially transmitted and which guide perspectives on the world and decision making by the people. Spector[3] adds the conceptualization on the diversity of traditions in health as part of the cultural heritage that conditions actions, behaviors, and experiences people have about health and disease.

Colombia is a multiethnic and multicultural country, situation determined by the historical coexistence of diverse ethnic groups, mestizo processes, and explicit recognition in the Political Constitution of 1991 of territorial autonomy and protection of ethnic and cultural diversity as pillars of the nation.[4] From the constitutional framework, minority ethnic groups, among them the indigenous, have been object of cultural and social recognition. The indigenous in the country constitute 4.4% of the population,[5] are distributed throughout the territory in nearly 733 indigenous reservations, but principally in dispersed rural zones, border zones, and uninhabited territories, in their majority lacking basic infrastructure and of difficult access.[6] In the Department of Antioquia coexist Embera, Senú, and Gunadule or Kuna Tule indigenous ethnic groups that add up to 37,628 people, distributed in 31 municipalities and organized in 193 communities and 51 reservations. The Embera are the most-numerous ethnic group, by virtue of their inhabiting in 23 municipalities of the department. As macro-ethnicity, among the Embera there are subgroups identified based on eco-cultural adaptations, for example, the Eyabida or mountain people settled in the west and Urabá; the Chamibida in the southeast; and the Dóbida or river people who inhabit in Urabá and the zone of Vigía del Fuerte.[7]

The living and health conditions of the indigenous peoples have been framed by complex dynamics of historical, social, and environmental change

linked with the expansion and consolidation of sociodemographic groups in distinct regions and other phenomena linked with rurality, poverty, lack of action by the State and the effects of violence that for years have struck these co-nationals with greater rigor.[6] The epidemiological data of morbidity and general mortality, maternal mortality, neonatal and infant mortality of the indigenous report higher figures than those from the general population, revealing, on one side, socioeconomic barriers of access to basic health services, discrimination due to ethnic reasons, inequity, lack of cultural recognition[8] and, on the other, difficulties related with emerging conflicts due to the cultural characteristics that affect and limit interaction with the health staff.[9] Adding to the aforementioned that research focused on the phenomena of health and ethnicity in Colombia are not studied in depth possibly due to gaps in the epidemiological data and lack of registry and monitoring systems that include the variable of belonging or self-recognition to an ethnic group,[10] with the aggravating condition that people belonging to these groups, like the case of the indigenous, have poor health results.

The socio-sanitary conditions and problems described in the indigenous communities in the country keep similarities with other aboriginal groups around the world. McKonkey[11] found that the indigenous faced economic and social challenges when seeking health services, alluding to geographic and cultural issues; Goodman *et al.,*[12] indicated the growing evidence of inequities in health experienced by Canadian aborigines due to racism and systematic discrimination. Hautecoeur *et al.,*[13] described geographic, economic, and cultural barriers that limited the use of hospital services, concluding that these were not adequate or sufficient to respond to the needs of the indigenous, issues ratified by Li[14] who indicated that cultural barriers were decisive when addressing the inequities existing in the health care of the indigenous.

Besides the situations stated, it has been documented that the experience of hospitalization supposes a challenge for the indigenous from feeling disoriented and the lack of consideration for cultural and spiritual aspects [15]. Likewise, it has been described that stereotypes of racial stigmatization condition negatively the attitudes and actions of those who provide care,[12] causing non-satisfaction of their needs and for relations with health professionals to be deficient.[15] Upon this panorama, the experience of rejection perceived by the indigenous during care has as consequences disengagement or delay in care,[12] communication problems, and poor health results.[15]

With these considerations, it is needed for health professionals to evaluate the indigenous patients in their cultural context to bridge existing gaps in care,[12] incorporate cultural aspects during hospitalization, and contribute to diminishing the inequities and ethnic and racial disparities[15] to improve health responses [14] and provide holistic and quality care.[16] Under the assumption that the cultural characteristics of the people condition their health experiences, the present study was developed by starting with the question: How is the experience of the indigenous when receiving care in hospital? A question that gains relevance in the current moment in which the health system transformations have incorporated elements for the adoption of territorial approaches and harmonization with cultural aspects in caring for the indigenous communities contemplated in the Indigenous System of Intercultural Health,[17] an aspect in which Colombia and other countries have advanced in regulating the application of traditional medicine with the purpose of seeking equity in health care, respect for cultural diversity in the commitment to improve the living and health conditions of the indigenous communities.

This text describes and analyzes the findings of the study conducted with indigenous patients in the context of a low-complexity hospital institution in western Antioquia, Colombia to understand the meaning of the experience of receiving care in the hospital for the indigenous, to examine the reality of care and generate contributions to enhance

the capacity of the health system to provide sensitive health care congruent with the cultural characteristics of the people.

Methods

Qualitative research with ethnographic approach was conducted, in external consultation areas and outpatient services, hospitalization ward, emergency, and nutritional recovery ward of a low level of complexity public institution, located in western Antioquia, Colombia. This methodological approach was useful to study an indigenous group as people with determined cultural traits to describe and comprehend reflexively the language, behaviors, and practices in the hospital context.[18] The study had participation from 12 indigenous Emberá from the Eyabida ethnic group, who were selected through purposeful sampling. Of the participants, five were patients, three were companions, and four corresponded to key informants who, due to their role as indigenous leaders, provided testimonies that permitted broadening the description and analysis on the social and cultural situation of the indigenous. Initially, an approach was made with the Indigenous Governor to secure authorization as traditional authority and, through him, contact was established with the rest of the key informants. The other participants were contacted in the hospital, while in condition of patients, companions in hospitalization wards and emergency, or users of outpatient services.

To establish communication, the study was aided by an indigenous translator who spoke Spanish and who was recommended by the Indigenous Governor. Due to his leadership condition, the translator acted as gatekeeper and cultural mediator because he knew the hospital, members of the health staff, the technical language in health, and institutional processes and procedures; the translation task was compensated economically. The participants were contacted directly by the researchers in the hospital facilities (face to face). Participants were explained the objective of the research in their native language and were asked to grant their informed consent. In this regard, only five participants signed the consent and the remaining seven gave their oral consent, given that for the indigenous the spoken word is worth more than the written document. Three indigenous individuals contacted decided not to participate in the research.

Data was collected during 10 months, through 13 semi-structured interviews conducted directly by the team of researchers (a man and a woman experts in research) with support from an interview guide and intermediation by a native Embera translator. The interviews were carried out with the participants only in the hospitalization ward, emergency ward, or in a consultation office, with an approximate duration of 40 minutes, during which were propitiated privacy conditions for the conversation. The testimonies were recorded in digital files for their subsequent transcription, reading, and analysis. The observations made focused on the context, interactions, and communication with the indigenous, and among these with the members of the health staff and other people within the institution. A field diary contained the notes and registries of observations during the field work. The study used 40 hours of observations made in the hospitalization ward (24 hours), emergency (12 hours), and external consultation (12 hours) at different hours of the day, especially during the mornings because it was the period of higher attendance of the indigenous to hospital services.

The transcriptions of the interviews and the field diaries were subjected to the ethnographic descriptive analysis process, performed manually by the researchers. The texts were read line by line looking for units of meaning among which codes were identified. By using analytic files, the codes were grouped to construct the categories and organization of the themes. The analysis made parallel to the data collection permitted

developing the theoretical sampling to broaden the inquiry on the phenomenon. The analysis concluded when data saturation was reached in the categories. With the emerging categories, a map was elaborated that served to establish the logical connections among them and facilitate the theoretical involvement in the final stage of the analysis.

The study followed rigor criteria based on strategies of confirmability, credibility, transferability, and consistency; [19] this was supported by an Embera indigenous translator and the interviews and field diaries were transcribed directly by the researchers in the earliest possible time. Reflexivity played an important role throughout the research process; nevertheless, it gained special worth during data collection and analysis in which the researchers as instruments were immersed within the phenomenon to explore it in depth, remove bias, and reflect on the richness of the testimonies by the participants. The transcriptions were shared with some participants and key informants to establish if the findings described reflected their experiences in the hospital. During this stage, the comments by the indigenous served to broaden the dense description of the context and experiences. Finally, to ensure the consistency of the findings, triangulation processes were conducted of techniques when contrasting testimonies from interviews with notes from the field diaries; by researchers through revision and discussion of the findings with the members of the research group and contrast with that reported in the literature.

The study was authorized by the Indigenous Organization of Antioquia, as social entity representing and defending the rights and claims of the indigenous peoples; in this same sense, authorization was also obtained from the hospital's management to carry out the field work. In compliance with ethical requirements, endorsement was obtained from the Research Ethics committee of the Faculty of Nursing at Universidad de Antioquia and authorization by the Highest Indigenous Governor in the region, as maximum authority representing the participants. Commitments acquired were respected with the ethical endorsement, among them the informed consent. Only five participants signed the consent and the remaining seven granted oral consent, considering that for the indigenous the spoken word is worth more than the written document. This situation was corrected by having authorization from the local indigenous authorities. Confidentiality of the participants was respected, which is why each interview was identified with an alpha-numerical code and data alluding to places, the institution, and the people were omitted.

Results

Twelve indigenous participated, four were key informants of male gender who acted as indigenous leaders. Of the rest of participants, seven were women and one man. Ages ranged between 21 and 48 years. Women participants were dedicated to household chores and to teaching in primary school, while the men worked as teachers or day workers (farmers). The reports by the participants alluded to their recent or past experiences as patients or companions, principally of children hospitalized and users of the institution's outpatient services. In the analysis process, five themes emerged that configure the experience of the indigenous: the context and conditioning on health care, the need to consult the hospital, changes experienced in the hospital, experiences regarding treatments, and relations established within the hospital.

The context of caring for the indigenous

The study was conducted in a hospital to the west of the department of Antioquia, which offers low-complexity services. These types of institutions have the physical infrastructure, technological capacity, and human resource to care for and solve non-complex health problems and carry out activities to promote health and prevent disease

with support from a team of professionals in areas of medicine, nursing, bacteriology, dentistry, nutrition, pharmaceutical chemistry, and basic health. In this scenario, care is provided by following institutional norms and protocols derived from the current model of providing services and the canons of western medicine. In the testimonies by the participants, the first element that emerges is the *tambo*, which is the habitual place of residence of the indigenous. In it, or in its surroundings, take place vital individual, family, and collective processes to guarantee subsistence, satisfy basic needs for food, rest, health care or congregation to perform rituals and collective ceremonies: *I had two children who were born in the tambo... I don't know why... custom I guess...* (E4 P1, woman, p3).

The meaning of the experience of care in the hospital is constructed from a dichotomy that reflects the favorable and unfavorable aspects that surround it and which include the decision to consult, travel to the hospital, accreditation of documents, daily experiences within the hospital, treatments, and communication with members of the health staff and other people within the institution. In this sense, the need to travel from the *tambo* to the hospital configures transit marked by various difficulties, for example, abandoning temporarily the activities that guarantee them economic subsistence, travel long distances walking or in scarce transport means available, and the costs of said travel: *I work, in these nine days I have left the job, I... I am a day laborer... yes, in the fields because I have... to work in plantain crops...* (E11 P5, man, p1); *From where we come from it takes an hour by motorcycle, but by car two hours... it's far and say to (mentions the name of a township), there are people who have to walk two days, so it's more complicated*. (E7 P4, woman, p3).

Once in the hospital, the indigenous face difficulties, like not finding medical appointments available and being requested *documents* to prove their affiliation to the General System of Social Security in Health. On one side, travelling from remote zones does not permit the indigenous to arrive on time to solicit services, and on the other, they do not always have the identity documents required in the institution to verify the rights and affiliation to the system, because in the cultural tradition of the indigenous, importance is granted to the spoken word and to the name of the person as a custom inherited from the ancestors, which is why they do not find it necessary to be verified through documents. Within this scenario, emerge the obstacles and delays to receive care: *sometimes you get to the hospital apart and if you can't get the number they say to wait, to wait...[....] because sometimes there is a doctor, there are three doctors, not enough, too many people...* (E9 P6, woman, p3); *...I was first asked for the document and sent me back home, I was told to first get the identity documents to care for my daughter, but she was already in serious condition, they do the same in XXX (mentions the name of a township) also, if you do not have the document you are not provided care...* (E7 P4, woman, p8).

From the difficulties described, the participants describe the strategies that permit their overcoming such, for example, use of the passage house or shelter offered by the Administrative Entity of the Indigenous Benefits Plan, while they manage to solve the health problems and receive effective support from indigenous leaders, who besides serving as translators, are mediators with the directives and personnel, both in the hospital as in other government entities to carry out the necessary procedures and get the documents required for care.

The need to consult the hospital

Upon situations that affect health, the indigenous turn first to the traditional medicine men or *jaibanás* from their communities as initial resource due to their closeness and availability to care for them. In this meeting, the traditional medicine men make an initial assessment of the sick, which serves to establish the type of illness

and the options they have to facilitate the cure (herbs, prayers, beverages). Thus, decide if it is a disease of the indigenous or if it is a problem that must be solved by the doctor in the hospital, case in which, they recommend traveling and seeking institutional care. This decision is decisive for the indigenous to travel or not to the hospital, under the consideration that the traditional medicine man has the capacity to cure that which the doctor from the hospital cannot. Based on this, the traditional medicine man cures problems, like evil eye, malaise, headache, stomach ache, and other conditions, like malaria, leishmaniosis or hepatitis must be seen in the hospital: *Because of that, we first go to the traditional medicine man, when the medicine man says that... that you don't have a disease of the indigenous, he sends you to see the doctor... diseases, no for, for me, for example is a pain, a discomfort, and thus [...] you cure them with plants, plants also exist for that, for pain, for stomach pain, headache, discomfort and so on, and when the medicine man does not find a disease, he then tells you to come here (referring to the hospital)* (E6 P3, woman, p13);
...that she feels well given that during the treatment, that she has felt improvement because later she will be recovered from her disease she has, like leishmaniosis... says that maybe... that she until the moment has not... has not known of any traditional medicine man who cures that disease (E4 P1, woman, p2).

The severity that covers the health problem is another determining aspect to seek care in hospital without recurring to the traditional medicine man, that is, the indigenous travel directly to the institution when they note that the health condition is deteriorated and complication signals appear, a situation expressed by the participants as "*being screwed*" that is, very severe: *...it is that most of the indigenous I have seen don't come just like that to the hospital, never, but it has to be very serious that they now can't have (refers to giving birth)..* (E7, P4, woman, p10); *I had (one) granddaughter who was pregnant, the girl of the house was a mess (in very severe health condition) and I brought her here at night* (E9 P6, woman, p5).

As stated by the participants, the decision to not attend the hospital is conditioned by prior experiences in the institution, so that they sometimes prefer not to consult, given that in spite of dealing with all the difficulties that arise, when they are seen they are prescribed "pills" or "acetaminophen", which from their view do not solve the health problems, hence, they choose to go directly to drug stores in the location where they are sold the medications that effectively help them to be cured. Thus, they do not go to the hospital and the decision to self-medicate, or be medicated in the drug store compensate the efforts they must make to get up early and travel from faraway places: *...because of that, the indigenous sometimes do not come because they are given acetaminophen, acetaminophen you can buy... imagine you getting up early around here to be here to [....] well. The only thing I say is that the drug... acetaminophen, not that, they say that is the only thing covered by the plan and all those things, but you... you sometimes no, it does not take away, it is to maybe calm you a bit, but that is not to be cured, you have to buy!* (E7 P4, woman, p3), *...then if you are there and are not seen, you come here and buy the drug ... here in the drug store ...we sometimes go when the plan does not cover the drug, well we have to buy the drug, because only the doctors and when they see you they give you acetaminophen....* (E9 P6, woman, p4).

Changes experienced in the hospital

Going from the *tambo* to the hospital represents for the indigenous a series of changes in the space in which they live the experience of the disease, a situation expressed as changing home, to allude to the differences they find between the physical characteristics of their habitual place of residence and those of the hospital. The hospital in which this study was conducted keeps a similar pattern to that of other low-complexity

health institutions in the department, as far as the type of construction, organization of spaces, organization of care areas, and distribution of the rooms in the hospitalization area; nevertheless, it was possible to observe some adjustments made to care for the indigenous, for example, supplying mats and baskets as part of the furnishings, decorating walls with paintings and engravings allegorical to the healing tables (symbols) and translation of the rights and duties of patients in the Embera language. The evaluation made by the participants of the conditions of the facilities and the resources available in the hospital compared with the physical characteristics of the *tambo* are the basis to establish that the change can have positive and negative effects on the health condition and recovery. In contrast with the positive evaluation, change of the vital space clashes with their expectations because they feel that the hospital is a close and cold place that can make them sicker: *It is better to be sick here in the hospital... here they help you a lot; in the tambo, who goes there to help?, you die ... here on the floor of the tambo, well, for me, because I have been here for two years and well for me it seems that around here it is better, there in the tambo there is too much mud, oh no, no!* (E5 P2, woman, p13); *She says that she's a bit uncomfortable, because the room is closed and cold, then the room needs to be more open, yes...* (E4 P1, woman, p1).

Change in the physical space for the participants changes in the way of satisfying their basic needs, like eating, hygiene, and elimination. In relation to food, the differences the indigenous find between the diet provided in the hospital in comparison with the foods they consume daily suppose a difficulty that implies their consuming food with disgust, not eating or, even abandoning the institution due to this cause: *...the indigenous who live in the forest and all those things eat fish, they eat meat from the forest not too many chemicals, instead what is meat, the meat is bought and mostly has lots of chemicals, right?, then, that's it ...they don't like it, they don't like to eat rice much, there are very few who eat rice and all those things ...and salad, given that when they come here they get tired a lot and get very bored, that is what happens here when they arrive ...*(E7P4, woman, p3).

Satisfaction of hygiene and elimination needs are also subjected to a series of changes that represent difficulties to them, given that they are not familiarized with existing sanitary facilities in the hospital. In the daily lives of the indigenous bodily bathing or evacuation is done in nearby rivers, hence, they do not recognize or know how to use the shower or the toilet; upon this situation, during the hospital stay they take care of their physiological needs in unsuitable places or abstain from doing so. Regarding the lack of knowledge or inadequate use of the sanitary facilities, the participants report that the difficulty is more notorious when scolded and recriminated by the people caring for them due to their "*lack of cleanliness*". *...and above all that you have to take a shower, that one thing, that the bathroom, imagine that, the indigenous do not the bathroom, as well as farmers, it has to be the brook ...* (E6 P3, woman, p15-16); *...sometimes people come like, as they say, we know nothing indigenous, then it's clear, the part you say, the hygiene, all that is very different, then they tend to treat you badly verbally with those types of situations* (E2 IC2, man, p3).

In spite of the changes and difficulties described, the indigenous develop strategies that permit them to overcome the problems; hence, they adapt to the hospital conditions through a learning process: *...has learned to use it ...yes (referring to the use of sanitary services).* E4 P1, woman, p5); *...let's say, because many times ah is that in the hospital you are not well cared for, you have to adapt to improve the health...* (E6 P3, woman, p12).

Experiences in relation to treatments

Once in the institution, the treatments received and procedures performed condition the experience of

the indigenous because they establish a connection between the time and achievement of a cure reflected on improving the health conditions or disappearance of signs and symptoms. In situations in which, in spite of the passage of time, the participants do not observe improvement in health conditions, they decide to abandon the institution and seek care from the traditional medicine man as option to deal with the problems: *...yes, yes... they cure you well ... long time, yes... that is, like eight days, one month, like that* (E5 P2, woman, p4); *As long as he is better, it does not matter, if it is waiting, but does not improve then no, if this doctor does not help to improve we have to take him to another doctor who does help, the traditional medicine man* (E11 P5, man, p4).

Besides the medications as therapeutic strategy, the testimonies by the participants describe procedures that use medical equipment and technological devices unknown to them regarding their use and utility. Intensive use equipment under conditions of severity, recognition of apparatus as sources of cold and, hence, the cause of more illness, are generators of emotional reactions, like the fear and uncertainty that condition the experience: *well, they placed in the child many things, I, I, I, that is, I have never seen him like that, they placed a needle throughout his whole body and had around here, there a thing there that sounded, and now...[...] that is they place on the child ... they placed, I don't know what it is called, they put in his mouth around here, as... I think so, they gave him food through there ...I don't know, given that I have never seen something like that apparatus ....but a tube there like blue there, blue something like that, I didn't even ask because it was, I was very scared because ... because it was like, oh no!, more horrible there! [....] no, I would get like the child was like sleeping and they put that thing through the stomach, then I thought well with that thing maybe he ... that is it made everything cold ...then the doctor told me no, the doctor told me not to get frightened, to relax, now, it went well ...* (E6 P3, woman, p10-11); *I don't know apparatus...most of the indigenous, in turn, are afraid of coming to the hospital (*E7 P4, woman, p7).

Experiences of the indigenous in relations they establish in the hospital

The relations the indigenous establish in the hospital, whether with members of the health staff, personnel from the institution, or other people (indigenous or not), condition the care experience in relation with the communication they manage to establish with the different players. For the participants, all the people who work in the hospital are denominated "*doctors*", without establishing a distinction among those practicing care work and those who carry out tasks of logistic or administrative support. Independent from this, communication and the difficulties they experience with the people caring for them, are the base for the indigenous to classify people into good or bad. For the indigenous, the "*bad male or female doctors*" are those who do not treat them well, show no interest for their problems, or do not take care of them in timely manner: *...sometimes you get a doctor with the bad doctor who does not like indigenous ....does not understand what ...they tell you things in a bad way, ask, because sometimes, like I am saying I, I do say everything, the indigenous we are, sometimes the indigenous come all dirty, sometimes with everything like if they did not comb their hair, with all the clothes that people kind of don't like, right?, then the doctors get disgusted with the indigenous who come all dirty, they don't come all cleaned up – rather with all ...there are some that one as if they were not people* (E9 P6, woman, p2).

In contrast with that described, other participants value positively relating with the people who care for them in the hospital, given that they manage to establish a better interaction with the people who the catalogue as "*good male and female doctors*", alluding to their capacity to communicate with them, the good treatment they give them and the interest they display to help them solve problems.

As stated by the participants, the communication they establish with the good male and female doctors is supported on the fact that they do not scold or treat them badly, whenever they are in good behavior and are obedient: *...me as an indigenous, I recognize everything, from the doctors here ...there are female doctors, there are good female doctors, then they care well, receive you well, ask everything ...[....], ah the doctor when he is like very nice with you then they ask what hurts?, since when is it like that?, what do you have?, and you tell them so because they are good ...[....] and also when the female doctor is kind of nice does treat you well as women, then you tell her what happens ....you feel confidence, if the doctor is good if you treat him well and he receives you with kindness, yes.* (E9 P6, woman, p2,4,5,6); *...well, I was taken care of well, they treated me well, did not scold, well you have to be obedient and well behaved so you won't get scolded...[....], but rather, if you are well behaved no, they do not scold you* (E7 P4, woman, p16).
They do not scold, when you pay attention to them, then they scold you to get the child well organized, or to change the child's clothes and that (E8 P5, woman, p3).

In addition to relating and communicating with the members of the health staff, the indigenous communicate with other people in the institution under the same circumstance as patients or companions. Relating is done principally with other indigenous because they feel the need to talk, they do not experience the language barrier and communicate messages that let them understand the situations of the environment to learn and overcome the experience in the hospital.

Discussion

This study was conducted with the aim of understanding the meaning constructed by the indigenous from the experience of receiving care in hospital. For the participants, assessment of the elements of the context, the need to consult and travel to the hospital, changes experienced on the way to satisfy basic needs, treatments and relations established within the hospital are the aspects that condition the experience described from a dichotomous perspective, represented – on one part – by the difficulties and barriers they face during care, and – on another part – by adapting to the hospital environment, achieving recovery and the learning obtained. The experience of the indigenous of receiving care in hospital is framed within a multicultural moment in which converge two care systems that correspond to different cultural patterns (traditional indigenous medicine and biomedical western medicine), so that a series of situations emerge that configure a series of difficulties among the players, in relation with the ways of understanding living and health processes and how to solve them, configuring the cultural conflict.[20]

The context in which the indigenous live, the activities they carry out in their daily living, their transit from their habitual place of residence to the hospital, and the difficulties they experience to receive health care, comprise a scenario marked principally by adversity, inasmuch as the onset of the disease disrupts their daily lives and, in case of not being able to solve the problems with the resources offered by the traditional medicine man, they must travel to the hospital. Similarly, Arias and de la Cuesta[21] coined the category of unstable equilibrium to describe and analyze the of the internal and external context of the members of an indigenous community in the southeast of Antioquia, which as with the participants in this study, had conditions of insecurity, marginality, poverty, and exclusion, as conditioning factors of the lifestyle and the possibilities of access to health services.

The difficulties expressed by the indigenous configure access barriers to receive care. The first of these is their displacement from faraway places, using scarce transport means available, or

even walking long distances. Similar findings were described by Patiño,[9] McKonkey,[11] Goodman *et al.,* [12] and Hautecoeur *et al.,*[13] who reported geographic barriers as an essential element of the inequity the indigenous live in other contexts, so that the conditions of inaccessibility are the principal limitation for the indigenous to use health services. Other difficulties described by the participants in this study allude to not finding medical appointments available or not having the documents required in the institution to provide them care. Maldonado-Sierra[22] documented that the indigenous face difficulties in access to health services due to the lack of identity documents to verify their membership to the health system and the lack of transport means from faraway places. Not having identity documents is one of the principal difficulties the indigenous experience when requesting services from the institution because identification is necessary to access the benefits of the health plan of the subsidized regime; conflict emerges because within the indigenous Cosmo vision the name bears special importance to identify oneself within the community and is part of the way it reaffirms the individual and collective cultural identity, which in terms of Ramírez implies that orality and writing are fundamental elements of the historical traditions of the communities with the purpose of not losing the historical and cultural roots of each community.[23] Seen in another way by the indigenous, excessive administrative procedures cause rejection and limit their possibility for care.[8]

In spite of progress to increase health coverage of the general population and promote membership of the indigenous communities onto the General System of Social Security in Health, insurance is not the only obstacle to overcome, nor is it the guarantee that the indigenous will use health services, inasmuch as barriers persist at cultural, administrative, geographic, and financial levels that limit access.[8] In general terms, as with that described in this study, other authors have emphasized on that the cultural barriers cause inequity and discrimination in health services [11][14].

Within the context of this study, there is an administrative entity of the health benefits plan for the indigenous communities for the health insurance and care required. Likewise, the hospital has implemented strategies of intercultural approach through dialogue with members of the indigenous community and the physical adjustments necessary for care. However, according to that described by the participants in this study, the adjustments and resources are still insufficient; an aspect similar to that indicated by Ariza[8] that sometimes positive actions (arrangements, adaptations, adjustments) are seen by the indigenous as a sneer and an imposition by the system that still has not generated good results. Upon this, emerges as a point of reflection on how intercultural approach and adaptation strategies come about as a result of the required negotiation processes. For the participants in this study, going to the hospital in search of health care is not the first option. As with other human groups, they try to satisfy health needs with resources available in the community, whether the traditional medicine man, whom they also call *jaibaná* and even *raicero*. The decision to consult the traditional medicine man is supported on the evaluation they make of the problems the indigenous consider are under their capacity to solve. A similar situation was documented by Ariza[8], indicating that traditional medicine is the first therapeutic option due to the cultural roots and the possibility of solving the health problems that western medicine cannot; given that the idea of healing among the Embera is much broader, and the *jaibaná* is in charge of curing the people and the environment, contributes in the construction of collective and political identity [24] and transcend the medical task, approaching that of the priest who has the capacity to manipulate both the spirit and the disease.[25]

Although this research did not propose the objective of revealing the meaning of health for the indigenous, the findings indicate that when they look for care in hospital, they expect to be healed or to have the problem totally solved,

based on the conception they have of health and disease founded on the natural balance derived from the construction of relations with spiritual beings, the environment, equilibrium between these, restrictions and prohibitions, and good eating habits [26]. For the Embera, the origin of ailments and their classification as diseases caused by God, by whites, or by the malevolence of other *jaibanás*, takes root in the representation they have as existing entities, manipulated by mythical beings of different forms, with diverse intentions and which can be treated or not by the *jaibaná,*[25] or in their moment by western physicians according to the decision made at the time by the traditional medicine man.

Once in the hospital, satisfaction of basic needs and administration of treatments is conducted within a frame of difficulty, given that identity and cultural traits are not valued or taken into account to care for the indigenous in many aspects, among them hygiene and feeding, which is why the cultural conflict is configured [20] because of the cultural differences and divergence in the representations on health and disease between the indigenous and those caring for them. The cultural conflict in question emerges when each player reflects the hereditary consistency rooted in their traditional culture that frames the differences in the beliefs and conducts adopted with respect to health and disease and which have as object to preserve the traditional cultural heritage.[3,27] Within these considerations, for the indigenous the experience of care in health services fulfills, in most cases, a restrictive and imposing function, as expressed by other authors.[8]

The indigenous establish relations with the people they find in the hospital, whether members of the health staff (physicians, nurses, administrative staff, etc.,) or other patients or companions. The base of these relations is supported on the communication that, although sometimes is basic or even adequate, at other times is limited because of the language barrier, a situation that broadens the frame of difficulty in which care takes place. These types of limitations in communication widen cultural gaps, hinder care [11,13,14], satisfaction of needs, and achievement of the healing expectations of the indigenous. As well as that described in this study, other authors have indicated that difficulties in communication configure scenarios in which caring for the indigenous is postponed, being blamed for their health condition, rejected and systematically discriminated,[11] a situation reflected in the lack of adaptation of spaces and care,[8] ratifying that care is framed within the multicultural moment,[20] characterized by lack of interaction and joint and reciprocal work to solve problems.

Given that the experience described, likewise, has a positive connotation, the indigenous recognize the effort made by the members of the health staff to communicate with them and, hence, deploy all the actions necessary to provide them with good care. Thus is configured the intercultural moment in which, as proposed by Siles[20], there is adaptation and adjustment of the context and forms of communication, resulting in greater approach between the indigenous and those caring for them. This intercultural focus emerges as a result of the strategy of differential care developed in the hospital to harmonize the elements of the institutional care model with the traditional indigenous values, resulting in the reciprocal adaptation processes that condition favorably communication and interaction.[28,29]

This transitional process, from multiculturalism to inter-culturalism, implies understanding the meaning of the health-disease process through the vision of the indigenous, establishing the dialogue of wisdom and strengthening the formation of health professionals of indigenous ethnic origin. The importance of inter-culturalism in health lies in the complementarity and reciprocity linked to the inter-subjectivity that emerges in the encounters between players with different cultural baggage.[26] In this manner, institutional action is required, as well as strengthening the individual capacities of the professionals caring

for the indigenous population, that is, develop and increase the cultural capacity. According to Purnell[2], cultural capacity is defined as the health professional's capacity to provide care supported on the cultural characteristics of the people, to promote comprehension of the human experiences in the health-disease process; which according to Leininger[1] implies the implementation of culturally congruent care in which knowledge and sensitive actions of the care providers adjust to the values, beliefs, and lifestyles of the people as axis of health care. In light of these authors, cultural capacity emerges from the intersection of the *emic and etic* perspectives of the players involved in the care phenomena.

In line with the above, cultural capacity supposes the formation for health professionals to recognize that people deserve respect within their framework of cultural reference, as well as to reflect on their cultural identity to know, understand, and respect the cultural characteristics of the receptors of care, interpret the system of traditional meanings on health and generate mechanisms that diminish existing barriers.[3] Upon examining the level of cultural capacity in Medellín, Giraldo and Escobar[28] found that 41% of those surveyed expressed not having received formation on themes of care and cultural diversity, although considered a fundamental aspect during formation. Similarly, Herrero *et al*.,[29] on estimating cultural self-efficacy on a scale from 1 to 5, found that the score reported for caring for the indigenous was 2.72, below the values reported for the Afro-descendants and Mestizos. All these data highlight the urgent need to incorporate cultural aspects of care as a transversal axis in the formation of health professionals, in an attempt to harmonize disciplinary and professional aspects with the population's care needs, the constitutional framework and the health legislation in effect.

Enactment of the Statutory Health Legislation that establishes and regulates the fundamental right to health,[30] adoption of the Indigenous System of Intercultural Health (SISPI, for the term in Spanish),[17] the Policy of Comprehensive Health Care (PAIS, for the term in Spanish),[31] and the Model of Integral Territorial Action (MAITE, for the term in Spanish)[32] generate the favorable scenario that allows promoting recognition of cultural diversity in health, which supposes a substantive challenge for all the players in the health system and other sectors involved in social development. The SISPI,[17] understood as the policies, norms, principles and resources, institutions and procedures supported on a conception of collective life in which ancestral wisdom serves as guide for the System, in harmony with mother earth and according with the Cosmo vision of each people, seeking articulation, coordination, and complementation with the General System of Social Security in Health, focuses on maximizing achievements in health of the indigenous peoples; supposes a challenge for health institutions, professionals, and the indigenous, given that it demands arduous work of approach on the social response of the health professions to transcend from the physical, technical, and instrumental toward a process of reflection and self-recognition as social and cultural beings, and of respect and recognition toward other social beings with different cultural characteristics.

For health professionals and especially for those in nursing, the challenge consists in enhancing the processes leading to developing and strengthening the cultural capacity and based on it, carrying out necessary actions in the clinical and community settings to generate the best possible conditions to care for the indigenous. The results of this study and of others that have analyzed health care of the indigenous from public health,[33] in Embera[8,21,26] or Wayúu communities,[9,16] ratify the commitment by nursing of incorporating the concepts of trans-culturalism to ensure safe access of the indigenous to health services. According to McKonkey,[11] the strategy of cultural security may contribute to increasing awareness on the access barriers confronted by the indigenous when seeking health services, reason for proposing the creation of health care sessions in dispersed

rural zones, among others. In this same line, various authors[8,14-16] indicate the importance of health professionals contributing to improving the situation of the indigenous and diminishing prevalent ethnic and racial disparities through social interventions and holistic care actions that improve the living and health conditions of the indigenous.

It is important to establish that this study was conducted in a health institution with specific characteristics, hence, the findings must be understood within this context in particular, inasmuch as they correspond to the subjective appreciations of the participants in relation with their experiences during care in hospital. The data illustrate how the context of the indigenous and in which care is provided, conditions the construction of the meaning of the experience, situation that could be transformed while the institutional dynamics and interactions among the players also change over time. Moreover, in spite of the linguistic mediation by a native translator, communication could be limited to understand in broad sense the meaning of the testimonies and narrations by the participants. Likewise, it must be specified that the participants belonged to a particular ethnic group whose cultural and linguistic peculiarities do not reflect the entire cosmogony of the members of the Embera nation throughout the Colombian territory.

To conclude, the meaning of the experience of receiving care in hospital for the indigenous is constructed from the context in which they live and receive health services, the changes they live in the dimension of space by virtue of traveling from their vital space to another space that, due to its physical characteristics, results strange and different, even non-healing. In the construction of the meaning, the treatments received and way of satisfying basic needs play a fundamental role, given that they confront different situations not harmonized with their cultural constructions on the way of caring for health problems or performing the activities of basic life. Undoubtedly, the principal conditioning factor of the experience is the communication they establish in the institution, whether with people who provide them care, with other relatives or companions. In this point, the language barrier constitutes an important limitation from which emerge lack of trust, scarce or null interaction, and poor care results. Nevertheless, the indigenous value positively efforts made by those caring for them to communicate with them and adapt the conditions of the environment for said purpose. They acknowledge that, although the institution has carried out actions of cultural approach, progress is still needed in generating better conditions for care. Against experiences they live in hospital, especially the negative ones, the indigenous develop adaptation mechanisms that permit their overcoming difficulties and learning. Finally, the findings described, understood within the legal health framework with intercultural focus, suppose an important challenge for nursing professionals and health professionals in general to strengthen the cultural capacity and advance in developing actions and interventions of negotiation and cultural adaptation that contribute to improving the living and health conditions of the indigenous communities coexisting in the Colombian territory.

This article provides qualitative evidence for health care to minority ethnic groups, like the indigenous, to be accessible and in harmony with their cultural values through negotiation processes and intercultural approach, founded on the principles of Transcultural Nursing.

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Communication in health work during the COVID-19 pandemic

Original article

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Communication in health work during the COVID-19 pandemic

Abstract

Objective. Report on communication and qualified listening in nursing work in the face of the COVID-19 pandemic. **Methods.** This descriptive, theoretical and reflexive report was developed by nurses between March 20th and May 25th 2020 at Emergency Care Services in the city of Fortaleza, Ceará, Brazil. Health communication served as the theoretical background for this research. **Results.** Two main thematic categories were highlighted: (i) Resignifications of communication in the work relationships of the health team and (ii) Guided listening to users by nurses at the Emergency Care Services during the pandemic. **Conclusion.** The experience revealed an excerpt of what is found under the conditions of the current situation resulting from COVID-19. Communication turned into an essential tool to maintain professional relationships and culminate in collaboration and cooperation of the team in order to provide a close relationship with the user and promote the quality of health care processes.

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Descriptors: Coronavirus infections; health communication; patient care team; nursing.

Comunicación en el trabajo sanitario durante la pandemia de COVID-19

Resumen

Objetivo. Relatar la comunicación y escucha calificada en el trabajo de enfermería frente a la pandemia por la COVID-19. **Métodos.** Se trata de un relato descriptivo, teórico y reflexivo elaborado por enfermeros, del 20 de marzo al 25 de mayo de 2020, en Unidades de Atención de Emergencia de la ciudad de Fortaleza, Ceará, Brasil. La investigación posee fundamentación teórica en comunicación sanitaria**.** **Resultados.** Se destacaron dos categorías temáticas principales: (i) Resignificaciones de la comunicación en las relaciones de trabajo del equipo de salud y (ii) la escucha dirigida de los usuarios por parte de las enfermeras de la UPAS durante la pandemia. **Conclusión.** La experiencia vivida permitió visualizar una fotografía de la situación actual derivada de la COVID-19. La comunicación se convirtió en una herramienta fundamental para mantener las relaciones profesionales y facilitó la colaboración y cooperación en equipo para brindar una relación cercana con el usuario y promover la calidad de los procesos de atención y asistencia en salud.

Descriptores: infecciones por coronavirus; comunicación en salud; grupo de atención al paciente; enfermería

Comunicação no trabalho em saúde durante a pandemia de COVID-19

Resumo

Objetivo. Relatar a comunicação e escuta qualificada no trabalho da enfermagem diante da pandemia de COVID-19. **Métodos.** Trata-se de um relato descritivo, teórico e reflexivo realizado por enfermeiros no período de 20 de março a 25 de maio de 2020 em Unidades de Pronto Atendimento da cidade de Fortaleza, Ceará, Brasil. A pesquisa possui fundamentação teórica na comunicação em saúde. **Resultados.** Destacou-se duas principais categorias temáticas: (i) Ressignificações da comunicação nas relações de trabalho da equipe de saúde e (ii) A escuta direcionada dos usuários pelos enfermeiros das UPAS na pandemia. **Conclusão.** A experiência vivenciada possibilitou visualizar um recorte do que se encontra sob as condições do atual quadro decorrente do COVID-19. A comunicação tornou-se ferramenta imprescindível para manter relações profissionais e culminar em colaboração e cooperação da equipe de maneira a proporcionar estreita relação com usuário e promoção da qualidade dos processos de cuidado e assistenciais de saúde.

Descritores: infecções por coronavírus; comunicação em saúde; equipe de assistência ao paciente; enfermagem.

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Introduction

Nursing goes through periods of change in the global scenario with the coping of the pandemic of COVID-19. Unexpectedly, there are changes in the routine of health services, organizational structures and professional relationships. At this moment, health teams, particularly nursing, are moving in the change and adaptation process, as well as their relationship with light technologies.[1,2] Conceptually, these are relationship technologies, such as welcoming, bonding, independence, accountability, and management as a way of managing work processes.[3] The nurse, as a manager of the nursing team, has the autonomy to occupy all the spaces within their range, whether involving users or professionals, consciously and targeting the subjects' specific needs, aiming for the humanization of health care processes.[4]

From the perspective of the organization of health care actions, the health authorities, surveillance entities and the scientific society established flows in intermediate-complexity care for people experiencing health problems due to COVID-19 to use health services, including Emergency Care Services (UPA). Within this logic, the UPA is important in this process because it is a secondary-level health institution that acts as a gateway, attends to the population in emergency situations, identifying patients with symptoms of COVID-19, and uses care protocols to provide care in the prevention, maintenance and recovery of users seeking the health system.[5]

Thus, light technologies such as communication are fundamental in confronting the pandemic, in performing humanized practices at times of social and health crisis, focused on the desires and needs of the population. Therefore, the relationship between the professional and the user will be a benevolent relationship. The usability of light technologies and humanized care are important in this process.[6] Understanding communication as a light technology that modifies the work processes in the UPA within the pandemic context can represent a model of health team organization and cooperation to improve the quality of care for patients. Therefore, there is a need for studies focusing on the perspective of communication in health work, especially in teams that work in a situation of constant pressure, such as emergency care.

In a critical context such as the COVID-19 pandemic, the study contributes to discuss the interaction of the health team and work models in an emergency, clinical and surgical environment in which communication and listening is a key element to achieve quality goals in health and reduce risks and mortality. In that sense, the objective of this study is to report on communication and qualified listening in nursing work in view of the Covid-19 pandemic.

Methods

This is a descriptive, theoretical and reflexive experience report. These reports favor the production of new knowledge through the construction process, turns experience into a theoretical interpretative object of study and promotes the recovery of phenomena in an orderly manner.[7] The proposal is to discuss the activities developed by two emergency nursing professionals working in UPAs located in Fortaleza, Ceará, during the COVID-19 pandemic, carried out by the authors with a determined and known research objective and justifications for the development of the study. The state was one of the main epicenters in the Northeast during the pandemic peak, with 188,451 confirmed cases and 8,010 deaths by August 8, 2020.[8]

The UPAs are dynamic spaces of pre-hospital emergency care, located in targeted regions of the city where the study was carried out. As parts of the Brazilian Emergency Care Network (RUE), they are places of organization and operation of complex secondary healthcare flows.[9] The care processes to compose this experience report took place between March 20 and May 25, 2020. The choice of the UPA as the place of study for the main research objective was intentional. To define the themes in the report, an adaptation of Minayo's thematic analysis was applied, using the most relevant words, expressions, and themes, built with the reporters' experience, based on the material of the results transcribed in Microsoft Word.[10]

The Consolidated criteria for reporting qualitative studies (COREQ) were used to develop the research: 32- *item checklist* for methodological consistency and quality of the article.[11] In this context, the experience described was discussed from the perspective of the Interprofessional communication process, interpreting this instrument in health work as a phenomenon with complex influences in the interprofessional relationships of the health team. It involves one of the aspects of interprofessional practice to overcome fragmentation in care and achieve problem-solving ability with quality and integrality.[12]

Results

In the analysis of the reports during the period, two main thematic categories were highlighted: resignifications of communication in the work relationships of the health team and the guided listening to users by nurses from the UPAs during the pandemic.

Resignifications in the work relationships of the health team

Initially, the care flows of the UPA were defined to identify symptomatic users with signs and symptoms of COVID-19, such as cough, fever, muscle pain, headache, respiratory distress and other components of the flu syndrome and/or acute respiratory distress syndrome, which guided the lines of care. Patients with suspicion and mild symptoms (oxygen saturation –SatO2 >92%) were evaluated by the physician in the office, instruction was provided and the patients were released for social distancing at home. Cases considered severe with hyposaturation (SatO2<92%) were hospitalized to start oxygen therapy, receive confirmatory tests, receive medication, and cases with severe pulmonary impairment and risk of respiratory arrest were submitted to orotracheal intubation and protective mechanical ventilation.

Developing nursing care activities in this dynamic represented restructuring and resignifying communication between health team professionals to achieve effective and quality care. The communication process in these professional relationships suffered from the precarious work imposed by the pandemic though, and therefore had to be modified. Seeking to resolve communication

deficits that could culminate in quality losses in guided care, meetings and training were held to align the health team's care actions. In this period, the dynamics of the emergency area increased significantly and measures had to be aligned through communication, mainly between nurses and physicians during the visits due to the demand, the risks of mortality in severe cases, and the overcrowding of the sectors due to the delay in transfers.

The communication process contributes, however, for the cooperation and collaboration to culminate in the development of integrated intra-team practices, in decision making on the applicability of care to achieve the patient's wellbeing. In addition, this tool improves the relationship between nurse and physician, promoting interrelations and harmony in health work processes.

In this context, communication turned into an essential tool to maintain interprofessional relationships and culminate in collaborative actions in the team. The difference that allows quality communication processes in the health team and the noises that disrupt these relationships proved to be tenuous. One example is rapid orotracheal intubation and its systematization as a health procedure. This involves sedoanalgesia, introduction of the tube with a guidewire, removal of the wire while maintaining the plunger, clamping of the tube with tweezers, installation of the ventilator, and initiation of mechanical ventilation, being considered a complex procedure in which any failure in the communication of the medical team with the nursing team culminates in risks for the patient.

In this premise, communication was also the basis for decision making and for the development of integrated practices among health team professionals in the care and treatment processes directed to contaminated patients. Deciding on the correct time to, for example, change the nasal catheter to a non-rebreather mask and subsequently orotracheal intubation based on X-ray findings, gasometrical and clinical results literally meant the life and death of patients. These are complex decisions driven by evidence that was and is still under construction in the scientific literature. In most cases, the users' wellbeing was achieved successfully, either in restoring health or, in cases in which this was not possible, providing measures of comfort in terminal cases. It is important to emphasize that achieving harmony in communication processes and relationships among all health team professionals is not always satisfactory but proved to be the best route to quality care during the pandemic.

Guided listening to the users by nurses at the UPA during the pandemic

The nursing team represents the health professionals who spend most of the time together with patients in all care processes. In the pandemic context, this was even more present due to the greater risks of complications, stabilization and care, especially enhanced by the non-permission of companions due to the infectious-contagious risk. Listening to health demands in patients suspected of COVID-19 involved dialogue, understanding and interpretation of the reports, reflection and decision. Countless patients arrived with mild and severe respiratory symptoms and being able to identify signs indicating infection by the novel coronavirus in the reports was one of the main steps in the flows of care and guidance.

Nevertheless, it is important to highlight that qualified listening is also something instinctive, subjective, inherent to the human being, which refers to the humanization of care processes. It demands comprehensiveness in care, makes it possible to achieve health goals and reduce dissatisfaction, disrespect and negative perspectives with health care. The suffering the pandemic imposed further required listening to patients and promoting reflexive health dialogue that culminates in care. In addition to guiding care by listening to health demands, it was also possible to act in the perspective of providing psychological and family

comfort through professional contact with family members and patients.

The use of telephone calls and videoconferencing to have contact with family members showed that listening not only involves care through technical-medical procedures, but also promotes psychological comfort measures. Moreover, the perspective of listening represents a resource to promote mental wellbeing, relaxation, comfort, satisfaction.

In short, conducting guiding listening involves both solving basic health demands and priority and complex care. This complexity in each case, such as stabilization and clinical preservation of the patient and the promotion of physical and psychological well-being can be determined through appropriate listening to the user suspected of COVID-19, as a participant in the care process.

Thus, guided listening to the patient as an aspect that optimizes the care processes was considered to initially prioritize health care in the preservation of life and hemodynamic stabilization. These ranged from oxygen therapy to reduce hyposaturation to critical care in severe cases. In the listening processes by the team, interaction was essential, in which the presence of nurses, physicians and social assistants was necessary, whether in basic and complex care or in social and family relationship procedures and demands. It is challenging to achieve the structuring of the health team in the face of the pandemic, but intensifying the professional relationships and strengthening the health team work proved to be satisfactory to achieve positive results and reduce the impacts of the pandemic.

Discussion

Coping with COVID-19 represents one of the greatest challenges in public health worldwide due to its high rates of illness and mortality, especially in socio-economically unfavorable contexts, such as Brazil, as well as in health work processes and relationships.[13,14] From the perspective of nursing, it is no different, being one of the most affected professions and with higher rates of morbidity, mortality, and absence from work during the pandemic.[15] In this context, the UPAs, together with other emergency care network equipment, represent the gateway for patients suspected of COVID-19 and complex relationships between health team professionals are developed in emergency care practices.[9]

In this premise, communication is an important element for integrated health practices to take place.[16] The disruption promoted by the need for distancing and the isolation the coronavirus imposes strengthens the construction of new forms of relationship, the realignment of care lines and practices.[17] As a member of the health team, the nurse represents one of the main care-related professionals involved in the dynamics of health work. Characteristically, the humanization models of health, the expanded clinic, changes in management and decision-making processes are theoretical and practical mechanisms addressed in the National Humanization Policy, in which light technologies such as communication are one of its main components.[18]

In this context, Merhy reflects in his studies the modes of health production within the work organization through the use of light, light-hard, and hard technologies in the development of living work.[19] In this perspective, hard technologies represent equipment and machines in which work is integrated; light-hard technologies are the professional knowledge, own knowledge and personal experiences that structure and organize work.[18] Differently, light technologies emphasize the professional and patient relationship, addressing subject-centered listening and the satisfaction of the needs of well-being, care, and health, affecting the care practices and the qualification of health work. They involve speaking, listening, interpreting, welcoming, bonding, representing, new knowledge, among others.[18,19]

In the pandemic, the communication mechanism represented a factor intrinsically related to the interaction processes, of cooperation between the health team involved, to improve the care developed, guaranteeing constitutional rights and integral and universal health services. First, the skills of proper listening to symptoms, screening, and determination of the severity and complexity of suspected cases determined the first line of care measures.[2] Communication, through qualified listening, is a vital health work instrument for interaction and cooperation of the intra-health team, with patients and family. It constitutes a tool to humanize the work processes and insert the subjective factor into the organizational dynamics as a catalyst for changes in health care.[20] It is important to emphasize, however, that the communication built with patients, family, and health team in the face of the pandemic is different.

The fear of infection by COVID-19 and its consequences determined different modes of communication defined by distancing and isolation.[17] Contacts made by telephone or videoconferencing with family members for patients with mild cases were strategies implemented to reduce fear, promote psychological well-being, and humanize care processes. Studies have been developed that emphasize digital tools such as videoconferencing for support during the COVID-19 pandemic.[21,22] A study on treatment for adolescents with eating disorders with family support found in videoconferencing an essential tool during the pandemic, although telehealth remains a challenge in access and resolutions.[22]

The use of digital technologies to reach family members, guide conducts, and improve patient well-being demonstrate a positive role during the pandemic, and investing in this perspective as an allied instrument in health care processes represents improvements in the subjective aspects of health work. Challenges are shown daily in the provision of care during the pandemic period and light technologies are revealed as mechanisms that can resolve difficulties during the development of the work and promote communication and listening aimed at solving problems and achieving interprofessional goals.

The use of communication in the Interprofessional team contributes to dynamic, engaging relationships, with effective and high-quality results. They involve cooperation, collaboration, leadership, and decision-making.[23,24] A study on interprofessional communication in the emergency sector between residents, physicians, and other members of the health team showed barriers to achieving effective communication, such as personal factors (fear, self-confidence), clinical environment (work overload, rapid changes in health teams), and lack of training.[24] In this context, the use of communicative processes to achieve better practices and care, in the interprofessional relationships of the team and in the quality of health care during the pandemic, is an undeniable tool in reporting, although its implementation, development, and qualification still needs improvements in the health system for the sake of better efficacy.[25]

The contributions are found in the identification of health team communication as a resource for improving interprofessional interactions, as well as assistance and care to patients in the pandemic context in emergency care institutions. The experience revealed an excerpt of what is found under the conditions of the current situation resulting from COVID-19. Communication has become an essential tool to maintain professional relationships and culminate in the team's collaboration and cooperation in order to provide a close relationship with the user. In addition, communicative processes such as guided listening to users and intra-team communication contribute to promote the quality of care and health care processes.

The main limitation identified in the report is the specific regional character of the health service and its specificities in the local context, but its results, such as communication to improve the

relationship of the health team, can be replicated in countless contexts in the pandemic, thus becoming its main potential as well.

Nursing as a health profession, with its work processes directly affected by the pandemic, finds in light technologies such as communication and qualified and guided listening, strategies to improve care and relationships established with the health team, family and patient. This can solve risks, dissatisfaction, adverse events and morbidity and mortality of patients with COVID-19 in emergency care services.

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Original article

Anxiety in Relatives of Patients Admitted to Cardiac Care Units and its Relationship with Spiritual Health and Religious Coping

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Anxiety in Relatives of Patients Admitted to Cardiac Care Units and its Relationship with Spiritual Health and Religious Coping

Abstract

Objective. This work sought to determine the level of anxiety in relatives of patients admitted to CCUs and its relationship with spiritual health and religious coping. **Methods.** This cross-sectional study was conducted on 300 relatives of Cardiac Care Units patients in Jahrom, Iran. Required data was collected using the Spielberger State-Trait Anxiety Inventory (STAI), the Paloutzian-Ellison Spiritual Well Being Scale (SWBS), and the Pargament Brief RCOPE questionnaire. **Results.** The results showed that both levels of state and trait anxiety were moderate and the level of total spiritual health was high. Anxiety score had an inverse relationship with spiritual health (r=-0.52) and a direct relationship with negative religious coping score (r=0.25). However, no significant relationship was

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found between total anxiety score and positive religious coping ($p>0.05$). There was a direct relationship between spiritual health and positive religious coping (r=0.19), and an inverse relationship between spiritual health and negative religious coping (r=-0.36). **Conclusion.** According to the findings of the study, it is suggested to paying attention to the reinforcement of spiritual attitudes, beliefs, and religious coping strategies to reduce their anxiety in CCU patients.

Descriptors: family; anxiety; spirituality; adaptation, psychological; coronary care units; cross-sectional studies.

Ansiedad en familiares de pacientes hospitalizados en unidades de cuidados cardíacos y su relación con la salud espiritual y el afrontamiento religioso

Resumen

Objetivo. Este trabajo buscó determinar el nivel de ansiedad en familiares de pacientes ingresados en Unidades de Cuidados Cardíacos -UCC- y su relación con la salud espiritual y el afrontamiento religioso. **Métodos.** Este estudio transversal se llevó a cabo en 300 familiares de pacientes hospitalizados en UCC en Jahrom, Irán. Los datos requeridos se recopilaron utilizando el Inventario de Ansiedad – Estado - Rasgos (STAI) de Spielberger, la Escala de Bienestar Espiritual de Paloutzian-Ellison (SWBS) y el cuestionario RCOPE en versión breve de Pargament. **Resultados.** Los hallazgos mostraron que tanto los niveles de ansiedad del estado como de los rasgos eran moderados y el nivel de salud espiritual total era alto. La puntuación de ansiedad tuvo una relación inversa con la salud espiritual (r=-0.52) y una relación directa con la puntuación de afrontamiento religioso negativo (r=0.25). Sin embargo, no se encontró una relación significativa entre la puntuación total de ansiedad y el afrontamiento religioso positivo ($p>0.05$). Hubo una relación directa entre la salud espiritual y el afrontamiento religioso positivo (r=0.19), y una relación inversa entre la salud espiritual y el afrontamiento religioso negativo (r=-0.36). **Conclusión.** De acuerdo con los hallazgos del estudio, se sugiere prestar atención al refuerzo de

las actitudes espirituales, creencias y estrategias de afrontamiento religiosas para reducir su ansiedad en los pacientes con CCU.

Descriptores: familia; ansiedad; espiritualidad; adaptación psicológica; unidades de cuidados coronarios; estudios transversales.

Ansiedade em familiares de pacientes internados em unidades de cuidados cardiológicos e sua relação com a saúde espiritual e o enfrentamento religioso

Resumo

Objetivo. Este trabalho buscou determinar o nível de ansiedade em familiares de pacientes internados em Unidades de Cuidados Cardíaco - UCC- e sua relação com a saúde espiritual e o enfrentamento religioso. **Métodos.** Este estudo transversal foi realizado em 300 familiares de pacientes internados na UCC em Jahrom, no Irão. Os dados necessários foram coletados usando o Spielberger Trait Anxiety Inventory (STAI), a Escala Paloutzian-Ellison de Bem-estar Espiritual (SWBS) e o questionário RCOPE de Pargament. **Resultados.** Os resultados mostraram que tanto os níveis de ansiedade do estado como os traços eram moderados e o nível geral de saúde espiritual era alto. A pontuação de ansiedade teve uma relação inversa com a saúde espiritual (r=-0.52) e uma relação direta com a pontuação de afrontamento negativo religioso (r=0.25). No entanto, não foi encontrada relação significativa entre a pontuação total de ansiedade e o afrontamento religioso positivo ($p>0.05$). Houve relação direta entre saúde espiritual e enfrentamento religioso positivo (r=0.19), e relação inversa entre saúde espiritual e enfrentamento religioso negativo (r=-0.36). **Conclusão.** De acordo com as descobertas do estudo, sugere-se colocar atenção para o reforço de atitudes espirituais, crenças e estratégias religiosas de enfrentamento para reduzir sua ansiedade em pacientes com CCU.

Descritores: família; ansiedade; espiritualidade; adaptação psicológica; unidades de cuidados coronarianos; estudos transversais.

Introduction

Cardiac disease is the leading global leading cause of death and disability.[1] Coronary artery disease (CAD) is the most common type of heart disease and is more common in older patients.[2] It is expected that disability adjusted life year lost due to cardiovascular-related premature death increase twofold by 2025.[3] Admission to Cardiac Care Units **(**CCU) is viewed as a crisis for both the patients and their family members since they are suddenly pushed into an unknown situation of exposure with a critical disease and its stressful outcomes.[4] Family members of patients often suffering from physical and mental health problems.[5] The stressful critical care unit environment, critically ill patients who need immediate specialized monitoring, high mortality risk, complex technical and medical equipment, permanent monitoring of patients, alarm sounds, and restricted visiting hours are the factors affecting anxiety in relatives of critical care patients.[6] Some studies have shown that anxiety level in family members and first-degree relatives of CCU patients is equal to the anxiety level of the patients themselves.[7]

The prevalence of anxiety varied from 15% to 24% in caregivers after discharge of their patients from the intensive care unit.[8] A significant number of family members of ICU patients experience moderate to severe anxiety.[9] Experts believe that paying attention to spirituality is among the effective factors in reducing anxiety.[10] Spirituality constitutes a dimension of health alongside physical, mental, and social dimensions.[11] Spirituality is characterized by stability in life, peace, and feeling close relationship with himself, God, society, and the environment.[12]

People with higher level of spirituality are more resistant to illness and resilient to stress.[13] Spirituality is an efficient coping mechanism in stressful situations, especially in health-related problems. It controls the mind and gives meaning and hope. It helps people to find coping strategies and have a positive outlook on life after death.[14] The association between spirituality and religion cannot be neglected.[15] Religion can affect the burden and the level of stress and anxiety in caregivers of patients.[16] Researchers have acknowledged that religious coping is effective for enhancing illness adjustment. Religious coping refers to involvement of religious beliefs and attitudes in problem-solving and control of difficult situations by preventing or reducing negative psychological consequences.[6] It is shown that religious and spiritual beliefs play an important role in caregiver adaptation with difficult situation of caring for stroke patients.[17]

Spiritual-religious coping reduced the level of depression, anxiety, and stress in caregivers of children with leukemia.[18] Given the anxiety of relatives of CCU patients, focus of the treatment team on the patient, and negligence of mental

state of caregivers, the present study aimed to determine the level of anxiety and of relatives of CCU patients its association with spiritual health and religious coping.

Methods

This was a descriptive, correlational study. The required data was collected from August 2018 to October 2018. All relatives of patients admitted to CCUs of the hospitals affiliated with the Jahrom University of Medical Sciences (in Iran) were studied. The sample size was calculated as 130 given type I error of 0.05, type II error of 0.2, and correlation of spiritual health with anxiety scores in older patients admitted to CCU ($r = 0.243$) as found in a previous study.[12] The sample size was increased to 300 to recover the possible loss and enhance accuracy of the study. All relatives of CCU patients meeting the inclusion criteria were selected using convenience sampling. Since the number of CCU beds was identical in the hospitals, equal number of samples were selected from two hospitals in Jahrom. Inclusion criteria were willingness to participate in the study, minimum standard of literacy, 24 to 48 hours after admission to CCU, a close family member (spouse, child, father, mother, sister, and brother), and 18-65 years of age. Exclusion criteria were intake of anxiolytic and sedative drugs, history of diagnosis with a cognitive and psychological disorder, and uncompleted questionnaires.

A demographic questionnaire, the Paloutzian-Ellison Spiritual Well-Being Scale (SWBS), the Spielberger State-Trait Anxiety Inventory (STAI), and the Pargament Brief RCOPE questionnaire were used for data collection. It was validated for the local setting. The demographic questionnaire collected data on patients' relatives (age, gender, occupation, education, relationship with the patient, marital status, number of children) and the patient (marital status, number of children, age, gender, occupation, medical diagnosis, date of admission to CCU, date of hospitalization, and medical history. The SWBS contains 20 items and measures two subscales. The odd items measure the religious well-being subscale (experience of a satisfying relationship with God, and the even items measure the existential well-being subscale (a purposeful life and life satisfaction). A six-point Likert scale is used to rate the items ranging from "1 = strongly agree" to "6 = strongly disagree." The negative items are reverse-scored. The scores of religious and existential well-being range from 10 to 60. The higher the score, the greater the religious and existential health. The scores of spiritual well-being range from 20 to 120. The spiritual health is categorized into categories of low level (20-40), moderate level (41-99), and high level (100-120). Balanjani *et al.* calculated Cronbach's alphas of the spiritual well-being scale, religious well-being subscale, and existential well-being subscale as 0.92, 0.86, and 0.87, respectively.[19]

STAI contains two subscales of state anxiety and trait anxiety scoring from 1 to 4 (from very low to very high). The anxiety scores range from 20 to 80; state-trait anxiety scores of 20-31, 32-42, 43-53, 54-64, 65-75, and >75 indicate mild anxiety, moderate to low anxiety, moderate to high anxiety, relatively severe anxiety, severe anxiety, and strongly severe anxiety, respectively. Trait anxiety scale is scored from 1 to 4 (almost never, sometimes, often, and almost always). The Persian version of STAI was used in various studies in Iran. Its content validity and reliability were confirmed through Cronbach's alpha calculation (0.85 to 0.93).[20] The Brief RCOPE questionnaire contains 14 items scoring based on a four-point Likert scale ranging from 1 to 4. Items 1-7 measure positive behaviors and items 8-14 measure negative behaviors. Its subscales are benevolent religious reappraisals, collaborative religious coping, seeking spiritual support, religious purification, and religious forgiveness. Aflakseir and Colman confirmed its validity and assessed its reliability through Cronbach's alpha of 0.86.[21] Data were analyzed in SPSS 22 through descriptive statistics to describe the

studied variables as well as Spearman correlation coefficient and linear regression at the significance level of 0.05.

The project was approved by the Ethics Committee of the Shiraz University of Medical Sciences (Code of Ethics = IR.SUMS.REC.1397.608). The participants were ensured of data confidentiality and the right to leave the project whenever they desired at any phase of the study.

Results

The findings showed that the majority of the patients' relatives were female (63.3%), married (83.3%), housewives (48.7%), in the age range of 31-45 (45%), with a high school diploma (56%), and 1-3 children (52%). The majority of patients were 61-91 years old (50.6%), female (53.3%), married (97.8%), with 4-6 children (37.8%). In addition, 56.1%, 67.8%, and 78.3% of patients had unstable angina, 1-3 hospitalization episodes, and a history of disease, respectively.

The mean scores of total anxiety, state anxiety, and trait anxiety in the relatives were 88.75±16.67, 45.02±10.26, and 43.72±8.35, respectively. Anxiety of relatives was high level. State anxiety was moderate in 71.8% of patients and Trait anxiety was moderate in 77.6% (Table 1). The mean score of total spiritual health was 106.23±13.09. Spiritual health level was high in 76.7% of relatives and moderate in 23.3% of them.

Table 1. Anxiety score of relatives of CCU patients

Anxiety level	% State anxiety	% Trait anxiety
Mild	7	6
Moderate to low	36.3	40.3
Moderate to high	35.3	37.3
Relatively severe	18	15
Severe	3	1.3
Strongly severe	0.3	0

Anxiety score had an inverse relationship with spiritual health and a direct relationship with negative religious coping score (r=0.25). However, no significant relationship was found between total anxiety score and positive religious coping (Table 2).

Table 2. Correlation of Anxiety and its subscales with Spiritual Health and its subscales in relatives of CCU patients

Spiritual health Anxiety	Total	Religious Health	Existential Health	Positive Coping	Negative Coping
Total	r=-0.52*	r=-0.33*	r=-0.55*	r=0.034**	r=0.25*
State Anxiety	r=-0.49*	r=-0.3*	r=-0.52*	r=0.04**	r=0.2*
Trait Anxiety	r=-0.45*	r=-0.29*	r=-0.47*	r=0.04**	r=0.25*

*: $p<0.001$; **$p>0.05$

Spearman correlation test results showed a positive significant relationship between religious coping score and spiritual health in the relatives. The relationship of spiritual health and its subscales (religious and existential well-being) with positive religious coping was also significant and positive. There was also an inverse significant correlation between negative coping score and overall spiritual health score (and its religious and existential subscales). (Table 3)

Table 3. Correlation of religious coping with spiritual health and its subscales in relatives of CCU patients

Score	Positive Coping	Negative Coping
Total Spiritual Health	r=0.19*	r=-0.36*
Religious well-being	r=0.24*	r=-0.42*
Existential well-being	r=0.14*	r=0.31*

*: $p<0.001$

The results of regression analysis showed that one-unit increase in spiritual well-being score decreased anxiety score by 0.69 unit. Since coefficient of determination (R^2) was 0.29, the spiritual health score can explain 29% of changes in relatives' anxiety score. The remaining changes are caused by unknown factors not included in the model. One-unit increase in negative coping score increased anxiety score by 1.26 unit. Since the coefficient of determination (R^2) was 0.1, the negative coping score can explain 10% of changes in anxiety scores of relatives (Table 4).

Table 4. Linear regression analysis to assess the predictor role of spiritual health and religious coping on anxiety of relatives

	Model	Unstandardized coefficient		Beta	t	*p*-value
		B	SE			
Spiritual health as predictor of anxiety in relatives	Constant	162.11	6.64	-	24.4	0.001
	Spiritual Health	-0.69	0.06	-0.54	11.13	0.001
Religious coping as predictor of anxiety in relatives	Constant	64	23.38	-	2.74	0.007
	Positive Coping	0.41	0.84	0.03	0.49	0.62
	Negative Coping	1.26	0.22	0.32	5.74	0.001

Discussion

A family member usually accompanies the patient as he/she is admitted to the CCU. The accompanier acts as a link between the family and the treatment team and they are as important as the patient in terms of paying attention. The results of the present study showed that anxiety score of relatives of patients admitted to CCU was very high. The level of anxiety was moderate to high in more than one-third of the patients' relatives. This result was consistent with the results of the study by Famis *et al.*[22] who showed

that anxiety of the relatives varied from 35% to 45%. Lacerda *et al.*[23] found anxiety in 77% of patients' relatives but Bolosi *et al.*[4] found anxiety in 13.9% of patients, which was lower than the rate of anxiety in the present study.

Relatives of patients admitted to critical care units experience a significant level of anxiety due to various causes such as the stressful environment, risk of death for patients, and negligence of relatives' needs.[6] Most ICU admissions are unplanned and urgent, which contribute to severe anxiety of the family members.[24] Spiritual health of relatives of CCU patients was high in the present study. This result was consistent with the results of the study by Heidari *et al.* on relatives of acute patients.[25] The sense of spirituality controls minds, gives meaning and hope, helps to find efficient strategies and have positive outlook.[19] The results of the present study showed that the mean score of positive religious coping was high and the mean score of negative religious coping was low in relatives of patients. Iran is a religious country that fosters spiritual beliefs, Therefore, patients' relatives rely on their religious beliefs to cope with stressful situations and reinforce religious coping to care for their beloved ones.[10] Similar to the present study, Pearce *et al.* assessed religious coping in caregivers of mentally ill patients and reported high level of religious coping.[26]

However, Tambri *et al.* reported low level of religious coping in caregivers of cancer patients and religious coping was neglected in caring for these patients.[27] Religion helps them to be calm and overcome their problems.[19] Similar to the present study, Hedayati *et al.,*[13] showed that as the scores of spiritual health and its subscales increased, scores of total anxiety, state anxiety, and trait anxiety significantly decreased. Religious beliefs and spirituality help people to cope with stress, give them hope, foster a positive outlook, enhance the inner peace and help them to adopt efficient strategies to cope with stress.[26] Spiritual health and religious practices are viewed as a useful coping approach in the psychology and play an effective role in improving the quality of patient care received from the relatives.[16]The results of the present study found no relationship between positive religious coping and total anxiety score and its subscales (state and trait anxiety) in relatives of patients. However, anxiety of patients' relatives significantly increased as the score of negative coping increased. Negative coping explained 10% of changes in relatives' anxiety scores. Francis *et al.* showed that negative religious coping was associated with symptoms of depression and anxiety in medical students.[28] Chong Guan *et al.* assessed the relationship of religion and religious coping with anxiety and depression. They showed that patients with anxiety and depression were more likely to use negative adjustment and had unorganized religion.[29] Strong relationship between family members in the Iranian society help them to care for their patients in case that one of their family members became ill.[30]

Religious coping help people to endure difficulties and prevent anxiety. Prayers, reciting Quranic verses, or attending religious ceremonies help religious people to be less vulnerable to stressful life events. Health care providers can reinforce spiritual health and religious coping of relatives to improve care services and relieve the stress of disease.[16] Limitations of the study included lack of cooperation of some relatives due to their mental state and physical exhaustion that might affect accuracy of the study.

Conclusion. The findings of the present study indicate a very high level of anxiety and a high level of spiritual well-being and religious coping in relatives of CCU patients. Given the inverse relationship of spiritual well-being score and its subscales with total anxiety score, state anxiety, and trait anxiety, reinforcing religious approaches that rely on religious beliefs and coping and spiritual well-being, as well as using religious and spiritual interventions can be beneficial in reducing the anxiety of relatives of CCU patients.

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Quality of life assessment in chronic wound patients using the Wound-QoL and FLQA-Wk instruments

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Quality of life assessment in chronic wound patients using the Wound-QoL and FLQA-Wk instruments

Abstract

Objective. To evaluate changes in the quality of life of patients with chronic wounds. **Methods.** Quantitative research with a cross-sectional design performed with 100 patients with chronic wounds from a university hospital and a Basic Health Unit in southern Brazil. The mean values of the domains of the instruments *Wound Quality of Life (Wound-QoL) and Freiburg Life Quality Assessment Wound* were compared with sociodemographic variables of age, sex and education. **Results.** The average age of the participants was 60.98 years old; 41% had diabetic ulcers and 83% treated the wounds for more than 24 months. The total quality of life value was below the mean with 37.50/100 with (Wound-QoL) and 44.20/100 with (FLQA-Wk). The variables of gender, and educational level were not correlated with either of the two instruments used to assess the quality

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of life. The age variable was significantly correlated with the satisfaction item of the FLQA-Wk. **Conclusion.** The quality of life of patients with chronic wounds was considered poor. The age variable was correlated with the satisfaction domain, showing that the older the age, the lower the satisfaction. The use of instruments to evaluate the quality of life of patients with chronic wounds may help an effective treatment plan.

Descriptors: wounds and injuries; quality of life; questionnaires; nursing care; leg ulcer; diabetic foot.

Evaluación de la calidad de vida en pacientes con heridas crónicas con los instrumentos Wound-QoL y FLQA-Wk

Resumen

Objetivo. Evaluar cambios en la calidad de vida de pacientes con heridas crónicas. **Métodos.** Investigación cuantitativa con diseño transversal, realizada en 100 pacientes con heridas crónicas de un hospital universitario y una Unidad Básica de Salud en el sur de Brasil. Se compararon las medias de los dominios de los instrumentos *Wound Quality of Life (Wound-QoI) y Freiburg Life Quality Assessment Wound* – Versión heridas (FLQA-Wk), con variables sociodemográficas edad, sexo y educación. **Resultados.** La edad promedio fue de 60.98 años; 51 pacientes eran hombres, 41 tenían úlceras diabéticas y 83 trataron las heridas durante más de 24 meses. La calidad de vida total tuvo valores por debajo de la media 37.50 / 100 con Wound-QoI y 44.20 / 100 con FLQA-Wk. Las variables sexo, nivel educativo no se correlacionaron con ninguno de los dos instrumentos utilizados para evaluar la calidad de vida. La variable edad se correlacionó significativamente con el ítem de satisfacción de la FLQA-Wk. **Conclusión.** La calidad de vida de los pacientes con heridas crónicas se consideró mala. La variable edad se correlacionó con el dominio de satisfacción, lo que muestra que a mayor edad, menor satisfacción. El uso de

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instrumentos para evaluar la calidad de vida de los pacientes con heridas crónicas puede ayudar en la realización de un plan terapéutico eficaz.

Descriptores: heridas y traumatismos; calidad de vida; cuestionarios; atención de enfermería; úlcera de la pierna; pie diabético.

Avaliação da Qualidade de vida em pacientes com feridas crônicas com os instrumentos Wound-QoL e FLQA-Wk

Resumo

Objetivo. Avaliar as alterações na qualidade de vida de pacientes com feridas crônicas. **Métodos.** Pesquisa quantitativa com delineamento transversal, realizada em 100 pacientes com feridas crônicas de um hospital universitário e de uma Unidade Básica de Saúde no sul do Brasil, foram comparadas as médias dos domínios dos instrumentos *Wound Quality of Life (Wound-QoI)* e *Freiburg Life Quality Assessment Wound - Versão Feridas (FLQA-Wk)*, com as variáveis sócio-demográficas idade, sexo e escolaridade. **Resultados.** A média de idade foi de 60.98 anos; 51 pacientes eram do sexo masculino, 41 tinham úlceras diabéticas e 83 tratavam as feridas por mais de 24 meses. A qualidade de vida total teve valores abaixo da média, 37.50/100 com o Wound-QoI e 44.20/100 com o FLQA-Wk. As variáveis sexo, escolaridade não se correlacionaram com nenhum dos dois instrumentos usados para avaliar a qualidade de vida. A variável idade foi correlacionada significativamente com o item satisfação da FLQA-Wk **Conclusão.** A qualidade de vida dos pacientes com feridas crônicas foi considerada ruim. A variável idade se correlacionou com o domínio satisfação, denotando que quanto maior idade, menor é a satisfação. A utilização de instrumentos para avaliação da qualidade de vida de pacientes com feridas crônicas poderá auxiliar na realização de plano terapêutico efetivo.

Descritores: ferimentos e lesões; qualidade de vida; questionários; cuidados de enfermagem; úlcera da perna; pé diabético.

Introduction

Chronic wounds (CW) affect approximately 1 to 2% of the world population.[1] In Brazil, there is a high number of patients with wounds. A review on the theme carried out in the country from 2003 to 2014 showed the prevalence of leg ulcers (40%) followed by diabetic ulcers (33%).[2] There has also been an increasing number of patients with CW, and costs follow the same trend, causing an impact on family budgets and on health systems. In 2014, a total of 22,244 patients diagnosed with diabetes mellitus with procedures related to diabetic foot were hospitalized in Brazil, with a total cost of $ 27.7 and $ 333.5 million dollars for inpatient and outpatient care, respectively (1US dollar = R $ 3.88 reais).[3]

There has been an increase in the appearance of CW and on the financial impact caused by them, and on the other hand, a decrease in the quality of life (QoL) of affected patients. Physical, social and emotional damage such as decreased mobility, pain and discomfort, unpleasant odor and insomnia, tend to limit the performance of daily activities.[4] Social isolation, frustration and other psychological reactions, such as anxiety and depression, are also factors that add to the physical aspects, and cause an impact on the lives of patients.[5] Throughout the therapeutic course, QoL should be measured as an assessment of the treatment and of the evolution of the disease, aiming to minimize the effects that CW cause in the lives of patients.

Among the various definitions of the construct "Quality of life", the one of the World Health Organization Quality of Life Group was used in this study: "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".[6:1] This definition aims to express the extent and multidimensionality of the construct, covering health, social and economic aspects. However, exclusive and reliable tools are necessary for the assessment to encompass the multidimensionality of QoL. Thus, there is a need for instruments to help professionals to obtain accurate information about the patients' conditions so as to develop assertive plans aimed at improving QoL.[7]

Chronic wound patients tend to suffer changes in QoL related either to the physical limitations that the wound may cause or to restrictions in the access to treatment. Age, low schooling, income, and psychological problems are essential variables to be considered when the therapeutic itinerary is planned, due to the limitations that they can cause. The number of elderly people in the Brazilian population is on an upward curve, reflecting a greater incidence of comorbidities as age increases. Schooling, for example, is considered an important factor to be evaluated, because it promotes the patients'

understanding of their disease, facilitating treatment and adherence.[8]

In the context of assessing the QoL of patients with CW, the objective of this research emerges: To assess changes in the QoL of patients with chronic wounds and compare the average values of the domains of the Wound Quality of Life (Wound-QoL) and the Freiburg Life Quality Assessment Wound - Wound Version (FLQA-Wk), with the sociodemographic variables age, sex and education.

Methods

This is a quantitative study with a cross-sectional design carried out in two outpatient clinics, one of a large university hospital (UH) and another of a Basic Health Unit (BHU), characterized as an institution that provides primary care to the population. Both are funded by the government and specialized in wound care, located in a capital in southern Brazil. Data collection was performed in a single moment between December 2017 and April 2018, using three instruments: the first developed by the researchers for collection of information on sociodemographic and clinical characteristics, and the other two were the instruments that measure QoL, the Wound-QoL and FLQA-Wk.

Among the specific instruments used to assess the QoL of patients with CW, the options available for Brazil are the Wound-Qol[9,10] and the FLQA-Wk.[11] Both were developed in Germany, and translated and adapted for Brazil. The Wound-QoL covers 17 items assigned to three subscales: everyday life, body, and psyche. Besides assessing QoL, the Wound-QoL is easy to fill out and of brief application, responded by patients in a simple way, and giving professionals quick way to measure the construct. It has questions on a Likert scale, ranging from 0 to 4, where zero indicates the worse QoL and four the better QoL. The instrument is self-explanatory and must be completed by the patients, but they can receive help if they are not able to complete it on their own, what is documented if happens. Its validation had a Cronbach's Alpha of 0.84 and a criterion validity concurrent with the FLQA-Wk of strong magnitude (0.85), considered a great result and confirming a reliable internal consistency, being satisfactory for the Brazilian culture.[9,10]

The Freiburg Life Quality Assessment-Wound (FLQA-w) scale consists of 24 items. It is a more complete scale, in a Likert format, with a score varying from one (best QoL) to five (worst QoL), with exception of the satisfaction domain. It presents six domains: physical symptoms, daily life, social life, psychological well-being, treatment and satisfaction. The validation study to Brazilian Portuguese showed good psychometric properties.[11]

A non-probabilistic sample of 100 patients with CW who were attending the institutions participated in the study, 92 from the HU and eight from the BHU. Patients were invited to participate in the research when they came for a dressing at the outpatient clinic and met the following inclusion criteria: age equal to or over 18 years, being in consultation for evaluation and dressing of one or more chronic wounds characterized as: wounds that did not heal in 3 months, or that did not show 20 to 40% of healed area after 2 to 4 weeks of treatment. Patients with altered cognitive and mental state reported in the medical records, who did not have conditions of communication to answer the questionnaires, or who had neoplastic CW were excluded (aiming to eliminate the bias of QoL alteration due to cancer diagnosis and symptoms of disease).

Data were analyzed using the Statistica software version 7.0. Sociodemographic and clinical data were descriptively analyzed by simple and absolute frequency. Wound-QoL and FLQA-Wk data were presented in domains with descriptive measures (mean, minimum, maximum and standard deviation) according to the manual scoring of both

instruments. The Student t-test and Mann Whitney test were used for correlations between sex and the means of the Wound-QoL and FLQA-Wk domains. The Student t-test, Mann Whitney test, and ANOVA were used for correlations between schooling and means of the Wound-QoL and FLQA-Wk domains, and the Spearman test was used for the correlation of age with the means of the domains.

The research was approved by the Research Ethics Committee of the Federal University of Paraná on June 14, 2017, with Opinion nº 2,119,702 and by the Municipal Health Secretariat of Curitiba with the nº 88/2016.

Results

The sample consisted of 100 patients, with an average age of 60.98 years and an age range ≥ 60 years to 66. Of the patients, 51 were male, 53 were married, 40 had more than 3 children, and 72 had elementary school. Regarding occupation, 75 were retired, and 55 received 1 to 3 minimum wages (Table 1).

Regarding clinical data, 41 patients had diabetic ulcers and 21 venous ulcers. As for the number of wounds, location and time of treatment, 65 had one wound, the predominant location was the lower limbs in 92 patients, and 83 treated the wounds for more than 24 months. The presence of comorbidities was predominant; 94 had some type of comorbidity, being Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM) the most frequent. Medications were used by 88 patients, the most frequent of which were: antihypertensive, hypoglycemic/antidiabetic, anti-dyslipidemic/cardiovascular. Some patients used more than one medication (Table 2).

When analyzing the QoL of patients with CW with the Wound-Qol instrument, it was observed that the three domains had scores below the average, as well as the global value of 37.50, which denotes a low QoL. When analyzing the QoL with the FLQA-Wk instrument, similar results were found, the total score was below the average (44.20), which corresponds to a poor QoL. With the Wound-Qol, body symptoms were the ones with the lowest average, followed by symptoms of everyday life. When using the FLQA-Wk scale, the lowest averages were found for psychological well-being symptoms, followed by physical symptoms (Table 3).

Table 1. Sociodemographic characteristics of 100 patients with chronic wounds

Variables		*n*
Sex		
	Male	51
	Female	49
Age		
	18 to 30 years	5
	31 to 59 years	29
	≥ 60 years	66
Marital status		
	Married	53
	Not married	13
	Consensual Union	6
	Separated	10
	Widowed	18
Number of children		
	0	11
	1	10
	2 to 3	39
	More than 3	40
Schooling		
	Incomplete Elementary School	66
	Complete Elementary School	6
	Incomplete high school	2
	Complete high school	17
	Complete high school technical course	2
	Complete higher education	6
	Incomplete higher education	1
Family income*		
	Without income	6
	Up to 1 minimum wage	30
	1 to 3 minimum wages	55
	4 to 10 minimum wages	7
	10 to 20 minimum wages	2
Occupation		
	Formal worker	4
	Self-employed	10
	Retired	75
	Housewife	6
	Unemployed	5

* 1 minimum wage in 2018: R $ 954 reais. Note: 1US dollar = R $ 3.88 reais.

Table 2. Clinical characteristics of 100 patients with chronic wounds

Variables	*n*
Type of wound	
Diabetic ulcer	41
Venous ulcer	21
Calluses/ lesions leprosy	12
Osteomyelitis	7
Other wounds*	19
Nº of wounds	
1	65
2	21
≥ 3	14
Wound location	
Lower limbs (leg, thigh and foot)	92
Trunk (dorsal and ventral)	7
Lower limbs (leg / thigh) and	1
Wound Time	
6 to 18 months	14
19 to 23 months	3
≥ 24 months	83
Types of comorbidities †	
Hypertension	62
Diabetes	58
Dyslipidemia	17
Leprosy	14
Heart disease	14
Hypothyroidism	12
Stroke	5
Others	44
Medicines used †	
Antihypertensive drugs	63
Hypoglycemic/antidiabetic	51
Antidyslipidemic/cardiovascular	50
Antidepressants	16
Painkillers	13
Antibiotics	5
Others	44

(*): 3 cases of arterial ulcer, pressure injury, and livedoid vasculitis each, and one case of the following types: cellulitis, surgical ulcer, mycosis for diabetes, leishmaniasis ulcer, trauma, mixed, neurotic excoriation, bullous epidermolysis, suture dehiscence, arthritis and pressure injury; (†): Non-exclusive, the patient may use more than one option.

Table 3. Quality of life scores measured with the Wound-QoI and FLQA-Wk in 100 patients with chronic wounds.

Wound-QoI	Mean	SD	Min.	Max.
Body symptoms	21	20.50	0	80
Physical symptoms	46	30.25	0	100
Everyday life	34.75	27.50	0	100
Global	37.50	20.25	0	83.75
FLQA-Wk				
Physical symptoms	38	17	20	96
Daily life	51.20	21	20	100
Social life	43	23.40	20	100
Psychological well-being	34.20	17.80	20	100
Treatment	48.60	16.20	20	95
Satisfaction	50	18.20	20	93.40
Total	44.20	13	21.60	77.60

When comparing the body symptoms, physical symptoms and everyday life domains of the Wound-QoL and the physical symptoms, daily life, social life, psychological well-being, treatment domains of the FLQA-Wk, there were no significant differences between the variables sex, age and schooling. Age was correlated with the satisfaction item of the FLQA-Wk, with a p-value <0.001, verified with the Spearman's correlation coefficient which obtained a value of 0.308, indicating that the higher the age, the lower the score in the satisfaction domain. It is worth mentioning that this item brings questions related to patients' satisfaction about their general health, treatment and appearance of their wound. Its data were recoded to run the correlations, because they have an opposite presentation in relation to the other domains, that is, 1 indicates worst QoL and 5 best QoL.

Discussion

When a patient has to live with a chronic wound, this health problem can cause changes and obstacles in several aspects in his life and that of his family members. They can be of a physical nature, when they prevent everyday life activities, or of an emotional nature, when they interfere with the patient's way of living in the world. The presence of one or more CW, tend to lead the person to develop negative feelings, triggering a difficulty in interpersonal relationships, impairment of the body image and even of sexual activity, causing an impact that may harm the QoL.[4] Thus, it is up to health professionals to carry out humanized and holistic actions to develop a therapeutic itinerary aimed at the real needs of these patients.

The sociodemographic profile of the population of the present study showed the predominance of males, similar to results of studies carried out in other regions of Brazil,[9] and in Germany.[12] The experience of a patient with CW brings up aspects related to gender and health, such as sexuality and social implications, which trigger restrictions in daily life and in the performance of roles. These issues need to be considered by health professionals in order to improve the mental health care and QoL of these patients.[13]

Other important factors that must be considered for the preparation of the care plan of patients with CW are education and family income. In this study, the predominant level of education was elementary school. This is in line with studies carried out in the central west region of Brazil, where 77.36% of the patients had low schooling,[14] and in the validation study of the FLQA-Wk scale carried out in the southeastern region of Brazil, in which 97% had low schooling.[11] Regarding income, 55% of the patients received 1 to 3 minimum wages, higher than a study carried out in the northeastern region of Brazil, in which 85% of the elderly had low family income.[15]

Both low education and low family income have the potential to interfere in adherence to CW treatment. They can lead to an extension of recovery time and an impact on the patients' QoL. Low schooling may influence the understanding of the guidelines on self-care.[8] Family income, for many patients, is primarily destined to cover the family needs such as food, clothing and education; when the materials and drugs prescribed for the wound are not provided in basic health units or specialty centers, adherence to treatment may be compromised.[16]

Regarding the data related to the QoL of patients with CW evaluated in this study with the instruments Wound-Qol and FLQA-Wk, it was observed that their averages were low in all domains, which denotes a poor QoL. Thus, the appearance of the wound has compromised the lives of the patients. The body symptoms were those that presented the worst average in the Wound-Qol. They are related to pain, odor, secretion of the wound, in addition to sleep and treatment. Similar data were found in a study carried out in Portugal which highlighted that the worsening QoL of patients with leg ulcers is related to pain, altered body image, bad odor, restricted mobility, exudate, negative emotions, sleep disorders, depression and anxiety.[17] These conditions demonstrate how relevant is that health professionals develop strategies related to clinical factors. The assessment of the lesion and the provision of appropriate treatment may reduce the impact of CW on these patients.[18]

Another domain compromised in the assessment of QoL was everyday life activities. They include difficulties in daily life such as climbing stairs, leisure activities and dependence on help from other people. In the FLQA-Wk, the lowest score was found for symptoms of psychological well-being, related to feelings towards the wound, such as: depression, tiredness and feeling of abandonment. Two studies carried out in the northeastern region of Brazil, one with the objective of evaluating the QoL of patients with venous ulcers[19] and the other with the objective of evaluating the QoL of patients with CW,[18] both using the Charing Cross Venous Ulcer Questionnaire, highlighted that the emotional and aesthetic domains had poor averages, associated with domestic activities and social interaction, and that the "well-being" domain had the lowest QoL score. Although the studies did not use a specific instrument to assess QoL, the results corroborate with the present study, detecting changes caused by CW in patients' routine, and a consequent decline in QoL.

The presence of CW causes patients who were previously active to experience reduced work, social and daily life activities. The wound often requires patients to remain at rest for some periods of the day, so that these people start to isolate themselves and stop participating in their social cycles. Pain limits mobility and restricts domestic activities. The odor that can be exhaled can cause shame and lead family and friends to stay away.[4] These aspects show the extent to which the patients' holistic assessment is pertinent and the extent of the impact on their QoL.

To survey the QoL of patients with CW and the costs involved were the objectives of a study conducted in Australia and Wales with data collected using the Cardiff Wound Impact Schedule (CWIS) questionnaire. The results showed that the global

QoL and satisfaction scores were below ideal (60/100), physical symptoms and daily life scores were reasonable (64/100), and social life scores were higher (72/100), and well-being scores lower (40/100). Furthermore, younger participants reported worse QoL in all subscales of the CWIS when compared to older participants.[20] Another study conducted in Nigeria that assessed the QoL of patients with CW through from the World Health Organization-5 Well-being Index, 12-item General Health Questionnaire, 58% of the patients reported having adequate well-being and 41% were prone to depression and low mood. In addition, 32% suffered from anxiety and 15% from depression.[21]

Regarding the correlation of sociodemographic data with the domains of the Wound-QoL and FLQA-Wk, this research showed that there was no significant correlation between the domains and the variables education and sex. A study carried out in the central-western region of Brazil whose objective was to assess the QoL of patients with CW, using the WHOQOL-Bref questionnaire developed by the World Health Organization (WHO), did not show significant differences in relation to sex, concluding that this is a variable that does not influence the QoL of the evaluated patients. Another study carried out in the northeastern region of Brazil using the Ferrans & Powers Quality of Life Index - Wounded Version (IQVFP-VF), showed a correlation between the sex variable and the General QoL Index ($p=0.04$).[22]

In studies carried out in Brazil and in other places in the world, it is a consensus that QoL is related to the perception of each individual. therefore, it can be represented in different ways in each researched region. Perceptions of worse QoL may be related to worse living conditions, which do not favor health care, availability of sanitation, housing categories, low income, education and social relationships, as well as psychological problems. All of these aspects can compromise QoL in any abnormal health condition.

This study presented as a limitation a sample with visual difficulties, with difficulty to read, perhaps due to low education and income. A professional was available to assist in the reading of the instruments.

Conclusion. It is concluded that the QoL of patients with CW assessed in this study using the instruments Wound-Qol and FLQA-Wk was poor. Both instruments showed scores below the average. The variables sex, age and education did not affect QoL. This indicates that multiprofessional teams need to develop actions aimed at individual as a whole, in order to provide an appropriate treatment and a possible improvement in the patients' CW. However, the use of instruments for measurement of QoL in patients with chronic wounds is essential to assess, plan and structure a nursing care plan to optimize standardized procedures in the treatment of injuries.

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Assessment of the Relationship between Nurses' Perception of Ethical Climate and Job Burnout in Intensive Care Units

Original article

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Assessment of the Relationship between Nurses' Perception of Ethical Climate and Job Burnout in Intensive Care Units

Objective. To determine the relationship between ethical climate and burnout in nurses working in Intensive Care Units (ICUs). **Methods.** This cross-sectional and multi-center study was conducted among 212 nurses working in adult ICUs of six hospitals affiliated to Shiraz University of Medical Sciences, Iran in 2019. The participants were selected using systematic random sampling technique. Data was collected using valid instruments of Olson's Hospital Ethical Climate Survey (HECS) and Maslach Burnout Inventory (MBI). **Results.** Ethical climate was favorable (3.5±0.6). The intensity (32.2±12.4) and frequency (25.5±12.4) of burnout were high. Ethical climate had significant and inverse relationships with frequency of burnout (r =-0.23, p=0.001) and with intensity of burnout (r=-0.186, p=0.007). Ethical climate explained 5.9% of burnout. Statistically significant

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relationships were also found between these factors: age with ethical climate (p=0.001), work shifts with burnout (p=0.02), and gender and with intensity frequency of burnout in ICU nurses (p=0.038). The results of Spearman correlation coefficient showed significant and inverse relationships between ethical climate and job burnout (r=-0.243, p<0.001). **Conclusion.** Nurses in ICUs perceived that ethical climate was favorable however, burnout was high. Therefore, burnout can be affected by many factors and it is necessary to support ICU nurses since they undertake difficult and complicated task. It is recommended to assess factors that increase burnout and adopt specific measures and approaches to relieve nursing burnout.

Descriptors: burnout, professional; intensive care units; nurses; ethics, nursing.

Evaluación de la relación entre la percepción de las enfermeras sobre el clima ético y el agotamiento laboral en las Unidades de Cuidados Intensivos

Objetivo. Determinar la percepción de las enfermeras sobre el clima ético y el agotamiento laboral en las Unidades de Cuidados Intensivos (UCI). **Métodos.** Este estudio de corte transversal y multicéntrico se realizó con 212 enfermeros que trabajaban en UCI para adultos de seis hospitales afiliados a la Universidad de Ciencias Médicas de Shiraz, Irán, en 2019. Los participantes se seleccionaron mediante una técnica de muestreo aleatorio sistemático. Los datos se recolectaron a partir de la utilización de instrumentos Encuesta de Clima Ético en Hospitales (HECS) de Olson y el Inventario de Burnout de Maslach (MBI). **Resultados.** El clima ético fue favorable (3.5±0.6). La intensidad (32.2±12,4) y la frecuencia (25.5±12.4) del agotamiento fueron altas. El clima ético tuvo relaciones significativas e inversas con la frecuencia de Burnout (r=-0.23, p=0.001) y con la intensidad del burnout (r=-0.186, p=0.007). El clima ético explica el 5.9% del agotamiento. También se encontraron relaciones estadísticamente significativas entre edad y clima ético (p=0.001), turnos de trabajo y burnout (p=0.02), además de género y frecuencia de intensidad de burnout (p=0.038). El coeficiente de correlación de Spearman mostró relaciones significativas e inversas entre el clima ético y el agotamiento laboral (r=-0.243, p<0.001). **Conclusión.** Las enfermeras en las UCI percibieron que el clima ético era favorable, sin embargo, el desgaste fue alto. Por tanto, el burnout puede verse influido por muchos factores y es necesario apoyar a estas

enfermeras que cumplen una tarea difícil y complicada. Se recomienda evaluar los factores que aumentan el agotamiento y adoptar medidas y enfoques específicos para aliviar el burnout de enfermería.

Descriptores: agotamiento profesional; unidades de cuidados intensivos enfermeras y enfermeros; ética en enfermería.

Avaliação da relação entre a percepção das enfermeiras sobre o clima ético e o desgaste no trabalho em Unidade de Terapia Intensiva

Objetivo. Verificar a diferença entre a percepção dos enfermeiros sobre o clima ético e o desgaste no trabalho em Unidade de Terapia Intensiva (UTI). **Métodos.** Este estudo transversal e multicêntrico foi realizado com 212 enfermeiras que trabalham na UTI adulto de seis hospitais afiliados à Universidade de Ciências Médicas de Shiraz, Irão, em 2019. Os participantes foram selecionados por meio de uma técnica de amostragem aleatória sistemática. Os dados foram coletados usando os instrumentos Enquete de Clima Ético em Hospitais (HECS) de Olson e o Inventário Burnout de Maslach (MBI). **Resultados.** O clima ético era favorável (3.5±0.6). A intensidade (32.2±12.4) e a frequência (25.5±12.4) de exaustão foram altas. O clima ético teve relações significativas e inversas com a frequência de Burnout (r=-0.23, p=0.001) e com a intensidade de Burnout (r=-0.186, p=0.3007). O clima ético explica 5,9% do esgotamento. Também foram encontradas relações estatisticamente significativas entre: idade e clima ético (p=0.001), turnos de trabalho e Burnout (p=0.02), além de gênero e frequência da intensidade do Burnout (p=0.038). O coeficiente de correlação de Spearman mostrou relações significativas e inversas entre clima ético e Burnout (r=-0.243, p<0.001). **Conclusão.** As enfermeiras das UTIs perceberam que o clima ético era favorável, porém, o desgaste foi alto. Portanto, o Burnout pode ser influenciado por diversos fatores e é necessário apoiar essas enfermeiras que cumprem uma tarefa difícil e complicada. Recomenda-se avaliar os fatores que aumentam o Burnout e adotar medidas e abordagens específicas para aliviar o Burnout da enfermagem.

Descritores: esgotamento profissional; unidades de terapia intensiva; enfermeiras e enfermeiros; ética em enfermagem.

Introduction

Intensive Care Unit (ICU) is one of the most critical and complicated hospital wards where nurses undertake difficult tasks and duties.[1] An increase in the number of ICU patients worldwide poses numerous challenges to the healthcare system including ICU nursing staff retention, heavy workload, and declined health.[2] ICU is characterized by a high level of work –associated stress, which is a factor to increase the risk of burnout.[3] Burnout is a syndrome characterized by emotional exhaustion that results in depersonalization and decreased personal accomplishment at work.[4] Negative physical and psychological consequences of job burnout lead to lower efficiency and reduced staying at work[5] and is strongly associated with increased nurse turnover.[6] Burnout is considered a threat to patient safety because depersonalization may result in poorer interaction with patients. In addition, lack of motivation and impaired cognitive function as a consequence of burnout can hurt patient safety.[4] Nursing practice environment characteristics including resource inadequacy, poor inter-professional collaboration, and lack of supportive management are associated with nurses' job burnout.[7] The prevalence of burnout is estimated to range from 10%-70% among nurses and 64% of Chinese nurses experienced job burnout.[4] In Iran, the overall prevalence of nursing burnout has been reported to be 25%.[8]

Favorable workplace climate and interpersonal relationships help to reduce stress and burnout of nurses in an effective manner.[9] Ethical climate refers to the shared perceptions of ethically correct behaviors and way of handling ethically deviated behaviors.[10] Ethical climate is also described as the perception of an atmosphere that increases ethical thoughts, mutual respect and trust in the organization and allows for questioning, discussion, and expression of different views. Positive climate in hospitals may decrease feelings of loneliness and it has a positive impact on productivity and patient satisfaction.[11] Therefore, unfavorable ethical climate might affect how nurses undertake their tasks in ICUs, undermine their performance, alter their behavior and beliefs, and force them to quit their jobs.[10] A positive ethical climate improves the job satisfaction, decreasing turnover and nursing shortages.[12] Therefore, an understanding of the ethical climate, nursing burnout, and nurses' perception in the workplace help both policy makers and nurse managers to identify and implement effective mechanisms to change, promote, and control the ethical climate. It also paves the way to improve nursing professional performance and affects caring services and nursing profession. Given the importance of these factors and the limited studies in the ICUs, the present study aimed to determine the relationship between ethical climate and burnout in nurses working in ICUs of the hospitals affiliated to Shiraz University of Medical Sciences, Shiraz, Iran.

Methods

This was a descriptive, cross-sectional, and multi-center study conducted in 2019. The study population consisted of nurses working in 20 adult ICUs of the six teaching hospitals affiliated to Shiraz University of Medical Sciences, Shiraz, Iran from 2018 to 2019. The sample size was calculated as 193 using Cochran formula by taking into account type I error = 0.05, type II error = 0.2 and the correlation between job burnout and ethical climate score found in previous studies.[13] Given the probable sample loss as 10%, 212 questionnaires were distributed among the participants to improve data accuracy. The participants were selected using Systematic Random Sampling technique. A list of nurses working in the studied hospitals was prepared and the participants were selected from the list in a systematic manner. The inclusion criteria were willing to participate in the study, having at least a bachelor's degree in nursing, and at least one-year work experience in ICU. Exclusion criteria were incomplete questionnaires.

Measures. The data were collected, using a demographic questionnaire, Olson's Hospital Ethical Climate Survey (HECS), and Maslach Burnout Inventory (MBI). Demographic questionnaire collected data on gender, age, marital status, hospital ward, and work experience in the hospital, work experience in ICUs, type of employment, work shift, and level of education.

Olson's Hospital Ethical Climate Survey (HECS). The HECS was originally developed in the USA by Olson to measure hospital nurses' perceptions of the ethical climate in their workplace and it was found to have good validation (Cronbach's alpha: 0.91). The HECS consisted of 26 items in five dimensions of colleagues (4 items), patients (4 items), managers (6 items), physicians (6 items), and hospital (6 items). The items were scored based on a five-point Likert scale ranging from five (Always) to one (Almost never). The total score of the HECS was obtained by calculating the sum of the item scores. The minimum and maximum scores of the HECS range from 26 to 130. Higher scores indicate a positive ethical climate.[14]

An Iranian version of the HECS was used in this study. The Persian version of HECS was translated using forward-backward method and validated by Rivaz et al. (2019). Construct validity of the scale was assessed using exploratory factor analysis. Principal component analysis provided evidence for factorial validity. Internal consistency using Cronbach's alpha was 0.86 for the total scale and the Cronbach's alphas for the domains were between 0.63 and 0.92. The stability of the HECS using intra-class correlation coefficient (ICC) was 0.83.[12]

Maslach Burnout Inventory (MBI). MBI was developed by Maslach et al. in 1985 for measuring the burnout in a variety of occupations, including nursing and medical personnel. It consisted of 22 items and 3 dimensions of emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). The items were scored on a 7-point Likert scale ranging from 0 (Never) to 6 (Every day). A total score was calculated for each domain of the MBI. Whereas the scores of emotional exhaustion were ≤17, 18-29 and ≥30 indicated low, average, and high level of burnout. In depersonalization dimension, the scores of ≤5, 6-11 and ≥12 suggest low, average, and severe burnout, respectively. In personal accomplishment dimension, the scores of ≥40, 34-39 and ≤33 reflect low, average, and severe burnout, respectively. According to Maslach and Jackson, the reliability of the MBI range between 0.71 and 0.92.[15] In Iran, several studies have confirmed the validity and reliability of this instrument. Rivaz *et al.* reported Cronbach's alpha of 0.95 for the whole questionnaire. Construct validity was established using confirmatory factor analysis (CFA). The result confirmed adequate construct validity of the MBI.[7]

Ethical considerations. The study was approved by the Research Ethics Committee of Shiraz

University of Medical Sciences (No: IR.SUMS.REC.1397.219). All participants were fully informed about the aim of the study. Written informed consents were obtained from nurses regarding the voluntary nature of their participation. They were also ensured of data confidentiality.

Data Analysis. The data was analyzed using SPSS v. 21. Descriptive analysis statistics were used to describe the variables. Kolmogorov-Smirnov test was used to assess data normality. Bivariate Pearson correlation coefficients (r) were calculated to assess the relationship between ethical climate and job burnout. Mann-Whitney test, Kruskal-Wallis test, and Univariate linear regression were used to assess the relationship between demographic variables, ethical climate, and job burnout. The level of significance was considered <0.05.

Results

The findings showed that the majority of ICU nurses were females (65.6%), categorized in the 25-35 age group (62.3%), worked in ICUs of internal diseases (38.2%), and had one to ten years of work experience (78.8%). The findings also showed that 70.8% of the nurses had an experience of working in the ICU, and that 52.8% of them were single, and 98.1% of them had bachelor's degrees in nursing.

The results showed that the total mean score of ethical climate was favorable (3.51± 0.583). Mean scores of physician and hospital dimensions were relatively favorable, and mean scores of manager, colleagues, and patients–dimensions were favorable (Table 1).

Table 1. Mean scores of ethical climate and its dimensions

Dimensions	Mean±SD
Manager	3.75±0.92
Physician	3.14±0.85
Hospital	3.10±0.84
Colleagues	3.93±0.72
Patients	3.94±0.65
Total score of HECS	3.51±0.58

The results showed that the mean scores of burnout intensity (32.23±12.36) and that of burnout frequency (25.54±12.36) were high and scores of job burnout dimensions including emotional exhaustion, depersonalization, and personal accomplishment were in low level (Table 2).

Table 2. Level of burnout intensity and frequency

Dimensions of burnout	Mean±SD	Level	
		Category	Frequency (%)
Frequency of emotional exhaustion	21.92±12.06	≤17	95 (45)
		18-29	59 (28)
		≥30	57 (27)
Intensity of emotional exhaustion	24.87±12.85	≤25	114 (54.8)
		26-39	64 (30.8)
		≥40	30 (14.4)
Frequency of depersonalization	7.41±5.38	≤33	137 (65.62)
		34-39	35 (16.7)
		≥40	38 (18.1)
Intensity of depersonalization	9.06±6.97	≤36	120 (57.4)
		37-43	51 (24.4)
		≥43	38 (18.2)
Frequency of personal accomplishment	29.71±9.45	≤5	89 (42.4)
		6-11	75 (35.7)
		≥12	46 (21.9)
Intensity of personal accomplishment	32.56±11.64	≤6	92 (44)
		7-14	76 (36.4)
		≥15	41 (19.6)
Total score of burnout frequency	25.54±12.36		
Total score of burnout intensity	32.23±12.36		

Kolmogorov-Smirnov test results showed that ethical climate, burnout frequency, and burnout intensity variables did not follow normal distribution (p-value <0.05).

The results of Spearman correlation coefficient showed significant and inverse relationships between ethical climate and job burnout (r =-0.243, p-value = 0.001). In addition, there were significant and inverse relationships between the total score of burnout frequency and the dimensions of ethical climate (manager and hospital). In addition, there were significant and inverse relationships between the total score of burnout intensity and the dimensions of ethical climate (manager, Physician, and Colleagues) (Table 3)

Table 3. Relationships between ethical climate and job burnout

Dimensions	Manager	Physician	Hospital	Colleagues	Patients	Ethical climate
Frequency of emotional exhaustion	r=-0.207 p=0.003	r=-0.185 p=0.007	r=-0.125 p=0.071	r=-0.178 p=0.010	r=-0.169 p=0.014	r=-0.238 p=0.001
Intensity of emotional exhaustion	r=-0.133 p=0.056	r=-0.145 p=0.037	r=-0.015 p=0.828	r=-0.135 p=0.052	r=-0.094 p=0.177	r=-0.116 p=0.094
Frequency of depersonalization	r=-0.046 p=0.521	r=-0.045 p=0.721	r=-0.179 p=0.009	r=-0.023 p=0.741	r=-0.052 p=0.454	r=-0.094 p=0.173
Intensity of depersonalization	r=-0.001 p=0.801	r=-0.055 p=0.428	r=-0.145 p=0.036	r=-0.030 p=0.661	r=-0.004 p=0.859	r=-0.083 p=0.231
Frequency of personal failure	r=-0.208 p=0.003	r=-0.030 p=0.668	r=-0.047 p=0.503	r=-0.122 p=0.078	r=-0.140 p=0.043	r=-0.140 p=0.042
Intensity of personal failure	r=-0.192 p=0.005	r=-0.089 p=0.202	r=-0.057 p=0.410	r=-0.161 p=0.020	r=-0.132 p=0.058	r=-0.158 p=0.022
Total score of job burnout frequency	r=-0.218 p=0.001	r=-0.127 p=0.065	r=-0.176 p=0.010	r=-0.137 p=0.047	r=-0.110 p=0.111	r=-0.235 p=0.001
Total score of job burnout intensity	r=-0.179 p=0.010	r=-0.155 p=0.025	r=-0.122 p=0.079	r=-0.161 p=0.020	r=-0.093 p=0.180	r=-0.186 p=0.007

Beta regression model showed that ethical climate explained 5.9% of the changes in burnout in nurses. Beta regression coefficient also showed that ethical climate predicted of burnout in nurses. The more favorable the ethical climate, the lower the burnout (Table 4).

Table 4. Predicting severity and frequency of job burnout by ethical climate

Variables	R^2	F-Statistic	F-p-value	B	β	t-Statistic	p-value
Ethical climate and job burnout from nurses' perspectives	0.059	13.211	0.001	-7.76	-0.243	-3.635	0.001

The results showed a statistically significant relationship between age and ethical climate in nurses (p-value = 0.001). The highest mean score of ethical climate was reported in the 25-35 age group. Statistically significant relationships were also found between these factors: work shifts with burnout (p=0.02), and gender with intensity frequency of burnout in ICU nurses (p =0.038). The highest mean of burnout in nurses was calculated in women with rotating shifts. The relationships between other demographic variables and ethical climate and burnout were not statistically significant (p-value>0.05).

Discussion

The present study aimed to determine the relationship between ethical climate and job burnout in nurses working in ICUs of the hospitals affiliated to Shiraz University of Medical Sciences. The results showed that ethical climate was favorable. Also, the intensity and frequency of burnout were high. Although the ethical climate and the behaviors expected from the nurses were desirable, the level of job burnout was high. It seems that job burnout can be affected by many factors and that it can be a multifactorial variable. Characteristics of ICUs such as caring of critical patients, inadequate safety principles, inappropriate environment (artificial lighting, loud noise, and alarm systems), variation of procedures (suctioning, LOC scoring, ICP monitoring, hourly recording), heavy workload, improper nurse-patient ratio, and lack of competent and trained nurses might be involved in job burnout of nurses in ICUs. In line with our study, Barimani *et al.* concluded that ethical climate was favorable.[16] In other studies, nurses also believed that ethical climate in their hospital was above average [11] and moderate. [17]. On the contrary, the studies that were carried out in Turkey[18] and the United States[19] reported unfavorable ethical climate and high levels of moral distress. These confounding results might be due to inadequate communication between the ICU teams. The study carried out in the UK showed that spending more time at the patient bedside and less involvement in clinical decisions raise ethical concerns for the nurses.[20]

According to our results, the intensity and frequency of burnout were high. In line with our study, the mean scores of burnout were high in social welfare centers in Greece [21] and in ICU nurses in Spain.[22] However, the level of burnout was moderate in the study on the nurses working in a hospital in Turkey.[23] The results of the present study showed that nurses in 25-35 age group gained the highest ethical climate score. The relationship between sex and work shift and burnout was also significant. The highest burnout score was reported in women and with rotating shifts. This is reasonable since the majority of nurses were categorized in the 25-35 age group and had rotating shifts in this study. The ethical climate score decreased as age of nurses increased in social welfare centers in Greece [21] and in a hospital in the US.[24] Meltzer[24] and Huckabay and Losa *et al.*[25] found out a higher burnout level in nurses with rotating shifts compared to fixed shifts. This is because rotating shifts might decrease patient satisfaction and reduce personal accomplishment of nurses.

The results of the present study showed that burnout decreased as ethical climate became more favorable. A study on ICU nurses with master degrees in Poland showed a decrease in job burnout in favorable ethical climate.[26] However, Elçi *et al.* (2015) found out that ethical climate had no effect on job burnout in financial services workers. [27] Mulki *et al*.[10] and Minamizono *et al.*[28] found out that ethical climate affects the intention to leave, and a positive significant relationship was found between nurse's hospital climate perception and their moral sensitivity[11] and performance.[29] Unfavorable ethical climate seems to increase job dissatisfaction, stress, burnout, and intentions to leave the job followed by reduced quality of caring services and prolonged hospitalization.

Conclusion. The findings of the present study showed favorable ethical climate in perception of nurses working in ICUs. Therefore, it is recommended to improve nursing professional performance and patient safety in ICUs by creating and maintaining a favorable ethical climate in the hospital. Despite the favorable ethical climate, burnout was high in this study. Therefore, burnout can be affected by many factors and it is necessary to support ICU nurses since they undertake difficult and complicated tasks. Nursing burnout increases as ethical climate becomes unfavorable followed by declined quality of patient care. Therefore, it is suggested that managers pave the way to make effective plans for the enhancement of ethical

climate in the hospital. They should also assess the factors that increase the rate of burnout in ICU nurses and adopt specific measures and approaches to relieve nursing burnout. Furthermore, nursing managers should adopt effective measures to optimize the workplace and enhance professional ethics through job-related and comprehensive life skills training programs to improve nurses' job satisfaction and quality of patient care.

Limitations of the study. Nurses who complete the questionnaires were tired and impatient after long hour shifts. They were not in desirable physical and mental condition. These factors influenced the accuracy of responses to the questionnaires that could not be controlled by the researcher.

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Level and Noise Sources in the Neonatal Intensive Care Unit of a Reference Hospital

Original article

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Level and Noise Sources in the Neonatal Intensive Care Unit of a Reference Hospital

Abstract

Objective. Determine the level of environmental and periauricular noise in preterm babies and identify the sources generating noise in the Neonatal Intensive Care Unit -NICU- of a reference hospital in San Luis Potosí, Mexico. **Methods.** Cross-sectional and analytic study of the measurement of the level of environmental noise in five critical areas of the NICU, according with the method of measurement of noise from fixed sources by the Mexican Official Norm and periauricular at 20 cm from the preterm patient's pinna. The measurements were carried out during three representative days of a week, morning, evening and nocturnal shifts. A STEREN 400 sound level meter was used with 30 to 130 dB range of measurement and a rate of 0.5 s. **Results.** The average level of periauricular noise (64.5±1.91dB) was higher than the environmental noise (63.3±1.74 dB) during the

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days and shifts evaluated. The principal noise sources were activities carried out by the staff, like the nursing change of shift and conversations by the staff, which raised the level continuously or intermittently, operation of vital support equipment (alarms) and incidences (clashing of baby bottles and moving furnishings) produced sudden rises of noise. **Conclusions.** Environmental and periauricular noise in NICU exceeds by two and almost three times the 45 dB during the day and 35 dB at night from the norm in hospitals. It is necessary to implement permanent noise reduction programs to prevent sequelae in the preterm infant and professional burnout in the nursing staff

Descriptors: intensive care units, neonatal; infant, premature; noise measurement; interior design and furnishings.

Nivel y fuentes de ruido en la Unidad de Cuidado Intensivo Neonatal de un hospital de referencia

Resumen

Objetivo. Determinar el nivel de ruido ambiental y periauricular en prematuros e identificar las fuentes generadoras de ruido en la Unidad de Cuidados Intensivos Neonatales -UCIN- de un hospital de referencia de San Luis Potosí, México. **Métodos.** Estudio transversal y analítico de la medición del nivel de ruido ambiental en cinco áreas críticas de la UCIN de acuerdo al método de medición de ruido de fuentes fijas de la Norma Oficial Mexicana y periauricular a 20 cm del pabellón auricular del prematuro. Las mensuraciones se realizaron en tres días representativos de una semana, turnos matutino, vespertino y nocturno. Se utilizó un sonómetro STEREN 400 con rango de medición de 30 a 130 dB y una frecuencia de 0.5 s. **Resultados.** El promedio del nivel de ruido periauricular (64.5±1.91dB) fue mayor que el ambiental (63.3±1.74 dB) en los días y turnos evaluados. Las principales fuentes de ruido fueron las actividades realizadas por el personal como entrega de turno de enfermería y conversación del personal que elevó el nivel de manera continua o intermitente, el funcionamiento del equipo de soporte vital (alarmas) e incidencias (choque de biberones y mover mobiliario) produjeron elevaciones súbitas de ruido. **Conclusiones.** El ruido ambiental y periauricular en UCIN sobrepasa al doble y casi

al triple los 45 dB en el día y 35 dB por la noche de la normativa en hospitales. Es necesario implementar programas permanentes de reducción de ruido para prevenir secuelas en el prematuro y desgaste profesional en el personal de enfermería.

Descriptores: unidades de cuidado intensivo neonatal; recién nacido prematuro; medición del ruido; diseño interior y mobiliario.

Nível e fontes de ruído na Unidade de Tratamento Intensivo Neonatal de um hospital de referência

Resumo

Objetivo. Determinar o nível de ruído ambiental e periatrial em bebês prematuros e identificar as fontes geradoras de ruído na Unidade de Terapia Intensiva Neonatal -UTIN- de um hospital de referência em San Luis Potosí, México. **Métodos.** Estudo transversal e analítico da medição do nível de ruído ambiental em cinco áreas críticas da UTIN de acordo com o método de medição de ruído de fontes fixas do Padrão Oficial Mexicano e periauricular a 20 cm da orelha do prematuro. As medições foram realizadas em três dias representativos da semana, turnos matutinos, vespertino e noturno. Foi utilizado um medidor de nível de som STEREN 400 com faixa de medição de 30 a 130 dB e frequência de 0.5 s. **Resultados.** O nível médio de ruído periatrial (64.5±1.91 dB) foi superior ao ruído ambiente (63.3±1.74 dB) nos dias e turnos avaliados. As principais fontes de ruído foram as atividades realizadas pela equipe, como entrega do plantão de enfermagem e conversas com a equipe que aumentavam o nível de forma contínua ou intermitente, o funcionamento do equipamento de suporte de vida (alarmes) e incidentes (choque de mamadeira e movimentação de móveis) produziu picos repentinos de ruído. **Conclusões.** O ruído ambiental e periatrial na UTIN é mais do que o dobro e quase o triplo dos 45 dB diurnos e 35 dB noturnos dos regulamentos dos hospitais. Faz-se necessária a implantação de programas permanentes de redução de ruído para prevenir sequelas em prematuros e esgotamento profissional na equipe de enfermagem.

Descritores: unidades de terapia intensiva neonatal; recém-nascido prematuro; medição de ruído; decoração de interiores e mobiliário.

Introduction

Preterm birth is a global public health problem; it is estimated that approximately 15-million preterm neonates are born annually, which translates into a little more than one for every ten children, a number on the increase.[1] In 2018 in Mexico, 2,162,535 children were born and 48,145 in the state of San Luis Potosí,[2] approximately between 5% and 18% corresponded to preterm births.[1] Specifically, in the reference hospital of the present study, a prematurity prevalence of 11.9% was reported from the retrospective analysis of 5,462 births from October 2014 to September 2015.[3] Prematurity in many cases makes hospitalization necessary for prolonged periods in the neonatal unit (NU), given that the preterm child has problems with feeding, temperature regulation, as well as respiratory and infectious problems [3] and are administered specialized treatments due to the clinical situation and support for pulmonary maturation, as well as treatments with aminoglycoside antibiotics, conditions that prolong the hospital stay and which consequently overexpose them to different harmful stimuli for their hearing development, especially due to noise levels > 45 dB, which is the limit recommended by the American Academy of Pediatrics (AAP).[4] Association has been observed between exposure to noise ≥ 60 dB with the effect of ototoxic agents, like aminoglycosides that can damage the ciliated cells of the ear and cause repetitive toxic reactions in the structures of the internal ear due to mechanisms of mutations in the mitochondrial deoxyribonucleic acid.[5]

Hearing deficit in neonates is between 0.1% and 0.6%, in those discharged from the Neonatal Intensive Care Unit (NICU) between 2% and 4%, and for preterm births it can have a prevalence up to 10%.[6] Exposure to noise at high levels produces physiological disorders, like high blood pressure, apnea, or bradycardia, and implies increased oxygen consumption with alterations in saturation, which increases the probability of new episodes of apnea, bradycardia, and diminished amount of calories available for the child's growth. Sleep disorders can occur due to its discontinuity, especially in preterm patients, which is contrary to the intrauterine environment in which they remained asleep 80% of the time. The fetus perceives and reacts to low-frequency sound, processes the tone and intensity of the human voice in protected manner, which ensures optimal development of the peripheral auditory system and of the neocortical and cochlear relationship, lower gestational age indicates greater compromise of cerebral and sensory development of the preterm neonate, given the neonate's difficulty to select information from sound received and their inhibitory controls are more susceptible to the effects of the environment, not being able to distinguish the maternal voice from other female voices, which can affect their emotional development.[4,7,8]

The premature patients in the NICU are subjected to stress due to high-intensity sounds derived from equipment and staff (alarms, ventilators,

telephones, and conversation) and other intense noises of short duration and at irregular intervals, which is why it is crucial to maintain a stable physiological state especially during this critical period for neurodevelopment.[7,8] Studies on noise levels in the NU have applied environmental measurements, as is the case of the hospital in the present study that, according with the measurements carried out in 1996 in six areas (the NICU was not included) and in four different schedules for three minutes during seven days; noise levels > 59 dB were observed, the critical moments of noise were at 07:00 h during change of shift and at 11:00 h, time of maximum activity in the pediatric ward, adult ICU and hallways, where the noise exceeded 70 and 80 dB.[9]

A study evaluating the modifications of noise level in the NICU in two wards (A and B) before and after the "quiet hour" showed that prior to the intervention in both wards, noise exceeded 70 dB and after the quiet hour the noise level dropped close to 20 dB in both wards; although the authors express that only during the quiet period was said reduction observed. It should be highlighted that for measurements inside the incubators, the microphone of the sound level meter was placed 20 cm from the neonate's pinna, given that it is the distance at which the neonate perceives better,[10] a criterion considered for application in the present study with the difference that it was carried out in preterm infants in servo cradles.

High noise levels in NICU not only affect the neonates hospitalized, harmful effects have also been reported in the nursing staff who remain during complete shifts in the NICU. The effects include physiological alterations, like increased blood pressure and heart rate, as well as headaches. The noisy environment also contributes to professional burnout and irritability of the staff; these physiological and mood alterations produce problems in the performance of the nursing staff and gives way to a greater number of errors and accidents, the prevalent situation is that nursing is not trained to apply measures to prevent excessive noise and may even "become used" to the environment and not perceive the noise stimuli.[11,12]

This situation makes it essential to identify the intensity and factors that generate noise in the NICU, which permits modifying towards a favorable environment for the good development of neonates at risk, especially those born preterm, as well as the performance of the nursing staff. Due to the aforementioned, the study sought to determine the level of environmental and periauricular noise in preterm babies and identify the sources generating noise in the Neonatal Intensive Care Unit of a reference hospital.

Methods

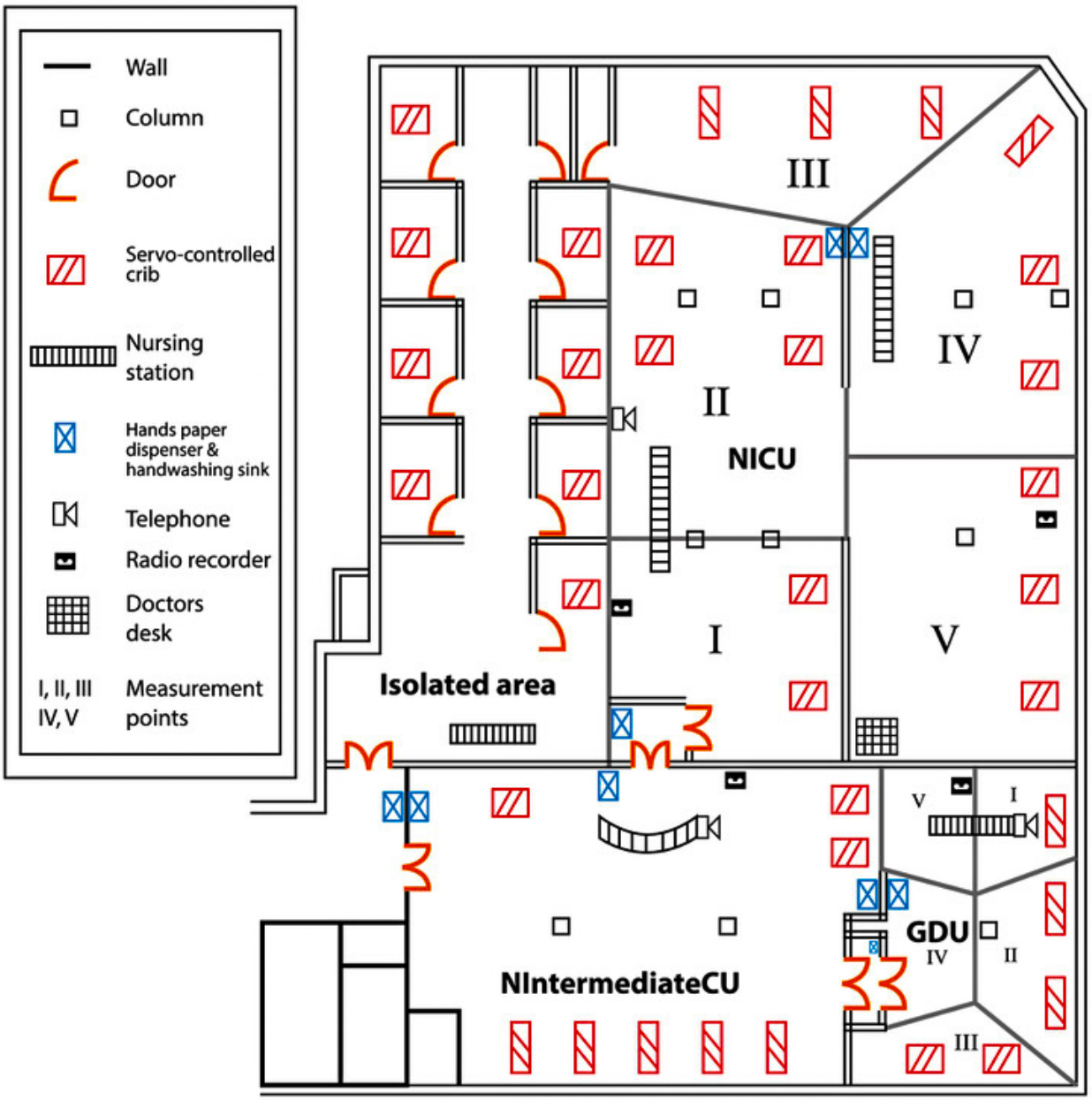
Design. A cross-sectional and analytic study was conducted in the NICU of a reference hospital located in the city of San Luis Potosí, Mexico. The study had as unit of observation the intensity of periauricular noise in premature patients and intensity of environmental noise in the NICU.

Place of study. The NICU is located in the NU of the hospital and has a floor area of 15.5 x 12.5 x 3 m with capacity for 28 patients; besides the NICU, the NU has the Newborn Intermediate Care Unit (UCIREN, for the term in Spanish), Growth and Development Unit (GDU) and Isolated Unit (not available at the moment of study). The GDU was used for the pilot test and the NICU for the definitive collection, as observed in Figure 1.

Human resources in the NICU. The morning shift has six to seven nurses, two adjunct physicians, two medical residents, an intern medical student, and one to five medical students and others from the health area, a manager, a radiologist, and a social worker. The evening and night shifts also have six to seven nurses, an adjunct physician, an intern medical student, and one to five external medical students. There is a greater number of staff from Monday to Friday (morning

and evening shifts), during nursing change of shift, the morning medical visit, and visits from relatives, Figure 1 shows the distribution of the neonate ward.

Figure 1. Intensive Care Unit of a reference hospital, San Luis Potosí, S.L.P., México



Designed by: Mr. Miguel A. Martínez Martínez and Lic. DG Rafael Jeshua Rivera Gallegos.
The floor plan of the neonatal unit is not in scale, it is only representative of the areas that compose it.

Sample and Sampling. Premature patients. A non-probability sample and intentional sampling was selected for premature patients due to their vulnerability and risk for the phenomenon studied. The simple comprised nine preterm neonates admitted to NICU and who remained there during the three days evaluated and who fulfilled the inclusion criteria: preterm or small for the gestational age according with the file's clinical record, whose mothers and/or fathers accepted to participate in the study and signed the informed consent. The patients in the sample were located in servo-controlled thermal cradles and were distributed in the critical measurement areas of the NICU: one patient in areas I, II, III and V, respectively and five patients in area IV. The gestational age of the preterm patients (evaluated through Capurro or Ballard) had a gestation median of 32 ±2.9 weeks (26 to 35.5) and the weight had a median of 1527.78 ±528g at birth (610 to 2,180 g).

Measurement points. Five critical measurement areas were determined. Through equidistant points, [13] representativeness was sought, given that the dimensions of the NICU area – in general – are asymmetrical; it is divided by walls and the space between each patient's servo cradle is different and was defined in the following manner (Figure 1): I. Entrance to NICU (two servo cradles and heavy transit by staff); II. Intermediate zone (four servo cradles, automatic paper dispenser, wash sink with automatic water jet, and ward telephone); III. Zone away from the entrance (three servo cradles, paper dispenser, wash sink with automatic water jet, and small storage space and light transit by the staff); IV. Intermediate zone (three servo cradles, paper dispenser, nursing control, and radio recorder); and V. Side area at the entrance (three servo cradles, desk for physicians, computer and printer, away from the wash sink and without transit by the staff).

Collection period. The study took three representative days of a work week, thus, Monday and Friday were representative of working days and Sunday was representative of the weekend, given that the behavior of noise levels varies according with the activities, schedules, and days of the week in the NICU. Based on this, schedules were chosen to collect data, thus, during the morning shift from 07:00 to 11:00 h (nursing change of shift, medical visit, inter-consultations, and higher number of staff); during the evening shift from 14:00 to 18:00 h (nursing change of shift and rotation of medical residents, visits from relatives, morning medical visit); and during the night shift from 21:00 to 01:00 h (nursing change of shift, night medical visit).

Data collection. This was carried out by two nursing professionals, one of them (first author) in process of specializing in advanced clinical nursing with emphasis in pediatrics and the other licensed in nursing; both work in the NU of the study hospital. Prior to collecting data through pilot test, training was carried out to handle and calibrate the noise measurement equipment and complement it with computer equipment, establish connections, perform the measurements and data registries, supported by a computer systems engineer. The definitive collection gathered 16,200 registries (one registry every 5 s) of the level of environmental noise from the five critical areas in the NICU, periauricular noise from the nine premature patients, and 90 registry sheets of the noise sources. All the data were used for tabulation in function of the duration of the measurement of only three representative days of a week, given that in other studies the duration was up to several weeks.

Instruments for information collection. (*i) General data registry spreadsheet*: number of cradle, initials of patient's name, gestational age and weight at birth, method of evaluation of gestational age, person responsible for the measurement, critical measurement area, date of data collection, time of start and end of measurement; (*ii) Checklist from noise-generating sources*: designed based on knowledge on the area of study and from the literature review; and (iii)

Decibel meter or sound meter (STEREN 400): range of measurement: 30–130 dB, preciseness +2 dB, resolution 0.1 dB, sampling frequency 0.5 s, microphone, amplifier, weighting networks, and a level indicator, all fulfilling the norms by the American National Standards Institute (ANSI) [14] complemented with a Toshiba portable computer, Windows XP Professional emulator system, Sound Level Meter software, RS 232 connection cable with port adaptor to fiber optic USB.

Procedures. *(i) Pilot test.* With prior training of the staff to collect data from the five critical areas pre-established in GDU to fine tune the measurement procedures, a pilot test was conducted one week before (a working day in three shifts) the definite collection. This resulted in modifications only for the registry of noise sources; *(ii) Periauricular measurement.* Through universal norms of hand and equipment asepsis and antisepsis, the sound meter, computer, and microphones were connected, programming the range of measurement from 40 to 90 dB, fast-measurement mode, time range 0.5 s. The Windows XP emulator system was accessed to the Removable Devices option*, Y.C. USA* USB to serial cable connect to host and once activated all these options necessary for recognition of the USB cable by the Windows system, the sound level meter software was accessed and measurement began of the nine premature patients at 20 cm from the pinna [10] for 15 min in each patient during each shift for the three days evaluated. At the end of the 15 min, the *stop* icon was pressed on the software and *off* on the decibel meter. The file was backed up on the icon save and it was labeled according to the start time and day of data collection and, thus, continued until completing the patients from the five predetermined areas. Measurement of environmental noise. In Critical areas I, II, III, IV, V, the sound meter was placed on a tripod at a height of 1.3 m from the floor, according to the norm,[13] the measurement was performed through a semi-continuous measurement for a minimum 15-min period in each area, in each point, and in each shift of the three representative days; (iii) *Noise-generating sources:* each noise generating source was identified and registered during the 15-min period of measurement per shift, coinciding with the loudness peaks, according with the graphic from the Sound Level Meter software on the computer screen.

Data analysis. Categorical data were tabulated and represented through frequencies and percentages; the continuous data through measures of central tendency and dispersion. Comparison of medians was conducted through analysis of variance (ANOVA) statistical test and Student's t test for related samples, significance was established at $p \geq 0.05$.

Ethical aspects. The protocol was submitted to the Ethics and Research Committee in the study hospital and approved (registry 07-14). In addition, the informed consent was obtained signed by the mother and/or father of the preterm patient.

Results

In all, 16,200 registries were obtained of the environmental level of noise from the five critical areas of the NICU and periauricular noise in the nine premature patients of the sample, which are described ahead for each category.

Level of periauricular noise per day and shift

The average intensity of periauricular noise (64.5 ±1.91 dB) was higher during the three days and in the three shifts evaluated with respect to the average intensity of environmental noise (63.3 ±1.74 dB), except for Sunday during the evening shift. The level of periauricular noise on the days evaluated behaved differently; in decreasing order, Friday had an average value of 64.8 ±2.3 dB, Sunday of 64.1 ±2.5 dB, and Monday of 63.6 ±1.7 dB. The noise-level behavior with respect to the shifts evaluated was also different, thus, the morning and evening shifts together registered a

range from 59.06 to 77.73 dB, exceeding from 14.06 to 32.73 dB (31.2% to 72.7%) with respect to the daytime standard of 45 dB for hospitals and during the night shift it varied from 60.8 to 73.5 dB and exceeded between 25.8 and 38.5 dB (73.7% to 110%), also above the recommendation with respect to nightly 35 dB for hospitals, according with the AAP. [4]

Level of environmental noise per day and shift

The average intensity of environmental noise was lower (63.3 ±1.74 dB) in the three days and in the three shifts evaluated with respect to the average intensity of periauricular noise (64.5 ±1.91 dB), except for Sunday during the evening shift in which the environmental average surpassed the periauricular average. The level of environmental noise during the days evaluated was different; in decreasing order, it registered on Friday a median of 63.7 ±1.9 dB, Sunday at 63.6 ±2.4 dB, and Monday at 62.6 ±2.0 dB ($p \leq 0.05$). In the three shifts, the level of environmental noise exceeded the recommendations, thus, during the morning and evening shifts together it ranged from 59.2 to 75.01 dB, exceeded between 14.2 and 30.01 dB (31.5% to 66.6%) with respect to the daytime standard of 45 dB for hospitals and during the night shift it varied from 59 to 74.6 dB and exceeded between 24.0 and 39.6 dB (68.5% to 113.1%) above the recommendation with respect to 35 dB at night for hospitals according with the AAP. [4] The comparison between both measurement points, periauricular and environmental, per day and shift evaluated can be observed in Table 1.

Table 1. Intensity of periauricular and environmental noise in decibels, according with the day and shift in the Neonatal Intensive Care Unit of a reference hospital

Day and Shift	Periauricular Median (SD)	Environmental Median (SD)	T	DF	*p* – value
Friday morning	66.4 ±2.8	64.6 ±1.3	16.049	844	**
Sunday morning	64.1 ±2.7	63.4 ±2.6	7.193	867	**
Monday morning	64.7 ±2.2	63.8 ±2.2	11.004	907	**
Friday evening	64.4 ±2.2	63.5 ±2.4	7.322	906	**
Sunday evening	63.1 ±2.8	63.4 ±2.6	-2.466	897	*
Monday evening	63.2 ±3.1	61.7 ±1.8	13.980	922	**
Friday nocturnal	63.7 ±1.7	63.1 ±2.0	6.467	890	**
Sunday nocturnal	65.2 ±1.5	64.0 ±2.1	13.109	897	**
Monday nocturnal	62.9 ±2.3	62.5 ±2.0	3.986	894	**

SD = Standard deviation. t = Student's t test for related samples. DF = degrees of freedom. Significance *$p \leq 0.05$; ** $p \leq 0.001$

Level of periauricular and environmental noise, according to critical measurement area

With respect to the behavior of the level of periauricular noise in the five critical measurement areas, it was higher in areas I, II, and IV comparatively with the environmental level ($p \leq 0.05$), not so in areas III and V that had similar behavior in noise levels ($p \geq 0.05$). The noise level in the five critical measurement areas of NICU was > 60 dB and, hence, registered higher levels than those of safety required by the AAP norm.[4] Data are presented comparatively by critical measurement area and by points of periauricular and environmental measurement in Table 2.

Table 2. Intensity of periauricular and environmental noise in decibels, according with the critical measurement area in the Neonatal Intensive Care Unit of a reference hospital

Measurement area	Periauricular Median (SD)	Environmental Median (SD)	T	DF	*p-value*
I	64.1 ±2.2	62.7 ±1.7	3.339	16	**
II	64.9 ±1.4	64.1 ±1.7	2.597	15	*
III	64.5 ±1.7	64.7 ±1.3	-0.568	17	-
IV	64.7 ±1.5	63.6 ±1.6	3.741	17	**
V	62.1 ±1.5	61.9 ±1.1	0.490	16	-

SD = Standard deviation. t = Student's t test for related samples. DF = degrees of freedom. Significance *$p < 0.05$; ** $p \leq 0.001$

Noise sources

Table 3 shows the noise-generating sources observed during the three days and their respective shifts evaluated; in general, the ranges of noise level varied from somewhat over 60 dB to nearly 100 dB in both periauricular and environmental measurement points. Most of the sources produced sudden noises that exceeded the corresponding norm for transitory noises.[15] On the one hand, sources of transitory sudden noise existed that produced similar noise levels in the points of periauricular and environmental measurement ($p \geq 0.05$), such as movement, opening and closing of opening or closing of furniture and fixtures with an average of 70.1 ±3.9 dB and 68.8 ±2.6 dB periauricular and environmental, respectively, (clashing of baby bottles, drawing of curtains, movement of the cradle's side door, opening or closing of drawers on the red cart, placement of objects on the nursing control table, on cradles and on Pasteur tables, as well as running water). On the other hand, most of the sources generating sudden and transitory noise contributed to producing a level of periauricular noise higher than the environmental ($p \leq 0.05$), said sources came from care devices and equipment, such is the case of alarms with an average of 70.9 ±5.2 dB and 67.7 ±2.6 dB periauricular and environmental, respectively, (mechanical ventilator, cradle and infusion pumps), not so for monitor alarms ($p \geq 0.05$); varied incidences also contributed, one of them related with the organization and/or activities in the NICU, like sounds from the ward's telephone and the suction intake, along with crying from patients.

Sources of sudden and transitory noise were observed, which produced higher level of environmental noise compared with periauricular noise ($p \leq 0.05$), some came from accidents, like objects falling to the floor and others from the use of furnishings, like the paper dispenser and dragging tables with 70.8 ±6.7 dB and 68.1 ±2.4 dB, environmental and periauricular, respectively. Sources of continuous noise were also noted produced by constant use of nebulizers, 69.8 ±1.0 dB and 68.8 ±1.9 dB, periauricular and environmental, respectively, and it worth highlighting that there were noise sources from formal and informal human interaction. In the first case, within the care programming in NICU, the change of shift of the nursing staff produced less noise in the periauricular point (68.4 ±2.6 dB) than in the environmental (71.3 ±1.7 dB) ($p \leq 0.05$) and the medical visit, 63.5 ±2.1 dB and 66.3 ±2.5 dB, periauricular and environmental, respectively, without significant difference in the levels of both measurement points ($p \geq 0.05$). The source of informal interaction producing

the most continuous noise and a higher level of periauricular noise (68.8 ±3.5 dB) compared with environmental noise (68.4 ±2.6 dB) ($p \leq 0.05$) was conversations by the nursing staff, which was observed during the three days and in almost all the shifts evaluated.

Table 3. Noise intensity in decibels in decreasing order, according to generating source in the NICU of a reference hospital

Noise source	Periauricular (dB) Median (SD) (Range)	Environmental (dB) Median (SD) (Range)	DF	F	*p* value (day/shift/point of measurement)
1. Clash of the bottles	75.9 ±11.4 (69.0 - 96.0)	68.8 ±0.3 (68.5 - 69.1)			
2. Alarm from mechanical ventilator	75.2 ±9.6 (65.9 - 96.3)	68.5 ±2.8 (61.5 - 75.5)			
			11	241.140	*FEvePer
			26	7.354	*FEveEnv
			26	150.203	**FNocEnv
			11	284.587	*MMorEnv
			26	15.636	**MEvePer
			26	7.153	*MNocEnv
			26	13.976	**SNocEnv
3. Alarm from cradle	75.0 ±5.5 (64.4 - 87.0)	69.3 ±3.5 (64.4 - 76.0)			
			20	374.900	*SMorEnv
4. Drawing of curtain	72.7 ±2.4 (69.1 - 74.5)	69.5 ±8.7 (61.0 - 78.0)			
5. Cradle side door (movement)	72.6 ±4.7 (66.9 - 78.8)	69.1 ±3.5 (64.3 - 78.7)			
6. Alarm from infusion pump	71.4 ±3.9 (66.4 - 82.0)	67.1 ±3.0 (64.0 - 77.0)			
			13	13.802	*MEvePer
			14	452.071	*SMorEnv
7. Ward telephone	70.2 ±4.3 (64.9 - 78.8)	68.8 ±2.0 (66.8 - 71.8)			
			10	15.131	**FMorPer
			10	42.816	**FNocEnv
			10	14.566	**MEvePer
			10	7.221	*SMorPer
8. Drawers from red cart (opening – closing)	70.1 ±3.3 (67.7 - 72.4)	68.6 ±0.1 (68.5 - 68.7)			

Table 3. Noise intensity in decibels in decreasing order, according to generating source in the NICU of a reference hospital (cont.)

Noise source	Periauricular (dB) Median (SD) (Range)	Environmental (dB) Median (SD) (Range)	DF	F	*p* value (day/shift/point of measurement)
9. Nebulizer	69.8 ±1.0 (68.5 - 71.2)	68.8 ±1.9 (67.1 - 70.9)			
10. Crying by patient	69.6 ±4.2 (64.9 - 78.0)	67.5 ±2.8 (65.2 - 72.0)			
			4	273.750	*FMorPer
			4	905.167	*MNocPer
11. Objects falling to the floor	69.0 ±3.0 (63.4 - 72.6)	71.3 ±7.6 (64.4 - 98.0)			
			14	42.997	*FEvePer
			16	273.691	*SEvePer
12. Monitor alarm	68.9 ±6.6 (61.0 - 85.1)	66.7 ±1.9 (63.8 - 70.3)			
13. Conversation by staff	68.8 ±3.5 (61.0 - 78.2)	68.4 ±2.6 (63.2 - 74.1)			
			30	4.299	*FMorPer
			25	709.171	**FEvePer
			25	89.879	*FNocEnv
			30	3.279	*MMorEnv
			30	3.646	*MNocPer
			30	3.007	*SMorEnv
			25	66.872	*SEveEnv
			25	21.086	*SNocPer
14. Nursing change of shift	68.4 ±2.6 (64.8 - 73.0)	71.3 ±1.7 (69.5 - 73.1)			
			10	246.483	*FEvePer
			10	313.046	*MMorEnv
15. Placement of objects in control by nursing	68.2 ±3.6 (63.7 - 71.9)	66.9 ±1.3 (65.6 - 68.2)			
16. Placement of objects on cradle	68.0 ±0.8 (67.2 - 68.7)	72.5 ±1.0 (71.5 - 73.5)			
17. Paper dispenser	68.0 ±2.4 (63.3 - 71.0)	69.8 ±5.0 (65.7 - 86.5)			
			13	256.036	*MMorEnv

Table 3. Noise intensity in decibels in decreasing order, according to generating source in the NICU of a reference hospital (cont.)

Noise source	Periauricular (dB) Median (SD) (Range)	Environmental (dB) Median (SD) (Range)	DF	F	*p* value (day/shift/point of measurement)
18. Placement of objects on Pasteur table	67.8 ±2.3 (66.2 - 69.4)	69.0 ±4.8 (64.9 - 78.8)			
			6	262.125	*FNocEnv
			6	719.458	*MNocPer
19. Dragging of tables	67.5 ±2.0 (64.9 - 71.0)	71.3 ±7.6 (64.4 - 98.0)			
			6	295.792	*FMorPer
			16	622.889	*FEvePer
			16	273.691	*SEveEnv
20. Suction intake	66.6 ±2.5 (62.0 - 69.0)	66.0 ±2.7 (62.0 - 69.0)			
			7	287.857	*FMorPer
			7	616.873	*MNocPer
21. Running water	66.1 ±2.7 (61.1 - 69.0)	66.2 ±1.6 (64.1 - 68.0)			
22. Medical visit	63.5 ±2.1 (61.4 - 65.5)	66.3 ±2.5 (62.7 - 70.0)			

M = Monday, F = Friday, S = Sunday. Mor = Morning, Eve = Evening, Noc = Nocturnal, Per = Periauricular, Env = Environmental. dB = decibels. DF = degrees of freedom. F = analysis of variance (ANOVA). Significance *$p<0.05$; ** $p\leq0.001$.

Discussion

The intensity average of daytime noise in the NICU studied is above the standards recommended by the AAP (45 dB), periauricular (64.2 dB) and environmental (63.4 dB), which is also the case for nocturnal levels (35 dB), 63.7 and 63.4 dB periauricular and environmental, respectively.[4] High noise levels originate from sources that generate transitory sudden noise ranging in the periauricular point from 68.1 to 70.9 dB and continuous noise has average magnitudes of 67.6 dB periauricular and 68.7 dB environmental, which surpass the noise limits of the Mexican standards; sudden noise must not be > 60 dB and continuous noise must not be > 45 dB.[15] Similarly, noise level reports in a Mexican hospital always exceeded the recommendations, given that its level of environmental noise (30 cm outside the incubator) was 58.7 dB and 60.9 dB periauricular (within the closed incubator 30 cm from the neonate's pinna), as observed in a neonatology service in a private hospital in Mexico city,[16] as well as in Brazil in the NU prior to an intervention with the "quiet hour", presented levels around 70

dB and that after said intervention it was reduced by 20 dB.[10] The same was reported in a study on noise level conducted in Portugal in three NICU; the findings showed levels between 48.7 and 71.7 dB, magnitudes quite similar to the levels in the present study.[11] With respect to the noise level variability in the different days and shifts evaluated, it may be deduced that the loudness is given by activities, type of patient requiring vital support equipment according with their state of complexity, and number of people in the NICU in each institution. According with the critical areas of study within NICU, sector V had lower noise intensity tan the rest, which, although also the types of patients was similar and with vital support equipment present, it is mentioned that it is an area with less transit, favored by characteristics, like sinks further away from the patient at 10-m distance approximately, unlike the 6-m distance in the rest.

Findings in the measurement of environmental and periauricular noise levels in neonate units in the present study show that periauricular noise exceeds environmental noise by at least 0.1 to 2.0 dB; it could be deduced that loudness near the pinna is perceived with greater intensity, added to the fact that care equipment (monitors, nebulizers, suction intake, among others) are at the patient's headboard, which, when their alarms are activated, produce sudden noises that increase the noise level; their harmful effect could further potentiate the effects of the neonate's comorbidity and treatments. Exposure to noise ≥ 60 dB has been associated with the potentiation of the effect of ototoxic agents, such as aminoglycosides that can damage the ciliated cells of the ear and produce responses by the preterm babies to high transitory noises that affect principally the cardiovascular system with acceleration, deceleration or biphasic deceleration-acceleration of heart rate and blood pressure; however, the latter does not exceed normality ranges. Results of studies on exposure to noise in NICU are not conclusive with respect to modification of breathing frequency or oxygen saturation. Regarding to the sleep state, which – as known – is fundamental in the neonate's neurodevelopment, it is affected by noise and provokes states of irritability or crying. It has been noted that establishing the quiet hour produces increased duration of sleep in preterm babies;[7,10] nevertheless, the child returns to the prior state of noise levels and it continues affecting the neonate in the NICU.[4] Moreover, effects of noise have been reported, such as stress, pain, alterations in growth hormone production and, specifically, in the preterm baby somatic adverse effects in sleep, hearing damage, and disorders of emotional development.[17,18]

In relation to noise sources, the study highlights mechanical events that produce greater noise and which due to their nature may be avoided or have their loudness reduced, like handling of formula bottles, alarms of various types, movement of furnishings or their parts, sounds of objects due to falls, placement on a surface, or dragging on the floor. In this respect, maintenance or replacement of furniture, equipment and fixtures should be sought to make environmental and periauricular noise reduction possible.[4]

The highest noise level occurred during the morning shift; similar to that reported in the pre-intervention assessment for noise reduction in the NU in a hospital in Monterrey, Mexico with 59.7 ±5.0 dB, activities,[19] formal interaction (nursing change of shift), as well as informal interaction by the staff (conversation), contribute significantly to the noise level.

As an effect of this study, during the days of noise level evaluation, the hospital staff modified their voice volume, responded immediately to the alarms, and turned off the radio recorder; even so, the results evidence higher limits than those permitted. The nursing staff in the NICU, although sensitized to reduce noise from alarms, is faced with the challenge to constantly respond to alarms, especially those of manual control because their multiple tasks do not allow for this. Due to this, and according with study results,

automatic alarms could be used in NICU based on the neonate's saturation,[20] meaning that an institutional noise reduction policy is required, which implies a permanent program to reduce sound stimuli in the NICU and where the health staff participates comprehensively.

It is worth mentioning that studies have also analyzed the impact of noise on the nursing staff that remains during complete shifts in direct patient care in the UN; the staff attributes the noise level as a significant factor, the manifestation of signals and responses regarding the environment in the UN, especially in the NICU, as the burnout syndrome, tiredness, headache, and mood disorders such as irritability. These conditions become chronic, depending on the amount of time in the NICU, condition a greater amount of errors in professional performance and accidents. The staff possibly confronts this wear with mechanisms, like music during the shift and informal chatting near and far away from the patient that, in turn, raise noise levels, added to the high level of noise making the staff to raise their voice to be heard by other members of the health staff in the NICU; hence patients and staff must be considered in noise reduction programs. In addition, these studies report as an important finding that the nursing staff is not trained in noise reduction strategies and interventions in the NU.[4,11]

Among the study limitations, the study did not manage to determine with specificity the isolated source, only through the sudden rise coinciding during registries during the measurement process. Although an intentioned measurement was carried out of certain noise sources in different areas, day, and schedule, the recording of decibels was quite variable, probably because of existing background noise and the technical part did not have an expert on procedures of acoustic measurements.

It is recommended for noise factors that are preventable to be reduced; the institution and the health staff must favor a safe environment for the recovery and development of neonates at risk, especially preterm babies. It is important to have this hospital policy and have a program and sensitivity campaign and training for noise reduction, as well as provide vital support equipment, quality organizational and architectural factors. Beneficial sounds should be included, such as soft and modulated voices from the parents and from the staff in charge, given that recognizing sounds of human voices favors language development.[12,21] Periodical samplings of the noise levels are suggested to compare if the actions implemented contribute to diminish such.

This study concludes that environmental and periauricular noise in NICU exceed by twice and almost thrice the 45 dB during the day (59.06 to 77.73 dB) and during the night shift (60.8 to 73.5 dB) with respect to 35 dB at night in hospitals, as recommended by the American Academy of Pediatrics. Also, sudden noise levels (67.9 to 70.8 dB) and continuous noise (67.6 to 68.7 dB) exceed the regulating criteria of noise levels in Mexican hospitals within the NICU that must not exceed 60 dB of transitory noises and 45 dB of environmental continuous noise according with the Mexican Official Norm (NOM - 025-SSA3-2013) for the organization and operation of intensive care units. Noise level is higher in the morning shift during the days evaluated. Noise sources are from mechanical origin (alarms) and from human activity, especially conversation by the staff and change of nursing shift.

It is important for the NU staff and specifically the nursing staff to recognize their participation in the production of high levels of noise in this environment, given their 24-h per day permanence and may contribute to improving the acoustic space to care for a highly vulnerable population, like preterm children and others, contribute to improving their own work environment, given that it is known that noisy environments produce stress in the nursing

staff and this combination is inversely related with the level of job satisfaction and el chronic wear. Participation must be through application of strategies and actions based on continuous training.

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Original article

Presence of the Reflective and Critical Thinking Capacity in Nursing Curricula in Iberian America

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Presence of the Reflective and Critical Thinking Capacity in Nursing Curricula in Iberian America

Abstract

Objective. The objective was to identify the presence of the capacity for reflexive-critical thinking or similar, in Nursing Curricula in Iberian America. **Methods.** The article gathers the results of one of the objectives of the macro-project developed by the Iberian American Network on Nursing Education Research, titled *Strategies to develop reflective and critical thinking in nursing students*: *Iberian America situation*. To achieve this, a descriptive and exploratory research was conducted with qualitative approach. An instrument created for this project was used, along with some guiding questions to focus the information. **Results.** Eight countries participated (Bolivia, Brazil, Colombia, Ecuador, Spain, Mexico, Peru, and Venezuela), which contributed information from 189 curricular plans. The R&CT was found in the majority of the curricula,

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although with diverse denominations. The principal learning strategies used were problem-based learning, group dynamics, reflective reading, clinical practice, and simulation laboratories. The evaluation methods used are the knowledge test, case analysis, and practical exam. **Conclusion.** Significant stress exists in the discourse and curricular organization. Incongruences were found and a clear inclination toward the formation of professionals with broad technical skills under a traditional, memory, banking and knowledge accumulation education.

Descriptors: education, nursing; thinking; curriculum; students, nursing.

Presencia de la competencia de pensamiento reflexivo y crítico en los currículos de enfermería en Iberoamérica

Resumen

Objetivo. Identificar la presencia de la competencia de pensamiento reflexivo-crítico o afines en los currículos de Enfermería en Iberoamérica. **Métodos.** El artículo recoge los resultados de uno de los objetivos del macro-proyecto que desarrolla la Red Iberoamericana de Investigación en Educación en Enfermería (RIIEE) titulado *Estrategias para desarrollar en el estudiante de enfermería el pensamiento reflexivo y crítico* (PRyC)**:** *situación Iberoamérica***.** Para lograrlo se realizó una investigación descriptiva y exploratoria con abordaje cualitativo. Se empleó un instrumento creado para este proyecto y algunas preguntas orientadoras para focalizar la información. **Resultados.** Participaron ocho países (Bolivia, Brasil, Colombia, Ecuador, España. México, Perú y Venezuela) que aportaron la información de 189 planes curriculares. El PRyC se encontró en la mayoría de los currículos, aunque con diversas denominaciones. Las principales estrategias de aprendizaje empleadas fueron: el aprendizaje basado en problemas, las dinámicas grupales, la lectura reflexiva, la práctica clínica y los laboratorios de simulación. Los métodos de evaluación utilizados son el examen de conocimientos, el análisis de casos y el examen práctico. **Conclusión.** Existe una tensión significativa en el discurso y la organización curricular. Se encuentran incongruencias y una clara inclinación hacia

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la formación de profesionales con amplias capacidades técnicas bajo una educación tradicional, memorística, bancaria y de acúmulo de conocimientos.

Descriptores: educación en enfermería; pensamiento; curriculum; estudiantes de enfermería.

Presença da Competência de Pensamento Reflexivo e Crítico nos Currículos de Enfermagem na Ibero-América

Resumo

Objetivo. O objetivo foi identificar a presença da competência de pensamento reflexivo e crítico ou relacionado, nos currículos de enfermagem na América Latina. **Métodos.** O artigo reúne os resultados de um dos objetivos do macroprojeto desenvolvido pela Rede Ibero-americana de Pesquisa em Educação em Enfermagem (RIIEE) intitulado Estratégias para Desenvolver o Pensamento Reflexivo e Crítico em Estudantes de Enfermagem (PRyC): a situação ibero-americana. Para conseguir, foi realizada uma pesquisa descritiva e exploratória com abordagem qualitativa. Um instrumento criado para este projeto e algumas perguntas orientadas para enfocar as informações. **Resultados.** Participaram oito países (Bolívia, Brasil, Colômbia, Equador, Espanha, México, Peru e Venezuela) que contribuíram com informações de 189 planos curriculares. O PRyC foi encontrado na maioria dos currículos, embora com nomes diferentes. As principais estratégias de aprendizagem utilizadas foram: aprendizagem baseada em problemas, dinâmica de grupo, leitura reflexiva, prática clínica e laboratórios de simulação. Os métodos de avaliação utilizados são o teste de conhecimentos, a análise de casos e o teste prático. **Conclusão.** Existe uma tensão significativa no discurso e na organização do currículo. Há incongruências e uma clara inclinação para a formação de profissionais com amplas capacidades técnicas sob uma educação tradicional, de memória, bancária e de acumulação de conhecimento.

Descritores: educação em enfermagem; pensamento; currículo; estudantes de enfermagem.

Introduction

Currently, the nursing professional's formation must respond in efficient, integral, timely, assertive, and humanistic manner to the demands required by caring for life and maintenance and reestablishment of human health. This is not an easy task, given that the formal care provided by this professional implies the dynamic of growing changes in the designs and current university methodologies, claim with it the implementation of an integrating vision and transversal of the contents, to deploy effectively the elements necessary to manage to strengthen the skills needed by a graduate from a professional nursing program.

Diverse educational organisms, like UNESCO or the Latin American Association of Faculties and Schools of Nursing (ALADEFE, for the term in Spanish), recommend que las higher education institutions (HEI) in Iberian America que offer higher education in Nursing (undergraduate and graduate), form and contribute an interpretative vision in nursing professionals, through an academic curriculum that goes beyond teaching the diverse functions – granting, education, investigation, management, and administration, among others – that will take place around formal or professional nursing care, developing innovative skills.[1] One of the cross-sectional curricular axes that must be considered is the development, implementation, and promotion of reflective and critical thinking (R&CT), which offer nursing professionals the theoretical-practical tools necessary to use this type of thinking in any environment of the labor market where they are inserted, which will enhance their vision, autonomy, and professional and social recognition.[2,3]

Thinking reflectively and critically permits knowing and discriminating one action from another, in function of priorities established to care for the person, interacting with them in emancipatory manner, where forms or bridges of union must be sought between the most artistic part of nursing and those elements more associated with the field of science, thus, achieving higher quality when providing care.[4] The development of R&CT in nursing students in Iberian America has been poorly studied, although it increasingly accepted that this type of thinking must be a skill upon graduation of all the programs to form nursing professionals. The aforementioned is justified by the relation critical thinking has with the nursing staff's capacity to make clinical judgment in the nursing practice, which is necessary to provide therapeutic care of the highest quality. Additionally, it has been indicated that nursing professors are responsible for the creation and implementation of curricula that form and graduate professionals capable of using the skills of critical thinking.[5]

The critical thinking capacity describes an integral or holistic behavior and it is expected that its promotion and development be cross-sectional, that is, that during each period and in each assignment or unit of learning it is taught

by the professor and learnt by the students, as an individual skill, with interpersonal connotations, related with other skills, like analysis and synthesis capacity, critical and self-critical capacity, management of information, decision making, and problem resolution.[6]

Since the 1990s, in different national and international institutional documents, the need was established to develop the capacity for R&CT of the nursing staff during their formation and during exercise of their work practice. The scientific literature related with this study object also confirms the importance of developing said capacity.[7,8] Nevertheless, there is a shortage of investigations related with the nursing discipline about the pedagogic and didactic practice to advance in this way of thinking. Hence, it becomes a priority for the nursing faculty staff to identify the situation that prevails in teaching and learning R&CT as a capacity that must be developed and promoted during the whole formation process of new generations, besides privileging during the professional exercise, in any setting of the nursing labor market.

The Iberian American Network on Nursing Education Research (RIIEE, for the term in Spanish) identified as one of its research priorities the "Development of Reflective and Critical Thinking in Nursing Students", a preference backed by the participation of over 80 nurses from Iberian American countries who attended the 3rd Network Meeting in September 2011, in Coimbra, Portugal, within the framework of the 11th Iberian American Conference on Nursing Education, organized by the ALADEFE. This article describes the presence of the R&CT capacity in curricula of higher level or degree in nursing of educational institutions in Iberian America, as well as the educational approaches, teaching, learning, and evaluation strategies registered in each academic program analyzed.

More frequently, the characteristics that distinguish nursing professionals are cognitive abilities over psychomotor skills that, historically, have been over-dimensioned in the academic curriculum. Reflection and reflective practice are very familiar terms, currently, within the setting of the nursing practice. These are meanings that can generate a broad spectrum of sensations and reactions: from more enthusiastic adhesion to ambiguity and skepticism. In recent decades, ideas related with reflection and the reflective practice have been incorporated in initial and continuous formation programs in the context in which is conducted the research study by the RIIEE.[9]

The evolution of nursing degree curricula has crossed continental borders and has homogenized the objectives and las philosophical lines that inspire different curricula aimed, in these moments, at formation through skills, among which are highlighted as vertebral axis of the formation the capacity for critical thinking. This has permitted, saving the cultural, economic, and socioeconomic diversity of the different regions, to undertake an interuniversity and international study of the educational dimensions presented by this research.[10] Given that the curriculum stems from the elaboration of school programs and from the conformation of educational systems that should address the need to achieve greater efficiency of educational systems[11] within a given context, it is said to originate from a cultural construction, within a balance between the formation as professional, as person, and as member of a culture, to organize a series of educational practices in the formation of professionals.

This research has considered the paradigmatic visions or positioning of the authors already mentioned, from which was constructed the integrating notion of R&CT by the RIIEE, which alludes to a "Process of complex, systematic, dialogical and deliberate, self-directed and action-oriented reasoning, whose primary purpose is to choose, based on intellectual and affective processes (cognitive, experiential and intuitive), the best response options that favor nursing problem solving in well-defined contexts and according

with the ethical postulates of the profession".[12] This concept guides the study carried out by the RIIEE and incorporates the dialogical and participative attribute of critical thinking, like the expression of the maturity of thought, from the constructivist-critical perspective. Moreover, the cognitive, experiential, emotional, contextual, and ethical dimensions can be identified in the exercise of this way of thinking, capacities present in the epistemology of the nursing practice. To achieve the objectives of the nursing professionals, these need to generate, promote, and apply R&CT in each and all of their actions. It is essential, then, that from their formation, the new generations learn, comprehend, and apprehend this form of reasoning, which will allow a timely, effective, efficient Being, Knowing and Doing with high epistemological and sociological impact.

The objective of this study was to identify the R&CT presence or similar (critical thinking, reflexive thinking, analysis and synthesis, critical and self-critical capacity, information management, decision making, problem resolution, among others), in the different Nursing curricula of higher education institutions in Iberian America.-

Methods

This research was carried out with the participation from research groups from Bolivia, Brazil, Colombia, Ecuador, Spain, Peru, Mexico, and Venezuela. It is an exploratory, descriptive study with mixed approach. This article privileges the presentation of qualitative results. Although the project has a common methodological framework, consensual adaptations have been made, in function of the context in which it has been applied, according to the exploratory methodology adopted, to obtain results more in keeping with the reality in each region and assuming the characteristics and limitations of each context. Regarding the *study universe,* these were nursing curricula of Iberian America and the *study population* the nursing curricula from universities that offer the career in Nursing in the regions comprising the RIIEE, independent of their being public or private. A population was chosen through convenience, taking into account the complexity and diversity that exists in a study of these dimensions and areas of influence, as shown in Table 1.

Table 1. Number of curricula analyzed from the region of Iberian America

Country	Number
Bolivia	7
Brazil	45
Colombia	38
Ecuador	15
Spain	31
Mexico	26
Peru	21
Venezuela	6
Total	**189**

The inclusion criteria were the curricula that had in their academic plan some assignments that included the R&CT capacity or similar words considered synonymous for this study, such as critical thinking, reflexive thinking, analysis and synthesis, critical and self-critical capacity, information management, decision making, problem resolution, among others; the curricula had to of public access or that when

required from the respective academic instances, such would be provided.

The study categories or nuclei were: (i) presence of the R&CT capacity or similar in the curriculum; (ii) teaching and learning methodologies and strategies suggested in the curricula to develop and promote the R&CT capacity or similar; (iii) forms of evaluations suggested in the nursing curricula linked to achieving the R&CT capacity; and (iv) coherence between the R&CT capacity and the educational methodology used in teaching, learning, and assessment processes. Upon identifying the R&CT presence in the curricula, the study proceeded to review the areas of knowledge or areas of development of the academic offer, which were classified into biomed, public health, nursing, research, and electives.

To collect the data, a document was constructed, which in the first instance permitted identifying the type of institution, dependence, and country; thereafter, it was possible to gather elements to characterize R&CT within the curricula, through data related with the presence and denomination of this capacity, where, through consideration of the research team, terms were accepted, like analysis and synthesis, problem resolution, decision making, information management, or critical and self-critical capacity, given that they are all related with this type of thinking. Data was also gathered about the assignments, areas of knowledge, teaching-learning methodologies, and evaluation activities, with these elements being necessary to complement the characterization of the development and positioning of R&CT within the curricula. Lastly, to guide filling out the document, 10 guiding questions were elaborated, which permitted obtaining information on the educational approaches and the curricular theory that support the development of R&CT in nursing education institutions in Iberian America that participated in the research.

The empirical or field phase filled out 189 data-collection documents. The results were first grouped into the four regions that participated in the research: Andean, Brazil, Mexico, and Europe, resulting from it a regional analysis to, finally, elaborate a final report that permitted knowing the differences and similarities in the nursing degree academic programs in eight countries and 189 curricular plans; organized based on the four categories or thematic nuclei of study already indicated, deriving from the results some conclusions, reflections, and recommendations, taking as axis the objectives proposed in this research.

This project adhered to the Helsinki Declaration and to legislation in effect in each region and country of Iberian America for the regulation of confidentiality and protection of data obtained in the research.

Results

R&CT presence capacity or similar in the curriculum

The total of the curricula reviewed, although with different emphasis, contemplate the development of R&CT as priority for all graduates from educational institutions. It was identified that this type of thinking was found in three complementary stages: as formation purpose, as methodological strategy, and as result. The *formation purpose* proposes achieving a professional with integral, reflexive, critical formation, capable of adapting and transforming reality, with critical conscience, entrepreneurial leader, free, critical, and universal. The *methodological strategy* develops and implements pedagogical methods that promote reasoning and creative critical thought, curricular design through skills, analysis of lectures, group dynamics, individual and group practices, integrates theory-practice and integrates teaching-research and extension, with respect to conducting research, which can transcend at interdisciplinary and transdisciplinary levels. As *result*: the individual can solve problems, promote critical

thinking, generate knowledge, critical analysis, capable of anticipating and visioning the future, and construct viable alternatives to problems.

Referring to the curricular theory used in the construction and conduction of the curricula, the study identified diversity of approaches, although in most cases alluding to constructivism, centered on learning (independent learning or self-learning), through skills, flexible or semi-flexible; aimed in inter and/or multidisciplinary manner, favoring, in some cases, accent lines: community, clinical, entrepreneurial, educational and/or research, although it is worth mentioning that, mostly, the skill focuses only on the critical capacity and skill, leaving aside the reflective element. The explicit and implicit R&CT presence was found in all the elements that make up the curriculum, such as mission, vision, objectives, foundation of the academic program, graduation profile, curricular guidelines and evaluation, among others. Although it may be said that great diversity exists of terms that, based on the sense in which they are employed within the curricula, these may be considered synonyms of R&CT. Thus, the following can be stated: critical knowledge, reflexive thinking, analysis and synthesis, clinical practice, problem solving capacity, critical and self-critical capacity, critical and/or reflective attitude, critical and/or reflective skill, critical and/or reflective capacity, clinical judgment or clinical method, critical spirit, problem resolution, information management and decision making; all imply a self-directed, complex, systematic, and deliberate reasoning process aimed at action.

Within the Latin American RIIEE setting (Andean, Brazilian, and Mexican regions), R&CT presence is mostly consigned to areas of lower curricular weight, like the *Social-humanist*, which included assignments, like sociology, values, ethics, among others, many of them of elective nature; in contrast to those of greater curricular weight, like that of *disciplinary-medical-technical knowledge* – integrated by assignments, like anatomy, physiology, genetics, pharmacology, and nursing (basic, surgical, pediatric, maternal infant, among others). Other assignments in which the capacity appears are Communication skills, Foreign languages, Research, Information management, Workshops, Informatics and Technology. In Spain (European region), this capacity is specified predominantly in areas of disciplinary knowledge, like Nursing models and theories, Nursing process, *Practicum*, Anthropology of Health, and Epistemology of Nursing.

It was common to find in the graduation profile of the Nursing Curricula, belonging to the different institutions studied, the following statements: "train higher-level professionals committed with the population's health, development of their discipline, with capacity to construct from their own knowledge, take initiative and solve problems; competitive and with aptitude for team work, assuming responsibly the risks involved in disciplinary and interdisciplinary professional practice, capable of applying knowledge based on scientific evidence to care for human health, with humanistic and bioethics sense"; additionally, attributes are expressed on knowledge, skills, attitudes, and values to meet the needs, demands, and conditions of the nursing labor market for the 21st century, making broad specifications on the *Being, Knowing and Doing* of the nursing professional. An example of this is the following manifestation: *"the Nursing degree graduate will be able to ... solve problems, followed by decision-making professionals, with critical thinking, creative, participant, enterprising, productive, reflective and self-critical, capable of making clinical judgments, researcher, capable of business creation and engaging in independent practice, with autonomy, creativity, and self-realization, competent for intersectoral, multidisciplinary work, with effective communication and oral and written expression. Capable of providing integral care, conducting continuous and permanent learning, according to personal and professional needs..."* (C-32).

Teaching and learning methodologies and strategies suggested in the curricula to develop and promote R&CT capacity or similar.

Each curriculum analyzed consigns onto the "teaching and learning activities" section a range of actions the curricular program suggests, but it should be mentioned that this is only the so-called *formal or written curriculum*, which may not necessarily be congruent between the real and the hidden curriculum, an aspect that in this study exceeds those comparisons. Hence, this section only accounts for what was found in most of the curricula reviewed. In all the regions studied, the academic programs make explicit the teaching-learning strategies and evaluation of the capacity for critical thinking, supported by the literature. Nevertheless, the lack of linearity in the application of these strategies is also common. These are not enunciated in the curricula or in the teaching plans, at least with sufficient clarity to determine that, effectively, the teaching activity is being guided toward acquiring the R&CT capacity. The principal teaching and learning strategies made explicit in the curricula were: Portfolio of evidence, analysis of lectures, group dynamics, individual and group practices, research, problem-based learning (PBL), brainstorming, analysis and synthesis, conceptual maps, analogies, case studies, experiential workshops, nursing process, panel, forums, seminars, reflective diary, critical incident, essays, fieldwork, socio-drama, debate, dialogue, summaries, simulation laboratories, supervised clinical practice, among others.

Evaluations forms suggested in the Nursing Curricula linked to achieving R&CT capacity

The evaluation activities identified in the curricula reviewed were: portfolio of evidence, field diaries or logbooks, knowledge test, practical exam, elaboration of research work, essays, as well as case studies, elaboration of the nursing process, clinical case, written exam, oral exam, and self-evaluation. Regarding the evaluation, it was found that know-how is mainly evaluated. There is a message/discourse on constructivism, capacities, flexibility, self-learning, *etc*., which is not congruent with the didactic-pedagogic techniques of transmitting knowledge, generally evaluated to pass a course and promote students to the next academic level.

Coherence between R&CT capacity and educational methodology used in teaching, learning, and assessment processes

The teaching and learning strategies enunciated in the curricula reviewed are diverse. It is common to denominate active, creative, reflective, and critical or innovative methodologies. Most of the teaching plans gather the emerging tendencies having to do with learning and evaluation activities, although full coherence is not observed in them among the learning results expected, the teaching-learning activities developed and those activities to be evaluated by said results. Most of the curricula reviewed in this study do not make explicit the linearity between skill and the teaching-learning-assessment activities (T-L-E).

Discussion

The R&CT capacity is currently a necessary capacity highlighted, explicitly and narratively, in all the Nursing Curricula reviewed in this research; although it must be specified that they must be expressed through diverse nominations, which permits concluding that the term can be seen as multi-voiced.[9] Likewise, shared interest exists in the curricula on the development and promotion of R&CT in the students, which favors providing formal or therapeutic care to users of nursing services. Big similarities are observed in the institutional perception on the need to develop the R&CT capacity in nursing students, linking it

to clinical judgment, teaching, and research.[13] It has been verified that significant stress exists in the discourse and curricular organization. Incongruence is found and a clear inclination toward the formation of professionals with broad technical skills under a traditional, memory, banking and knowledge accumulation education.[14]

It is interesting to find in the graduation profile of the curricula analyzed statements that describe the formation of nursing professionals committed with the health of the population, development of their discipline, with capacity to construct their own knowledge, take initiative, and solve problems; this implies collecting, interpreting, evaluating, and selecting information for the purpose of making timely decisions [15] on the formation of competitive professionals and with aptitude for team work, assuming responsibly the risks implied by the interdisciplinary professional practice, capable of applying knowledge based on scientific evidence to care for human health with humanistic and bioethical sense, among other indications; however, the contents of the learning units, orientation of the curriculum, the methodology and teaching and learning strategies do not reflect clearly and congruently the achievement of these cognitive, attitudinal, ethical, and humanist skills founded and supported by the development of R&CT.

The social, cultural, health, and educational needs, to mention some, of the person, family, and society together are based on all the curricula reviewed, an aspect not reflected in the internal congruency of the study plan; particularly, in the profession's object of study, its objectives, and the graduate's profile, still privileging a biological, ahistorical, and individual education, although enunciating an integral or holistic formation of the graduate.[16] We believe there is stress or partial incongruence between that consigned in each of the parts that comprise the formal curriculum with the graduate's profile.

Moreover, the gap is often observed between the curricular theory and the pedagogical practice consigned in the majority of the curricula studied. Adaptation of the traditional nursing curriculum to a skills-based curriculum has assumed an important advance for the nursing formation. In the first place, it has mean tan effort of reflection shared by the faculty to become conscious of the new approaches the nursing career must assume, in order to reduce the gap between theory and practice. Integration of contents, coordination among faculty staff, and transversality, as well the orientation toward the professional practice, have been elements present in the reflection carried out. Change is evident in the elaboration of the curriculum, above all in that referring to the orientation by skills and to more creative and innovative teacher methodologies. However, these changes are only evident at explicit curriculum level. When delving into the study of the curriculum, many questions remain unsolved, especially regarding the implicit or hidden curriculum. This poses the question of whether the nursing teachers in the study field are actually carrying out the pedagogical and didactic practices that the new curricular approach suggests in the academic program.[6]

With respect to the teaching, learning, and evaluation strategies, it may be said that these are not only multiple and diverse, but that they do not present full congruence, such is the case, for example, of the "teaching and learning strategy" used by the evidence portfolio and where the "evaluation" section specifies that the activity and the assignment will be graded through a written test of knowledge. We deem it important to reiterate that, during the second decade of the 21st century, formation of nursing professionals must respond in efficient, integral, timely, assertive, and humanistic manner to the demands required by caring for life and maintenance and reestablishment of human health. This is not an easy task, given that the formal care provided by this professional implies the dynamic of growing changes in current university designs and methodologies claim with it implementation of an integrating version and transversal of the contents

to deploy effectively the necessary elements to achieve strengthening the skills a nursing degree graduate must have.

Although it is true that the curriculum orientation is perceived inserted onto the constructivist current, prevalence is still noted in the curricula of technical-instrumental formation characteristic of the positivist biomedical paradigm, known for high percentages of contents with disease-focused biologic clinical character in detriment of contents oriented at health and social critique. The paradigm of the transformation in which we are immersed and which promotes the emancipation of the professionals, is scarcely supported on the formation of new professionals, which proceed and continue to form in a context marked by the repetitive and anachronistic practice of the traditional health culture, where medical paternalism continues expressing the power they maintain in healthcare structures. Nevertheless, it is necessary to highlight the effort by nursing education institutions to adjust the curricula to this new transforming paradigm, in spite of the cultural barriers instituted and which, in many cases is maintained by the care professionals themselves.

It is prudent to remember and recognize that the evaluation should be diagnostic, formative and summative or final, which seeks to use instruments that enable feedback from the educational process, preserving respect for the academic freedom of teachers, by these being autonomous institutions, through traditional evaluation techniques or assignment of research work, essays, case study, elaboration of the nursing process, clinical case, oral exam, self-evaluation, among other forms and strategies, which will grade the domain of *knowing, know-how, and knowing-being,* as general consideration of the curriculum, and *knowing to coexist* for nursing.[9] In spite of the aforementioned, 62% of the curricula analyzed, privilege the traditional evaluation, fundamentally written, which evidences the *objectification* only of knowledge, many times of memory type, where we believe that the principal results are limitation of the students' creativity, autonomy, and self-criticism to measure and assess their academic performance and achievement.

Conclusions

Development and promotion of reflective and critical thinking in nursing professionals is currently essential, given that the epistemological and sociological growth of the nursing profession require professionals with permanent discernment, supported on scientific, ethical, aesthetic, and personal knowledge. Reflection and critique, as learning tools, must be incorporated into the formation of nursing professionals. If learning based on life experiences is so important in nursing, reflection is vital to avoid repeating practices that hinder professional development and affect the quality of service provided by the nursing staff. This type of multi-referred thinking must be one of the essential axes that transform the professional formation and practice and with it the quality of care to users, family, and society, besides achieving higher professional status in nursing.

The results previously indicated permit stating that it is fitting to review and reorient institutional development plans, programs and academic plans, or study plans, fundamentally in what refers to the curricular contents, to develop and promote in the students and future graduates the practice of R&CT, diminishing existing gaps among theoretical formation, professional practice, and care requirements, reestablishing and maintaining health, favoring individual and collective wellbeing indices, especially if the aspiration of public and private universities that offer the nursing degree in Iberian America, consists in forming and contributing an interpretive vision to nursing professionals, through an academic curriculum that goes beyond teaching the diverse functions –granting, education, research, management,

and administration, among others, which will take place around formal or professional nursing care, developing innovative skills. One of the cross-sectional-type curricular axes that must be considered, based on our point of view, is development, implementation, and promotion of R&CT in academic programs and their respective assignments or learning units, which provide nursing professionals the theoretical-practical tools necessary to use this type of thinking in any setting of the labor market they enter, which will enhance their vision, leadership, decision making, autonomy, and social and professional recognition.

The principal limitation noted in a multicenter research of this nature was the collection of information in the different participating countries, to the extent in which, although a document was constructed to obtain data, the interpretations made difficult some aspects of analysis and construction of analysis categories.

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