UNIVERSIDAD
DE ANTIOQUIA
1803

Investigación y Educación en Enfermería

–Nursing Research and Education–

Vol. 36 No1, • February 2018 • ISSNp: 0120-5307 • ISSNe: 2216-0280

UNIVERSIDAD DE ANTIOQUIA
1803

Investigación y Educación en Enfermería

–Nursing Research and Education–

Vol. 36 No1, • February 2018 • ISSNp: 0120-5307 • ISSNe: 2216-0280

Indexed by

MEDLINE
Scopus
SciELO Colombia
SciELO Citation Index in Web of Science
PUBLINDEX
LATINDEX
REDALYC
CUIDEN
LILACS-BIREME
DIALNET
EBSCO Fuente académica
DOAJ
Informe Académico Thomson Gale
ELSEVIER EMcare
ProQuest
Periódica
Ulrich Global Series Directory
Google Scholar

President: Mauricio Alviar Ramírez

Nursing School Dean: Lina María Zuleta Vanegas

Editor in Chief: María de los Ángeles Rodríguez Gázquez

Editorial Board
Clara Aarts; Uppsala University, Sweden
René Mauricio Barría Pailaquilen; Universidad Austral, Chile
Óscar Beltrán Salazar; Universidad de Antioquia, Colombia
Gladys Eugenia Canaval Erazo; Universidad del Valle, Colombia
Neusa Collet; Universidade Federal da Paraíba, Brazil
Carmen de la Cuesta y Benjumea; Universidad de Alicante, Spain
Shaké Ketefian; University of Michigan, United States
Lynda Law Wilson; University of Alabama at Birmingham, United States
Miguel Richart Martínez; Universidad de Alicante, Spain
Ángela María Salazar Maya; Universidad de Antioquia, Colombia
Martha Lucía Vásquez Truissi; Universidad del Valle, Colombia
Cristina García-Vivar; Universidad de Navarra, Spain
José Verdú Soriano; Universidad de Alicante, Spain

Scientific Committee
Clarice Aparecida Ferraz; Universidade de São Paulo, Brazil
Esther Gallegos Cabriales; Universidad Autónoma de Nuevo León, Mexico
José Ramón Martínez Riera; Universidad de Alicante, Spain
José Rafael González López; Universidad de Sevilla, Spain
Manuel Alves Rodrigues; Escola Superior de Enfermagem de Coimbra, Portugal
Rafael Fernández Castillo; Universidad de Granada, Spain
Sonia Semenic; University of McGill, Canada

Editorial Assistant
Nataly Barrientos Palacio
Melissa Barba Bolívar
Johana Andrea Gómez López

Publication date: February 15th 2018.

Short title: Invest. Educ. Enferm.

ISSNp: 0120-5307, **ISSNe:** 2216-0280

Published by: Facultad de Enfermería de la Universidad de Antioquia, Colombia

Contents

Promotion and Enhancement of Knowledge in Nursing

Jhon Henry Osorio-Castaño[1]

Editorial

UNIVERSIDAD DE ANTIOQUIA
1 8 0 3

Knowledge is the product of the action of learning and has as requisite that it can be expressed and communicated to others.(1) According to Fawcett,(2) one of the central issues for the survival of nursing as a discipline is understanding the nature and structure of nursing knowledge. This can be interpreted as the clarity about that which should be investigated, what should be done in the practice, and what should be taught during the formation of professionals. Although research, practice, and formation have been based on the body of knowledge from other disciplines,(3) it is not possible to achieve autonomy and independence in practice, as a given right,(4) if progress is not made in the construction, consolidation, and appropriation of nursing's own knowledge. Hence, to promote the development of nursing knowledge requires three central elements: formation, practice, and research; and each of them transversed by other

---

[1] Nurse, Masters, Ph.D. Candidate. Associated Professor, Universidad Pontificia Bolivariana, Medellín (Colombia).

email: jhon.osorio@upb.edu.co

How to cite this article: Osorio-Castaño JH. Promotion and Enhancement of Knowledge in Nursing. Invest. Educ. Enferm. 2018; 36(1):e01.

DOI: 10.17533/udea.iee.v36n1e01

support elements, like the development and analysis of concepts, the use of medium-range theories, the use of a standardized language, and evidence-based nursing.

The first necessary element is the undergraduate and graduate formation. It gains importance because the learning and teaching processes permit understanding and favoring the appropriation of nursing as a scientific discipline and as an autonomous profession. To achieve this, it is indispensable to support this formation on transversal elements, especially on the use of medium-range theories and of a standardized language. Medium-range theories deal with specific phenomena of the discipline, like – for example – transitions, the maternal role, unpleasant symptoms, self-transcendence, suffering, ailing, comfort, and uncertainty, among many others, that emerge from the practice and return to it in a more elaborate manner. Moreno(5) and Seguel et al.,(6) ratify that the construction of theories, especially the medium-range theories, has been essential for the practice due to the limited number of concepts and because of their great use in understanding specific phenomena of the nursing practice.

Standardized languages are used to document the professional practice, given that they permit comparing and evaluating the effectiveness of the care offered in multiple scenarios of professional performance and provide a tool to communicate what is being done clearly and similarly.(7) For Seguel et al.,(6) and Silva et al.,(8) the nursing process and the use of standardized languages, in spite of having a strong positive influx, favor a work method that contributes to appraising, planning, and evaluating under standards that can guide the practice; besides generating questions on the effectiveness of the nursing interventions that must be strongly adhered to by professionals since the formative processes.

Using a standardized language through a work method somehow defines the knowledge of the discipline and, if used properly, can permit nursing professionals to describe, communicate, investigate, and teach consistently the phenomena concerning the nursing practice and discipline.(9) But achieving undergraduate and graduate formation also requires the formation of the teaching staff. As mentioned by Ramírez et al.,(10) formation in Nursing requires highly trained faculty to promote autonomous learning of their students, the same that will give origin to graduates committed to their self-education, so that as a professional group they assume a leading role in the development of humanity and learn from the classroom to create and participate in a more humane, equitable, and responsible world. This generates another challenge and the curricular structure of the undergraduate and graduate formation programs must respond to many components, like progress in the discipline, the new action domains, national and global population needs, and strengthening of their own knowledge to participate actively in the multidisciplinarity approach.

Strongly linked to the formation, the practice is the soul of a professional discipline. This element is crucial when favoring the development of nursing knowledge, given that it is where the problems or phenomena appertaining to inquiry derived from the discipline are generated; it is also in the practice where it can be seen what nursing is and what its practice supports. As stated by Duran de Villalobos,(11) the practice is accompanied by a system of abstract knowledge, dynamic development, which for its production and modification requires its being supported on daily practice that, in the end, evidences the relevant phenomena and problems of the disciplinary knowledge.

To understand the practice as promotion of nursing knowledge, it is necessary to recur to a mainstreaming element and that is evidence-based nursing, understood as the conscious, judicious, and explicit use of the best scientific evidence available related with nursing knowledge that permits making decisions about care, bearing in mind the patients' preferences and values.(12) It is fundamental in the practice and in the formation to contrast, verify, test, refute, question, and rethink.(6)

Practice and formation of a discipline based on tradition, on intuition, and on the hegemonic power of other disciplines are probably condemned to disappearing. Hence, the emergence of a new connection between formation and formative professional practice in evidence-based nursing; understanding here that the evidence may come about from the generation of concepts, theories or their corroboration, the validation of a standardized language, and – of course – from the use of research results to generate new knowledge and inquiries that contribute to consolidating the practice. Practice that can achieve a balance and a link between the orientation to the task and the procedure and the care of experiences that are not tangible or measurable to facilitate the generation of new concerns, innovative proposals and the permanence of both orientations within a discipline dedicated to bedside baths and to the balance of liquids, as well as to interventions to favor an adaptive system and accompany the transition toward motherhood.(13)

Everything described until now would not be possible without the aid of research. For several authors,(6,10,14,15) research is the motor that drives disciplinary and professional development. It favors the generation, renovation, and consolidation of the discipline's knowledge. It is fundamental for the formation and practice, as well as for the other transverse elements that have already been described. According to Fawcett,(16) Nursing research can be carried out under two perspectives: to generate theory or to test theory, but the author warns that both can be based on a conceptual and theoretical structure of the discipline and it would not be possible if there were no paradigmatic nucleus, as denominated by Fawcett,(17) or some domains of knowledge, as called by Meleis.(18)

It is important to highlight the pertinence of research by identifying the phenomena of the nursing domain. These phenomena can be defined through a single word or in theoretical terms, through a concept. Concepts include an experience that can be identified through observation, cognition, or language.(19) Moreno(5) indicates that the analysis of concepts is the first step for the theoretical development of nursing. Now, research cannot have repercussions upon it, on the formation and practice of Nursing if it is not disseminated. In this sense, the dissemination becomes a more real element of the promotion of the development of nursing knowledge, given that whatever is not published perishes, inexistent. Only that which can be read, shared, socialized will be used in the consolidation of the formation, practice, research, and professional autonomy. The publication of research results, especially in peer-reviewed journals,(20) determines the production of knowledge in a profession,(21) enables the dissemination of new knowledge, and contributes decidedly to scientific progress.(22) Although, as mentioned by Fawcett,(23) local, regional, national, and international conferences are another platform that favors the dissemination of research results in nursing, but do not have the potential of reaching thousands as do serial publications. Another fundamental aspect in research is funding. This is a first-order challenge in nursing, given that – according to Avena(24) – some negligence is noted from funding agencies to offer and disburse resources for nursing research when considering it of low impact.

Finally, everything exposed in terms of factors that contribute to promoting nursing knowledge is condensed in the great autonomy that, in spite of being real according to Legislation 266 of 1993,(25) seems more of an illusion because of all the breaches and disconnections occurring among formation, practice, and research; furthermore, because of all the setbacks found in the medium-range theories – both in the formation, as in the practice and as foundations of research, as well as with the use of a standardized language and evidence-based nursing, ignoring that everything as a whole makes up a structure of knowledge that permits promoting its development and which shields from the consumption of knowledge from other disciplines and from the generation of questionings on the phenomena not appertaining to Nursing.

References

1. Durán MM. Enfermería. Desarrollo teórico e investigativo [Internet]. Bogotá: Universidad Nacional de Colombia; 1998 [cited 18 Feb 2018]. Available from: http://www.uneditorial.net/uflip/Enfermeria-Desarrollo-Teorico-e-Investigativo/pubData/source/Enfermeria-desarrollo-teorico-e-investigativo.pdf
2. Butts JB, Rich KL, Fawcett J. The Future of Nursing: How Important is Discipline-Specific Knowledge? A Conversation with Jacqueline Fawcett. Nurs. Sci. Q. 2012; 25(2):151–4.
3. Durán MM. Teoría de enfermería ¿un camino de herradura? Aquichan. 2007; 7(2):161–73.
4. Tapp D, Stansfield K, Stewart J. La autonomía en la práctica de enfermería. Aquichán. 2005; 5(1):114–27.
5. Moreno ME. Metodologías para la aplicación del conocimiento teórico de enfermería. Aquichan. 2012; 12(2):95–6.
6. Seguel-Palma FA, Valenzuela-Suazo S, Sanhueza-Alvarado O. Corriente epistemológica positivista y su influencia en la generación del conocimiento en enfermería. Aquichan. 2012; 12(2):160–8.
7. González J. Application of nursing diagnoses in the field of occupational health. Examples of nurse prescribing. Med. Segur. Trab. 2010; 56(221):328–46.
8. Silva NCM, Oliveira ARS, Carvalho EC. Knowledge produced from the outcomes of the “Nursing Outcomes Classification - NOC”: integrative review. Rev. Gaúcha Enferm. 2015; 36(4):104–11.
9. Weir-Hughes D. Valuing the knowledge of nursing: naming it and making it visible. J. Clin. Nurs. 2016; 25(13–14):1787–8.
10. Ramírez NA, Quintana MO, Sanhueza O, Valenzuela SV. El paradigma emancipatorio y su influencia sobre el desarrollo del conocimiento en Enfermería. Enferm. Glob. 2013; 30:410–21.
11. Durán MM. La renovación del conocimiento y la práctica. Aquichan. 2014; 14(1):5–6.
12. Alcolea MT, Oter C, Martín Á. Enfermería Basada en la Evidencia. Orígenes y fundamentos para una práctica enfermera basada en la evidencia. NURE Investig. 2011; 52:1–7.
13. Fawcett J. On bed baths and conceptual models of nursing. J. Adv. Nurs. 2003; 44(3):229–30.
14. de la Cuesta C. La investigación cualitativa y el desarrollo del conocimiento en enfermería. Texto Contexto-Enferm. 2010; 19(4):762–6.
15. Vanegas BC. La investigación cualitativa: un importante abordaje del conocimiento para enfermería. Rev. Colomb. Enferm. 2011; 6(6):128–42.
16. Fawcett J. Using the Roy Adaptation Model to Guide Research and / or Practice: Construction of Conceptual-Theoretical-Empirical Systems of Knowmledge. Aquichan. 2009; 9(3):297–306.
17. Fawcett J. Contemporary Nursing Knowledge. Davis Company; 2005.
18. Meleis AI. Theoretical Nursing. Development & Progress. 5th Ed. Wloters Kluwer; 2012.
19. Walker L, Avant K. Strategies for Theory Construction in Nursing. Prentice Hall; 2011.
20. Palese A, Coletti S, Dante A. Publication efficiency among the higher impact factor nursing journals in 2009: A retrospective analysis. Int. J. Nurs. Stud. 2013; 50(4):543–51.
21. Arzuaga MA, Correa AH, Florez-Torres IE. Production of knowledge in the master’s program in collective health of the faculty of nursing at Universidad de Antioquia, 1996-2013. Invest. Educ. Enferm. 2015; 33(2):206–16.
22. López-Torres Hidalgo J, Basora Gallisà J, Orozco Beltrán D, Bellón Saameño JÁ. Mapa bibliométrico de la investigación realizada en atención primaria en España durante el periodo 2008-2012. Aten. Prim. 2014; 46(10):541–8.
23. Fawcett J. Tendencias de Investigación en Enfermería. Aquichan. 2014; 14(3):289–93.
24. Avena MJ, Barbosa DA. La producción del conocimiento y las estrategias para incorporación de los resultados a la práctica de enfermería. Rev. Gauch. Enferm. 2016; 37(esp):e71866):12–3.
25. Congreso de la República de Colombia. Ley 266 de 1996 Por la cual se reglamenta la profesión de Enfermería en Colombia y se dictan otras disposiciones. Diario Oficial 42.710; 1996.

The impact of chronic kidney disease: experiences of patients and relatives from the extreme north of Brazil

Original article

Maria Virgínia Filgueiras de Assis Mello[1]

Margareth Angelo[2]

UNIVERSIDAD DE ANTIOQUIA
1803

The impact of chronic kidney disease: experiences of patients and relatives from the extreme North of Brazil

Objective. To identify the impact of chronic kidney disease on patients and their families. **Method.** This is a qualitative study conducted by the theoretical and methodological reference of Symbolic Interactionism and Narrative Research. The scenario of the study was the State of Amapá, in the extreme north of Brazil. Semi-structured interviews were conducted with 15 patients who experienced hemodialysis therapy and 16 family members. **Results.** The thematic analysis of the narratives resulted in the identification of two themes: life before the disease and life invaded by the disease. **Conclusion.** The diagnosis of chronic kidney disease and the need undergo hemodialysis emerged as a source of intense suffering, affecting the daily lives of the families as a whole and causing physical, psychological and social damages.

Descriptors: renal insufficiency, chronic; renal dialysis; qualitative research.

[1] Nurse, Ph.D. Adjunct Professor, Federal University of Amapá-UNIFAP. Macapá-AP, Brazil.
email: virginia@unifap.br

[2] Nurse, Ph.D. Full Professor, Department of Mother Child Nursing and Psychiatric Nursing, School of Nursing, University of São Paulo - EEUSP. Sao Paulo-SP. Brazil.
email: angelm@usp.br

Article linked to the research: The other face of the disease: understanding the overcoming experienced by chronic kidney patients and their relatives in the state of Amapá.

Conflicts of Interest: None.

Received: April 19th, 2017.

Accepted: October 3rd, 2017.

How to cite this article: Mello MVFA, Angelo M. The impact of chronic kidney disease: experiences of patients and relatives from the extreme North of Brazil. Invest. Educ. Enferm. 2018; 36(1):e02.

DOI: 10.17533/udea.iee.v36n1e02

Investigación y Educación en Enfermería
–Nursing Research and Education–
UNIVERSIDAD DE ANTIOQUIA 1803
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

Impacto de la enfermedad renal crónica: experiencias de pacientes y sus familiares del extremo Norte de Brasil

Objetivo. Identificar el impacto de la enfermedad renal crónica sobre el paciente y su familia. **Método.** Estudio cualitativo conducido por el referencial teórico metodológico del Interaccionismo Simbólico y de la Investigación Narrativa. El escenario del estudio fue el Estado de Amapá, localizado en el extremo Norte de Brasil. Se realizaron entrevistas semiestructuradas a 15 pacientes con experiencia en terapia de hemodiálisis y a 16 familiares. **Resultados.** El análisis temático de las narrativas identificó dos temas: la vida antes de la enfermedad y la vida invadida por la enfermedad. **Conclusión.** El diagnóstico de la enfermedad renal crónica y la necesidad de realizar hemodiálisis son experiencias generadoras de intenso sufrimiento, que afecta el cotidiano de la familia como un todo y que causa daños físicos, psicológicos y sociales.

Descriptores: insuficiencia renal crónica; diálisis renal; investigación cualitativa.

The impact of chronic kidney disease: experiences of patients
and relatives from the extreme north of Brazil

O impacto da doença renal crônica: experiências de pacientes e familiares do extremo Norte do Brasil

Objetivo. Identificar o impacto da doença renal crônica sobre o paciente e sua família. **Método.** Estudo qualitativo, conduzido pelo referencial teórico metodológico do Interacionismo Simbólico e da Pesquisa Narrativa. Teve como cenário o Estado do Amapá, localizado no extremo Norte do Brasil. Entrevistas semiestruturadas foram conduzidas com 15 pacientes que vivenciam a experiência da terapia hemodialítica e 16 familiares destes. **Resultados.** A análise temática das narrativas resultou na identificação de dois temas: a vida antes da doença e a vida invadida pela doença. **Conclusão.** O diagnóstico da doença renal crônica e a necessidade de realizar hemodiálise se configuraram como uma experiência geradora de intenso sofrimento, que afeta o cotidiano da família como um todo e causa danos de ordem física, psicológica e social.

Descritores: insuficiência renal crônica; diálise renal; pesquisa qualitativa.

Introduction

While reflecting on the global health context, a study(1) highlights chronic diseases as a challenge to the global health policy of the 21st century. Chronic diseases are likely to soon become a global epidemiological archetype and this has multiple repercussions on the quality of life and productivity of people. Within this perspective, the present study focus on chronic kidney disease (CKD), a disease that leads to progressive and irreversible loss of renal function and has multiple causes and varied prognostic factors. It is a long-term, insidious and asymptomatic disease in most of the of its evolution.(2)

It should be noted that until 1965, many CKD patients worldwide would progress to the final stages of the disease and die. The high mortality rate was associated with limitations in the treatment of renal disease and the extremely high costs of the usual treatment. Then, in 1972, a federal program to support dialysis and kidney transplantation, called *Medicare*, was launched in the United States. Since then, renal replacement therapy, dialysis and transplantation, as treatment options for patients who progressed to end-stage renal disease, proliferated in the public and private health network, and from that moment on, the treatment of CKD has received increasing attention from the scientific community, as demonstrated by population studies conducted in different countries.(2-4) Among the modalities of renal replacement therapy, hemodialysis has as a peculiarity the fact that it has to be permanent, including periodic dialysis sessions, restricted liquids intake, and use of medications. This treatment contributes to increase the patients' life length, but on the other hand has physical, psychological and social implications that impact their quality of life, as well as that of their families.

A research of national and international literature between the years 2010 and 2015 revealed a plethora of studies reporting the experience of CKD in a fragmented way and from the perspective of sick individuals.(5-9) However, few studies have investigated this experience the perspective of the patient's family. In view of this, this article aimed to identify the impact of CKD on patients and their families. Considering that CKD and hemodialysis therapy are not widely known in the popular media, this contributes to a better understanding of the challenges and adversities that patients and their families face as a result of CKD. This study also aims to encourage nurses in the interest to intervene in the suffering of families, through the establishment of a relationship of trust that favors acceptance, adaptation to lifestyle changes and treatment adherence.

Methods

In view of the object of this study, a qualitative approach was chosen because it is appropriate to explore subjective aspects and meanings that people attribute to their experiences.(10) Symbolic Interactionism was adopted as theoretical reference and represented the "lens" to guide this study.(11) Narrative research was adopted as methodological reference and made it possible to understand the experience "in a process of collaboration between researcher and researched subject.(12) The context of the study was the State of Amapá, one of the 27 federative units in Brazil. It is the penultimate state in the country in terms of population size, with approximately 766 679 inhabitants distributed in 16 municipalities.(13) Amapá has the Tumucumaque Mountains National Park, one of the largest in the world, with almost 3.9 million hectares, and of great relevance because it presents a high number of endemic species and different ethnic groups in its surroundings: indigenous peoples, riverside dwellers and chestnut farmers. Its capital city, Macapá, the only Brazilian capital cut by the Equator Line, is located along the Amazon River and has no road or railroad connection with other Brazilian capitals, and thus the access is only possible by river or air.

A previous contact between the researcher and the participants of the study in the Nephrology Unit of Macapá was established during a period of ten days. The systematically planned insertion in the hemodialysis environment allowed a more careful look at the context, the approximation with the patients and the identification of patients who met the selection criteria. The selection of participants was intentional and they had to meet the following criteria: to undergo hemodialysis for at least six months, to live in the Capital or in a neighboring municipality, to be over 18 years of age and to be physically and psychologically able to respond to the interview. Participating relatives were indicated by the patients themselves, taking into account those who were involved in their care and routines regarding the disease and hemodialysis treatment since the initial phase. The selection criteria for the relatives were: to be over 18 years of age, to live in the same house as the patient and to be available to respond to the interview.

The invitation to participate in the study was made personally by one of the researchers to 19 patients. Among them, one had no interest in participating in the study and there were successive mismatches in three cases that made the interviews impossible. Thus, the population consisted of 15 patients and 16 family members who had their participation formalized by signing the Informed Consent Term. The meeting with the participants occurred simultaneously with patients and relatives and began with the elaboration of a family genogram including three generations, which enabled the collection of data about relationships over time and health, occupation, religion, ethnicity, and migration.(14,15) A family form, an instrument developed by the researchers to list sociodemographic and clinical data of the participants, was then filled out. Finally, the semi-structured interview was the strategy adopted to access the narrative of the participants. The interviews were audio recorded for an average of 40 minutes, and were held between October 2014 and January 2015 at the participants' home, at previously scheduled dates and times. There was a need to resume the interviews with two families to better deepen the phenomenon studied.

Data were submitted to thematic analysis of the narratives by the researchers without using any professional software and contemplated six phases: verbatim transcription and strenuous re-readings, generation of initial codes, elaboration and refinement of themes, final definition of themes and production of the report.(16) In order to guarantee the confidentiality of the participants' identity, the identification "P" was used for the patients' narratives and "F" for the family members' narratives, followed by the number of the order in which the interviews took place. This study respected the ethical aspects of Resolution 466/12 and was approved by the Ethics and Research Committee of the Federal University of Amapá (Opinion N. 810.907).

Results

This study was represented by 15 patients and 16 relatives: nine wives, three mothers, three daughters and one ex-husband, aged between 23 and 83 years. The hemodialysis time ranged from 1 to 16 years. Based on the participants' narratives, two thematic units were created and revealed the impact brought about by CKD and the need for hemodialysis on the lives of patients and their families.

Life before the disease

Before the disease, life was filled by the typical chores of an active, independent and responsible person, a family provider. Independence, freedom, and physical disposition were elements that were part of the life before the disease; as for health problems, they did not exist or did not have priority in their daily lives.

Work had a central place in people's daily lives and was consistent with their possibilities, their geographical context and the demands of their families. Working used to confer a sense of freedom and power, especially when involved activities developed in the countryside: *I used to work in the countryside, we lived in the countryside, and my profession was to work as a cowboy, in the farm ... riding a fighting bull, a horse* (P1). As small landowners or employees of rural properties, generally outside the capital, they worked in a system of family labor, performing all kinds of activities related to planting, caring and management of animals, extraction of wood and everything else that was necessary for the maintenance and preservation of the family business. As it is typical of field work, the activities usually involved heavy work; they took long journeys, almost from the dawn to the sun set, and required a lot of physical vigor and disposition: *then he was employed on a farm. I went there, but it was 5 km from the roadside. And it was heavy, it was in the field, he would carry weighty stuff ... we would go to the field, and do everything!* (F1). *He worked in the countryside, used to cut wood with a chainsaw* (P6). Besides the work in the field, the work activities included occupations in the industrial sector; despite such full day of activities, there were no difficulties, and physical vigor was evident: *I used to work hard, I would got up at four o'clock in the morning to work and arrive at ten at night every day, from Sunday to Sunday, I had no difficulties with myself. When it was time to leave at 5:00 PM, the boss in charge used to ask who wanted to work overtime, and I always stayed, I would only leave at 9:00 p.m., and I would only get home at 10:00 p.m., because my house was far away. I had much energy; I could not stand having nothing to do* (P9). Therefore, a working and untiring life and without limits was the way how patients and their families used to feel before the illness.

Life invaded by the disease

It is in this context of life that the initial symptoms of CKD emerge. When these were manifested, they were usually attributed to some fatigue resulting from the intense work they performed, or went unnoticed, or considered as a minor and irrelevant issue, at least at that time. They could not stop their lives to care for something seemingly unimportant.

To the extent, they faced every day life, the symptoms of the disease arose, but they were interpreted by the patients as something that could not kill them, thus, not a reason for concern. Despite their feelings that something was different in their physical condition and vitality, they would not mention this, and would or postpone the doctor's appointment. The idea that something could be wrong with their health would go against their self-image, and therefore they did not complain or bother to investigate signs of changes in their health: *I began to feel some pains in my hip and my wife would urge me to go to Macapá, for me to see a doctor. But I'd say, 'No, that's nothing, this is not for me', because I was of that type, brave in my job, you know. For me, nothing could make me wave here and there* (P1). *He did not say anything; he did not complain about* *anything, he never complained about anything. The exams he did began to show many problems. The doctor was warning him, but he did not care ...* (F8). *But a few days ago, I was feeling a bit tired, you know, but I did not take it seriously ... I thought it was because of work, something I had done, I would wash the clothes and feel very tired. Then I would say, 'No, this is nothing'. I imagined it was nothing. Then I could actually even feel something, but I did not take it into account, I let it pass, I did not take any tests...* (P13). In this way, the context of an active, independent life brimming with physical disposition began to be threatened. Some symptoms, previously unnoticed or neglected, progressed, got exacerbated and gained amplitude, interfering in or even making it impossible to carry out daily work and daily activities without any impediment: *I began to enter a process of swelling, my whole body swelled, I started to have orientation problem, I started to lose consciousness* (P3); *I had trouble getting around to certain places, because I could not even walk, because my kidneys were in pain. I could only walk if there was a car, it was not even because of the sight, because the lack of vision also disturbs, but it was because of the kidneys, when I walked, they would hurt, and I would feel tired* (P4).

Therefore, due to the silent nature of CKD in its early stages, along with the lack of preventive health behaviors, the disease progresses over time unnoticed. As health problems start to exert a greater impact on the patients' daily lives, they could not be ignored any longer. The situation becomes unsustainable, requiring attention and care. The search for health care for the purpose of maintaining or restoring health becomes, therefore, a priority: *my wife took me to the hospital, I spent four days in the hospital. In those four days I was debilitated, you know? So they requested my transfer to Macapá* (P11). The series of health problems that affected the patients culminated in the definitive diagnosis of CKD: *he did that exam that detected that he had only 15% of the functioning of the kidneys and there was also an ultrasound that detected that his both kidneys were already withering, compromised, and it was already time for him to start doing hemodialysis, immediately, before lost everything* (F8) *... I spent five days in coma, when I woke up I had already a catheter in my leg. I had a hemodialysis machine in the ICU and dialysis there. After two days, they took me to the infirmary and gave me the information that I would have to continue doing hemodialysis* (P6). The shocking reality of initiating dialysis shows how such a treatment has the potential to shake people. Regarding the behavioral aspect of how patients and their families were affected by this situation, there was a variety of distressing feelings: *it was a very difficult situation for us, the whole family was impacted. My mother-in-law was so shaken by her son's illness that, in fact, it looked as if she had aged about ten years when she heard the news. She was in a very painful state to this day. Because sometimes you think you're strong, but you're not.* (F2). *The whole family was very sad, because nobody expected this, that he would end up like this, depending on a machine (F15). For me, it was a shock ... Because I did not accept it. I saw the suffering of the person there, so I did not want to accept it, I did not even want to let them do the fistula* (P6).

Concomitantly, the way of perceiving or interpreting the diagnosis of CKD was even more desperate, due to the previous coexistence with the family member who now experienced hemodialysis because of the renal disease. Putting oneself in the other's place would trigger emotional reactions, what is strongly suggested by the knowledge of the condition previously experienced by others. For this reason, the perception of the dialysis treatment experienced by other person inevitably burst into the concept of pain, invasive procedures and the finitude of life: *everyone fell into despair ... because we already had an uncle of her who had died for a kidney problem, so we were already aware of the routine. She especially because she lived with the uncle who was a chronic renal patient, she worked in his house. So we already had an idea of what was involved*

(F13). *I was desperate, because it's one thing to see someone doing hemodialysis, and another is seeing oneself one day in that same situation. The only think I thought was that I was going to die, because my uncle had died from this... and my youngest son was only one year old. So I cried a lot. My God! Why me? So many bad people in the world, why did this happen to me?* (P13). In that direction, the emotional and social impact of CKD on patients and their families is unquestionable, challenging them to deal to a lesser or greater extent with many stressful and adverse circumstances.

Discussion

To identify the impact of CKD on the lives of patients and their families, it was necessary to understand how their lives were and the perception they had of themselves. **Life before the disease** portrayed the peculiarities of the lives of patients and their families before CKD, revealing that life and family roles had their own habitual dynamics, based on a healthy family functioning, in which work represented the central focus of their motivations. In several areas of knowledge, studies have shown that, throughout the civilization process, work holds an important place in society, as it is one of the main scenarios in human life, intervening in its insertion in society, demarcating spaces of social mobility and representing a constitutive factor of the identity and sense of accomplishment of people.(17,18) Furthermore, employment during productive ages is an important factor that influences the quality of life.

Nevertheless, there is a complex and multifaceted relationship between work and health;(19) when work activities are carried out under strenuous or inadequate conditions, this may result in damage to health and reduced ability to work. Considering that disease prevention is guided by actions to detect, control and mitigate risk factors,(20) in this study, the sense and meaning attributed to work, which was to provide for family demands, led the manifestations of the disease to be neglected, as well as the search for preventive medical care.

The advent of the CKD, as explained in the theme **the life invaded by the disease**, integrated the first signs of an illness that was progressively expressing signs and that culminated in the diagnosis of irreversible deterioration of renal function. In view of this reality, the need for hemodialysis was an imposition that could not be changed, at the same time that it represented the only alternative for prolonging the patients' lives. At this stage of the experience, reactions to diagnosis and treatment emerged quite expressively, revealing intense suffering, as a source of stress and repercussions that affected the emotional, personal, family and socioeconomic life, and that required the incorporation of new habits and the adaptation of family in roles. Despite scientific and technological advance in recent decades, the psychosocial burden generated by CKD to patients and their families is significant. They face the situation of having to live with a serious and persistent condition, with cumulative effects and multiple factors of stress,(21) that make the adaptation to a chronic disease a complex process.(23)

It should be noted that the symptoms and complications associated with chronic health conditions are often unpredictable and trigger changes of physical nature, as well as in the daily life of patients. Individuals need to find ways to deal with CKD and with all the changes and limitations caused by the disease.(23-25) Thus, the interaction established through listening and welcoming from the part of the health team represents an important factor to assist the coping of the and the family and the acceptance of the treatment, promoting more security and emotional stability for chronic renal patients and their families.

Conclusion

This study identified that the diagnosis of CKD and the need to undergo hemodialysis were seen as an experience that generated intense suffering, affecting the daily life of the families as a whole and causing physical, psychological and social damages. In this context it is notable that when CKD affects a family member, the family unit requires attention for the proper functioning and readjustment of all. For this reason, identifying the impact of CKD on the life of patients and their families brings into discussion other dimensions of care not only related to the pathophysiology and its control, but also to help the family deal with the disease, accept the limitations, adhere to treatment, adapt and carry on life in a positive way. It should be emphasized that in this study the data are based on patients' and family members' reports in a specific context, and there is therefore a need to expand the research to other geographical contexts.

References

1. Nugent RA, Fathima SF, Feigl AB, Chyung D. The Burden of Chronic Kidney Disease on Developing Nations: A 21st Century Challenge in Global Health. Nephron. Clin. Pract. 2011; 118:c269–c277.
2. Bastos MG, Kirsztajn GM. Chronic kidney disease: importance of early diagnosis, immediate referral and structured interdisciplinary approach to improve outcomes in patients not yet on dialysis. J. Braz. Nefrol. 2011; 33(1):93-108.
3. Retting RA. The social contract and treatment of permanent renal failure. J. Am. Med. Assoc. 1996; 274:1123-26.
4. Jha V, Garcia-Garcia G, Iseki K, Li Z, Naicker S, Plattner B, et al. Chronic kidney disease: global dimension and perspectives. Lancet. 2013; 382:260-72
5. Barreto MS, Marcon SS. Doença Renal Crônica: vivências e expectativas do cuidador. Rev. Enferm. UERJ. 2012; 20(3):374-9.
6. Makaroff KS, Sheilds L, Molzahn A. Symbolic representations of living with chronic kidney disease. Nephrol. Nurs. J. 2013; 40(6):517-26.
7. Bayhakki, Hatthakit U. Lived Experiences of Patients On Hemodialysis: A Meta-Synthesis. Nephrol. Nurs. J. 2012; 39(4):295-305.
8. A, Henning P, Wong G, McTaggart S, Mackie F, Carroll R. et al. Experiences and Perspectives of Adolescents and Young Adults With Advanced CKD. Am. J. Kidney Dis. 2013; 61(3):375-84.
9. Al-Ghabeesh S, Suleiman K. The Lived Experience of Patientes with End Stage Renal Disease on Hemodialysis: A Phenomelogical Study. Int. J. Med. Med. Sci. 2014; 47(1):1423-29.
10. Denzin NK, Lincoln YS. Introduction: The discipline and practice of qualitative research. In: Denzin NK, Lincoln YS, Editors. The Sage handbook of qualitative research. 4th ed. Thousand Oaks, CA: Sage; 2011; P.1-19.
11. Blumer H. Simbolic interactionism: perspective and method. Berkeley: University of California; 1969.
12. Clandinin DJV, Connelly FM. Narrative inquiry: experience and story in qualitative research. San Francisco: Jossey-Bass; 2000.
13. Instituto Brasileiro de Geografía e Estatística. Estimativa de população; 2017 [cited 3 Oct 2017]. Available from: http://ibge.gov.br/estadosat/perfil.php?sigla=ap
14. Wright LM, Leahey M. Enfermeiras e famílias: um guia para a avaliação e intervenção na família. São Paulo, 5th ed. Roca; 2012.
15. Leonidas C, Santos MA. Relações familiares nos transtornos alimentares: o Genograma como instrumento de investigação. Cien. Saude Colet. 2015; 20(5):1435-47.
16. Braun V, Clarke V. Using thematic analysis in psychology. Qual. Res. Psychol. 2006; 3(2):77-101.
17. Morin EM. Os sentidos do trabalho. RAE - Revista de Administração de Empresas. 2001; 41(3):8-19.
18. Lourenço CDS, Ferreira PA, Brito MJ. O significado do trabalho para uma executiva: a dicotomia prazer e sofrimento. Organizações em contexto. 2013; 9(17):247-79.
19. Rotenberg L, Griep RH, Fischer FM, Fonseca MJ, Landsbergis P. Working at night and work ability among nursing personnel: when precarious employment makes the difference. Int. Arch. Occup. Environ. Health. 2009; 82(7):877-85.
20. Starfield B. Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia. Brasília: UNESCO; 2002.

21. Walsh F. Fortalecendo a resiliência familiar. São Paulo: Roca, 2005.
22. Rudnicki, T. Doença renal crônica: vivência do paciente em tratamento de hemodiálise. Contextos Clínic. 2014; 7(1): 105-16.
23. Bertolin DC, Pace AE, Kusumota L, Haas V. An association between forms of coping and the socio-demographic variables of people on chronic hemodialysis. Rev. Esc. Enferm. USP. 2011; 45(5):1070-76.
24. Alnazly EK. Burden and coping strategies among Jordanian caregivers of patients undergoing hemodialysis. Hemodial. Int. 2016; 20:84-93.
25. Velázquez PY, Espín AM. Repercusión psicosocial y carga en el cuidador informal de personas con insuficiencia renal crónica terminal. Rev. Cubana Salud Pública. 2014; 40(1):3-17.

Dehumanization during Delivery: Meanings and Experiences of Women Cared for in the Medellín Public Network

Original article

UNIVERSIDAD
DE ANTIOQUIA
1803

Cristina María Mejía Merino[1]
Lida Faneyra Zapata[2]
Diana Patricia Molina Berrio[3]
Juan David Arango Urrea[4]

Dehumanization during Delivery: Meanings and Experiences of Women Cared for in the Medellín Public Network

Objective. This work sought to describe the meanings constructed in the experiences of women in relation to the care received by the healthcare staff at the moment of delivery. **Methods.** Qualitative study using the procedures proposed by the Grounded theory for data analysis. The sample comprised 18 women over 14 years of age, between 40 days and 6 months postpartum. Twelve of the participants were selected through convenience and to reach saturation of the categories, six more participants were included by using theoretical sampling. Semi-structured interviews were conducted in three information collection phases, and said interviews were analyzed line by line by using coding and categorization techniques. **Results.** The mothers described the parturition experience negatively, perceiving it as the implicit imposition of stoicism to repress their emotions, pain, and discomfort

---

[1] Nutritionist and Dietitian, Masters. Professor, Universidad de Antioquia, Colombia.
email: cristinamejagmail.com

[2] Anthropologist. Universidad de Antioquia, Colombia.
email: persefone.luna@hotmail.com

[3] Psychologist, Masters, Ph.D. candidate. Universidad de Antioquia, Colombia.
email: dpatricia.molina@hotmail.com

[4] Nurse, Masters. Clínica el Rosario and Universidad de Antioquia, Colombia.
email: paterdas@yahoo.es

Article linked to the research: Meanings of players involved at the moment of the delivery, on the relations established during care in some health services of the public network of the city of Medellín".

Conflicts of Interest: None.

Received: May 24th, 2017.

Accepted: October 3rd, 2017.

How to cite this article: Mejía CM, Faneyra L, Molina DP, Arango JD. Dehumanization during Delivery: Meanings and Experiences of Women Cared for in the Medellín Public Network. Invest. Educ. Enferm. 2018; 36(1):e03.

DOI: 10.17533/udea.iee.v36n1e03

and prefer an attitude of submission to the health staff. The participating mothers critically conjure up the care received, which translates into procedures performed and verbal and psychological abuse. **Conclusion.** The mothers assign meanings to their experiences of the delivery process not so much as a transcendent human experience, but rather as a super-experience to the dehumanization of giving birth within the biomedical context.

Descriptors: dehumanization; humanizing delivery; parturition; health personnel; women; qualitative research.

La deshumanización en el parto: significados y vivencias de las mujeres asistidas en la red pública de Medellín

Objetivo. Describir los significados construidos a partir de la experiencia vivida por mujeres en relación con la atención recibida por parte del personal asistencial en el momento del parto. **Métodos.** Estudio cualitativo que utilizó los procedimientos propuestos por la Teoría Fundada para realizar el análisis de los datos. La muestra estuvo compuesta por 18 mujeres mayores de 14 años, entre 40 días y seis meses de postparto. Doce de las participantes se seleccionaron por conveniencia, y para llegar a la saturación de las categorías, se incluyeron otras seis participantes usando el muestreo teórico. Se realizaron entrevistas semiestructuradas durante tres fases de recolección de información, las cuales se analizaron línea por línea, utilizando técnicas de codificación y categorización. **Resultados.** Las madres describieron la experiencia del parto de forma negativa, pues la perciben como la imposición implícita del estoicismo para reprimir sus emociones, dolor e incomodidad y prefieren una actitud de sometimiento frente al personal de salud. Las madres evocan la asistencia recibida de manera crítica, la cual se traduce en procedimientos realizados sin consentimiento y maltrato verbal y psicológico. **Conclusión.** Las madres asignan significados a sus vivencias del proceso de parto no tanto como una experiencia humana trascendente, sino más bien como una supervivencia a la deshumanización del dar a luz en el contexto biomédico.

Descriptores: deshumanización; parto humanizado; parto; personal de salud; mujeres; investigación cualitativa.

A desumanização no parto: significados e vivências das mulheres atendidas na rede pública de Medellín Colômbia)

Objetivo. Descrever os significados construídos na experiência vivida das mulheres em relação com a atenção recebida por parte do pessoal assistencial no momento do parto. **Métodos.** Estudo qualitativo que utilizou os procedimentos propostos pela Teoria fundada para realizar a análise dos dados. A amostra foram 18 mulheres maiores de 14 anos, entre 40 dias e seis meses de pós-parto. Doze das participantes foram selecionadas por conveniência, e para chegar à saturação das categorias, se incluíram outras seis participantes usando a amostragem teórico. Se realizaram entrevistas semiestruturadas durante três fases de recolhimento de informação, as quais se analisaram linha por linha, utilizando técnicas de codificação e categorização. **Resultados**. As mães descreveram a experiência do parto de forma negativa, a percebem como a imposição implícita do estoicismo para reprimir suas emoções, dor e incomodidade e preferem uma atitude de submissão perante ao pessoal da saúde. As mães evocam a assistência recebida de maneira crítica, a qual se traduz em procedimentos realizados e maltrato verbal e psicológico. **Conclusão.** As madres designam significados as suas vivências do processo de parto no tanto como uma experiência humana transcendente, senão melhor como uma supervivência à desumanização de dar a luz no contexto biomédico.

Descritores: desumanização; parto humanizado; parto; pessoal de saúde; mulheres; pesquisa qualitativa.

Introduction

The birth or arrival of a new life may be contemplated in our everyday lives as an event framed within the plane of what is "natural". We resort to the notion that women are in the capacity to reproduce, however, the manner or practices used during delivery tend to always be object of questionings, and may suggest the need for women to obtain expert intervention during this process. But, if we understand labor as a bio-cultural phenomenon,(1) where diverse ways of representing and signifying it are constructed, the care model and the praxis during this moment remain subjected to a specific time and context, reflecting the beliefs and structural principles of each society. Thus, globally, different ways of experiencing and caring for the delivery have been registered.

In the health services of the public network of the city of Medellín, the birth care model is inscribed in biomedicine or, as denominated by anthropologist Floyd(2) in a technocratic model of reproduction. It is characterized by separating the body and mind and by using the metaphor of the body as a machine, which permeates and conditions relations between physicians and patients. The possible causes of this phenomenon are articulated in a complex framework of power relations, expressed in discrimination and social and gender inequality endured by women in labor, experienced specially by those from the most impoverished socioeconomic levels. This phenomenon is also attributed to the precariousness of the health system, where long work shifts are common, along with the lack of supplies, propitiating low-quality practices in obstetric care, which derives into medical negligence and, as a last consequence, into expressions of institutional violence.(3)

Colombia has only recently begun to recognize this problem and, since 2010, obstetric violence is mentioned as a way of infringing the rights of women in the country, without existing a clear recognition on the theme(4) that is, legally typified as in other Latin American countries. Likewise, insufficient evidence exists to document this problem in Colombia and, particularly in Medellín. It should be noted, for the sake of accuracy and avoiding negative generalizations on the work of the health professionals who care for pregnant women that somehow the aforementioned describes what takes place in each and every one of the deliveries, but it does correspond to a close description of a phenomenon quite extended in obstetrics and gynecology services in the city, according to that gathered in the testimonies provided by the mothers interviewed. Evidencing the existence of obstetric violence in health services and the women's ignorance of their rights at the moment of delivery, will provide very valuable information to question a practice that apparently has been accepted by society as a whole and which goes against the wellbeing and dignity of the women, children, and their families. The aim of this study was to describe the meanings constructed in the experience lived by the women in relation to the care received by the healthcare staff during delivery.

Methods

A study with qualitative approach was conducted by using the procedures proposed by the Grounded theory to analyze the data.(5) Of the total number of mothers participating in the study, 18 complied with the inclusion criteria of being over 14 years of age, receiving parturition care in a health service of the public network of the city of Medellín (Colombia) and who had between 40 days and 6 months of postpartum. On average, the participants had complete high school educational level, belonged to a middle-low socioeconomic level, most had no work income, and were economically dependent on their spouses or their parents. Initially, the sampling was conducted through convenience and to reach the saturation of categories, the theoretical sampling was used; there was no prior relation with the study participants. The snow-ball technique was used to contact the mothers, that is, the first informants, who were contacted through direct approach, led us to other participants, who were called via telephone. None of the mothers contacted refused to participate or abandoned the investigation. To collect information, semi-structured interviews were applied to the mothers in three phases: the first applied eight, the second six, and the last applied four interviews to complete a total of 18 interviews. Each interview lasted an average of one hour and were not repeated to any of the participants; some were carried out in their homes and in public places and most of the encounters had the presence of close relatives. Each of the phases conducted an exploratory study to fine-tune the instruments designed. Informed consent forms were signed and the interviews were recorded after approval by the mothers. Finally, the interviews were transcribed after a brief period, and these were not returned to the participants for comments and/or corrections. Data collection began in August 2016 and ended in November of the same year.

Data analysis used coding and categorization techniques proposed by the Grounded theory. This called for a thorough examination of the data, that is, a line-by-line analysis of the interview texts and groupings were created that responded to the initial categories and to those emerging from the mothers' discourse, which permitted refining and constructing a second instrument. The data collected from the second application were analyzed through axial coding, which permitted nourishing the descriptive categories and start to identify possible relations among some of them, configuring some analytic categories. These last served as starting point to construct the last instrument, used to inquire on the voids still shown by the analytic categories in their content. This third information group was analyzed through selective coding, finally feeding the interpretative categories. From the comprehensive analysis of these last categories, a paradigmatic matrix was created that permitted establishing links among them and understanding more integrally the study phenomenon.

Four researchers participated in manually coding the data without using any software. The researchers were a male Nursing professional, a female Nutrition and Dietetics professional, and two female professionals from the Social area: Psychology and Anthropology; the first three had Masters degrees in Public Health and currently work as professors and researchers of the National Faculty of Public Health and are part of the group on mental health, GISAME, which is interested in and has worked on the theme of sexual and reproductive rights and has been trained in humane delivery. The study was governed by the ethical principles of resolution 8430 of 1993 by the Ministry of Health. The research was considered of minimum risk and was evaluated by the ethics committee of the National Faculty of Public Health at Universidad de Antioquia. The information the participants received about the researchers is that these were university professors, students, and researchers, interested in inquiring on the conditions in which deliveries are cared for in the health services. The participants signed an informed consent and were given explanations of, among other matters, the aim of the investigation, the confidentiality of their identity, and use of data exclusively for research purposes.

Results

The results shown in this article have as guiding thread the technocracy of the delivery process, which is structured into two sections. The first describes the analytic categories: meanings of the experience lived by the mothers, which contemplate the negative experiences and the stoic attitude some mothers assume, and the second describes the perception regarding the treatment provided and received that identifies the types of violence found.

First section: *Don't cry or complain because they will leave you suffering more!* Stories of negative experiences and stoic behavior assumed by some mothers as super-experience strategy against the care received

The conditions of vulnerability represented by the delivery as a process that generates uncertainty, fears, risks, and anxiety, situations which, together with cultural pressures and mediated by traditional values around the femininity, made some mothers opt for limiting or annulling the exteriorization of their emotions. This decision was largely linked to the need to propitiate comfort to the health staff, given that it is interpreted as an eloquent display of cooperation that can lead to a more condescending attitude or, at least, more considerate, that is, assuming a stoic attitude – of calm endurance of pain and difficulties – becomes a passive strategy in front of the staff caring for them. The belief exists that those who express their pain or nonconformity in some way can cause a cold or hostile reaction that affects the quality of care. … *I calmed down and was somewhat resigned to what they would do to me, to avoid retaliation from the health staff* (EC1P5C30); *While if the mothers manifest pain, weeping, screams, retaliation is taken that possibly have repercussions in significant delays in care and possible abuse by the health staff. Don't cry or complain because they will leave you suffering more! …I preferred to yield and ignore the abuse received* (EC1P2C10).

Throughout the delivery care, since admission to the Healthcare Center until birth, the mothers were under some type of conditioning by the health staff, who showed intolerance, anger, or rejection upon their complaints and weeping caused by pain during the delivery process. The expression…*Don't cry or complain because they will leave you suffering more* appeared as a constant cited by the women, who heard this comment from other mothers who had already gone through the parturition experience. These preconceived ideas or beliefs about care were confirmed and experienced in their own deliveries since the first wait time for hospital admission; the women observed how the medical and nursing staff did not provide care to women who cried and complained. Some women narrated how nurses made comments that reflected annoyance and desperation toward women with this type of behavior, comments like: …*She would tell me not to cry; that if I cried, she would leave me for last; that the doctors did not like our crying because we have to be brave; I was struggling to keep from crying, I had been warned of the consequences of crying, so the fear that they would let my child die was too much* (C6P3C9). *However, not only the health staff considers that women must endure the pain because they have to and must have this capacity because they are women; the mothers share the belief: …When I cried, I thought I was a bad mother* (FE2C3).

Suppression of joy, as well as of emotions, is one of the characteristics of the model of biomedical or technocratic delivery. Most of the women attended the Healthcare Center to give birth to their child without contemplating other possibilities or dimensions of the parturition experience, and without recognizing that it is part of their sexuality.

The women coincided unanimously in that companionship is an important factor for their tranquility during the wait time, as well as the information provided by the health staff. Likewise, most of the women expressed their desire to be accompanied by their loved ones in the operating room and for their companions to have the experience of seeing the birth of their children, given that they could have provided strength and support during this moment. …*I would have liked to be accompanied by my husband during my delivery, for him to give me peace of mind because the pain was very strong and throughout the pregnancy we had dreamt of that, for my husband to have been there by my side* (CE3P5). Of the procedures performed during admission, the vaginal exam may turn out to be a particularly uncomfortable intervention for the women, who can feel overwhelmed by this practice carried out not only by the medical staff, but also by practicing medical students. The health staff does not always request authorization from the pregnant women to perform this procedure: …*I had several vaginal exams; on admission, a practitioner did one; after the shift changed, the doctor performed another one…* (FE3C3P2).

The procedures carried out in the operating room during delivery, like caesarean sections, Kristeller maneuvers, forceps, among others are not informed or explained to the pregnant women, before or after the intervention, which is why the mothers do not understand the reason for the procedures being performed or what the practices consist of, and much less the consequences for them and their children: …*They took my child out with forceps and they never asked me if I wanted this or not, and they also did the Kristeller; I was pushing and touched the doctor slightly, and right there he said: don't touch me, don't grab me and he was all upset, he would get angry if I touched him and it was not my intention* (EC2P4C22).

Some of the mothers reportedly tried to start a dialogue with the health staff to communicate their concerns about the delivery process, however, they were met with a barrier to being heard, without getting satisfactory responses to their questions. On the contrary, sometimes they were made to feel responsible and guilty for the events taking place during the delivery process, in that if they did not comply with the standard and medical mandates, they could cause complications and affect their children: …*He responded with a very bad attitude, saying: You are not cooperating with the process, so I have to help you (forceps) to avoid bronchial aspiration by your child* (EC6P3C12).

Those pregnant women who reported bad experiences repeatedly complain about the poor conduct, impatience, lack of empathy and warmth, refusal to provide clear and opportune information to calm anxieties and a certain arrogant contempt toward the attitudes, expressions, and needs of the pregnant women. All these forms of aggressiveness or indifference, in some cases, constituted for them the most frustrating or stressful aspect of their delivery process; more so, if fitting, the physical and mental afflictions inherent to said process: … *The professionals fail because of their arrogance, which I completely disapprove* (EC1P6C41).

Of particular interest, it should be noted that although some pregnant women expressed indifference; a small group analyzed the situation critically and provided possible explanations regarding those attitudes, which could – in principle – be unexpected. They highlight among these explanations the mechanization of the medical practice and of the nursing care: a routine and bureaucratic activity (in the sense of ritual attachment, by pure inertia to the protocols, diagnoses, procedures, etc.) that postpone or cancel the ethical aspect of caring for the mothers: …*More human warmth from the medical and nursing staff (about what mothers state is lacking in the health staff), also, they become very mechanical, too technical, they should be a bit nicer or talk to them more* (EC4P8C52).

Second section: Spectra of violence: Mothers' perceptions of the treatment received during the delivery process

The stories by the women interviewed evidence different ways of experiencing the treatment received by the health staff; a perception based on the framework of lack of knowledge expressed by most of the mothers on their sexual and reproductive rights during delivery. Thus, finding women who did not endure negative situations in the verbal treatment or in the procedures; other women, instead, recognize and report situations of violence during their experience during labor, although they have difficulties at the moment of verbalizing or stating that they received poor treatment by the health staff: *…Normal, it was okay, I would have liked for them to explain all the processes, they could have been friendlier and treated me better* (EC6PC27). Other women openly classified the treatment received as bad, besides identifying the negative experiences they endured and naming each of them emotionally; sad, horrible, nasty: *…Very sad because the mere fact of not being able to speak, of saying what was in my mind and much fear, I felt too much fear, too much and I would not want to repeat that experience* (C6P7C38).

The following describes the most frequent patterns and practices of abuse in the narrations by the women:

Abuse during procedures. This ranges from the wait times to be seen to which the pregnant women are subjected, clarifying that beyond the wait time, which is part of the normal delivery process, it involves not explaining to the mother that this is part of her rhythm during labor. Using their bodies as didactic resource to perform vaginal exams, caesarean sections without justification, practices – like forceps and the Kristeller maneuver, which injured the users, and the impossibility of having skin-to-skin contact with the child: *…The doctor told me; we have to perform a caesarean section, I got very confused and remembered what I had been told; they are looking for any excuse to perform caesarean sections* (F3P14C33).

Verbal abuse. This appears as a mechanism used by the health staff to gain dominance over the pregnant woman and carry out procedures without interruption. These can be expressed in comments that seek to repress emotions and manifestations of pain by using coercion; as well as value judgments in relation to the woman's sexual life: *…They performed a vaginal exam and it was very abrupt, I had bleeding, I screamed with pain, and was told that I had to be stronger because having children was not easy; how did I think those in the countryside have their children* (EC8P3C16).

Abuse through negligence. This is comprised by the lack of information the health staff provides to the mothers about the procedures that will be done, the responses to their concerns, or information on their status, that of their child and the postpartum care, as well as not consulting with them or telling them when the aforementioned is not possible, about the decisions being made during the course of the labor process: *…The doctors had no patience, you would ask them something and they remained quiet, they ignored you or spoke in very technical terms that could not be understood; they should be more human* (EC3P4C19).

Discussion

One of the main findings in this research was the stoic behavior during delivery assumed by most of the women; with the relation between this attitude and the treatment dispensed by the health staff being relevant, which undoubtedly can represent one of the most eloquent signals of domination, dehumanization, and violence of different type: institutional and gender. To understand stoicism, an inquiry was made of its original meaning related to an ancient Greek philosophical school founded by Zeno of Citium;(6) the term has evolved in its meanings until reaching a modern understanding associated to the attitude that consists in hiding emotions and laconism. Stoicism defined from ethics, praises "submission", citing Ferrater:(7) "happiness lies in accepting destiny, in the struggle against the forces of passion that produce restlessness." Thus, a "rational" person can choose a passive behavior on the face of adversity. In this case, the mothers assume a stoic behavior with the final objective of having a child safe and sound in spite of the violence exerted against them. Precisely, of the most interesting aspects of "stoicism" during labor is that it evidences the power of the health staff to practice the biomedical intervention on women conceived, consciously or unconsciously, as "objects" rather than subjects. Inevitably, a clear and close relation is established between the stoicism that annuls women subjected to intervention or manipulation – during the difficult situation of giving birth – without the right to complain or reply (no communication or silencing the mother as a human being). The aforementioned coincides with the research "representations and practices on birth", which describes – from an anthropological vision – the identification of a whole series of potential risks around the pregnant woman, which supposes constant doubt on the gestation, which could predispose to fear and with this, the possibility of questioning the behaviors and attitudes of women during delivery. This imposes the medical control to which the women must be subjected, implicitly and explicitly reaffirming the social and ideological control of women.(1) Within this context, the "stoic" attitude certainly confirms this control, almost absolute, over the body and psyche of pregnant women by the health staff.

The health staff not only has physical control of women, they also bear emotional control, with women being objectified, without being able to express their fears, anguish, or pain, which should be in complete disposition of the health staff. The submissive – stoic – behavior of the pregnant women may not only result comfortable to the staff, it is closely related to the cultural belief that the delivery is a biologically painful event due to the gender role played by women. This refers to an evident religious root of the mythical story of genesis when Eve is condemned to give birth to her children with painful labor. In this order of ideas, it should be indicated that the manifestation of pain is constructed socio-culturally, as evidenced by the investigation: "Cultural Differences in the Perception and Parturition Experience. The Case of Immigrant Women", which describes how in some cultures women in labor are urged to remain silent, while in others they are permitted to manifest their pain. Likewise, it was noted that women from Eastern Europe and Sub-Saharan Africa are stoic in their behavior.(8)

Our study found that women experience during labor at least three types of violence: during procedures, verbal or psychological, and through negligence, which speak not only of the appropriation of their bodies, but of their emotions and conceptions about maternity. The types of violence found suggest, as indicated by Davis-Floyd,(9) that a separation exists between procreation and sexuality, woman and mother, fetus and mother. The reified parturient cannot express emotions, fears, or concerns, or even express an opinion about the procedures that will be performed, so their role is highly passive. This violence can also be analyzed from the context of inequality of power; on this regard, Bourdieu describes it as that exerted with consensus and unawareness of who endures it and hides the relations of force that are beneath the relation in which it is configured. "...violence that starts up submissions that are not even perceived as such, supported on «collective expectations», on socially inculcated beliefs», transforms relations of domination and submission even in affective relations".(10) These socially inculcated beliefs are given precisely because of a dominant patriarchal inheritance, a hegemonic-biomedical paradigm, which has the conception that the physician is the one who knows and the patient must be limited to only obeying and following physician's orders, among others. Thus, symbolic violence acts with complicity of the dominant and the dominated, given that both share the same discourse and social beliefs, forcing those dominated to assume a resigned attitude, without questioning or recognizing requests by the dominant party. Consequently, parturient women are accomplices of the appropriation by the obstetric staff of their bodies and reproductive health. In said situation, mothers do not often identify bad care, or inquire about their sexual and reproductive rights during delivery, increasing the symbolic power or legitimacy of this asymmetric relationship. Nevertheless, the social agents may also be endowed with the categories of perception and assessment that permit perceiving, knowing, and recognizing it.(11)

These cases of violence are documented in research that describe situations of abuse and subjugation that coincide with our findings. For example, in the study: "Experiences of violence lived by pregnant women in health services in Bogotá", rough treatment and reprimands based on gender bias evidenced when women were object of scolding and claims based on the behavior they – supposedly – must have: "Let's see mommy, behave well", "because you were in good behavior, we will take care of you quickly"; these are some of the frequent phrases that, besides infantilizing women, leaves them without capacity to act. Likewise, said dehumanization is found in an investigation conducted in Venezuela in the Maternity Care Services and which coincides with the results from this research that showed that the most prevalent practices were: to hinder early attachment or skin-to-skin contact, which is reported by about one in every four users; criticism for crying or screaming during labor; impossibility to ask, manifest fears, or concerns (19.5%), and mockery, and ironic and disqualifying comments referred to by 15.3% of users.(12) It is an experience handed over from woman to woman through orality, constructing the imaginary of adequate behavior with which women enter the health centers. As well as during delivery, care is also reported by women as an experience lived unavoidably through pain; a necessary evil they must endure to have their children.

Contrary to that described previously and which differs from the results in this research, a study conducted in a maternity institution in Brazil: "The health staff and the safety of the mother-child binomial during labor and birth", found that through empathic support, professionals seek effectively to understand the feelings and discomforts of women during labor and delivery. Calling the woman by her name and not only "mamma", as is common, helped her sense the importance of her child's birth and exert her leading role, as is her right.(13) If the mother receives kind treatment, obtains respect for her body, and receives necessary and timely guidance, she will maintain her autonomy and the sense that she has gone through a marvellous experience; on the contrary, if she feels manipulated, does not participate in the decisions, and is examined rudely, it is quite likely that she is physically and morally violated; hence, her adaptation will be more difficult and painful.(16) Similarly, Michel Odent,(17) French obstetrician and pioneer of humane birthing, explains that within the hospital environment professionals defend what he calls "helping paradigm", imposed over the mother's desires. However, he advocates the "paradigm of protecting" the mother and child from interference foreign to the interrelation both create from the moment labor starts.

A form of protection is to help pregnant women control their pain through multiple therapies. It is important to highlight that currently health institutions offer all expecting women on arrival to carry out their labor process with epidural analgesia, which is aimed at managing and controlling pain in pregnant women. This analgesia is administered if the woman is in an active phase of the delivery process, that is, more than 4 cm of dilation and wishes to receive it, given that no woman is obligated to accept this procedure. This is a pharmacological and biomedical form of controlling pain. However, other non-pharmacological forms of controlling pain exist, which are not widely known by the health staff, probably due to the tendency to medicate life.(15) These forms are, for example, aqua therapy, music therapy, aroma therapy, and massotherapy among many others.

Further, scientific evidence shows that pain is multi-causal and does not necessarily obey to alterations in the woman's physiological equilibrium. Hence, the response to pain must focus on different fronts, like – for example – diminished anxiety through support and information, diminished anguish and loneliness through accompaniment from loved ones, the sense of illness and lack of control from their active participation in the labor process.(16) For Odent,(17) "during labor and birth, the child releases its own endorphins, from which it follows that during the hour after birth we have a mother and child impregnated with opiates". This provides a sense of pleasure and wellbeing, for the mother and the child. These nonconventional therapies are for some specialists in Humane Labor highly valuable in controlling the mother's pain and anxiety.(17) For them, these aids make labor much easier and pharmacologically reduced.(18) It is, thereby, valid to state that in most institutions the possibility exists of having access to pharmacological analgesia; however, pregnant women many times because of the imaginaries constructed, due to the stoic position they assume according to the stories and experiences from other mothers, and because of fears and beliefs around the delivery process decide not to manifest pain or to seek access to these types of therapies.

Furthermore, the dehumanization of the delivery means naturalization of violence practices and instrumentation of the obstetric treatment exerted on women conceived merely as objects or bodies subjected to intervention who are denied, implicitly, their human nature and their rights inherent to such. It is a serious matter that must lead to serious reflection and reevaluation of not only the delivery care but of the medical practice in general to recover not only the dignity of the women, but also the important work of health professionals.(19) Here, as in many other chores, we prove the adage that states: "science without conscience is bad science".(20) It is concluded that pregnant women introduce a richness and variety of meanings around the experiences during their delivery process. For them, it is a moment of life crossed by uncertainty, angst, loneliness, fear, and pain.

In the imaginary weaved, is the duty to themselves, and especially to save their children, of assuming a stoic attitude against manifesting their emotions, specifically the pain and fear they experience. This attitude, according to their own beliefs, diminishes wait times and avoids, to a certain extent, abuse from the healthcare staff. However, not even this attitude keeps them from being the object of practices that violate their rights, like performance of procedures without their consent, indifferent attitudes from the staff that make them feel ignored, value judgments to which they are subjected, and certain expressions and gestures by the staff caring for them that further undermine them. All this leads to thinking that the labor and delivery process of birth is a dehumanizing, difficult moment of life, impregnated with much pain and fear; an experience that definitely no woman would want to repeat. In closing, it is fundamental to highlight that this study presents a valuable contribution for the Nursing discipline, given that it has permitted understanding experiences of pregnant women and their human responses in the experience of a vital process, like the delivery process. This understanding must lead to reflecting upon nursing care being currently offered to pregnant women in the health institutions from the Medellín Public Network. Boff(21) states: "…What is opposed to the lack of interest and indifference is care: Caring is more than an action; it is an attitude. Hence, it goes beyond a moment of care, of zeal and care. It represents an attitude of concern, preoccupation, responsibility, and effective commitment with another". This commitment is the call made to care professionals from the experiences and meanings of the mothers enduring this process with fear, uncertainty, and pain.

From these findings, which evidence the dehumanization of women during their care in the delivery process, emerges the pressing need for nursing professionals and, in general, health professionals to advocate, get trained, and commit to providing humane care during the delivery process, for the marvelous moment of birth to be impregnated with the best care possible, with care that really impacts upon the wellbeing of the mother-child-family trinomial and that the healthcare staff can be seen as protector, caretaker, and assistant in all the stages of this transcendental moment in the life of every woman. Today, more than ever, a strong call is made to those who provide care to favor the newborn's capacity to love, which is achieved by permitting and caring for that contact between the mother and child; some authors, among these Odent,(17) have stated that this is where the revolution lies, which is needed during a time marked by violence and lack of love; that is that from the earliest stage after birth, the child should develop genuine, human, and transcendent love. The question is: are we prepared and willing to allow it?

References

1. García D, Díaz Z, Acosta Álamo M. El nacimiento en Cuba: análisis de la experiencia del parto medicalizado desde una perspectiva antropológica. Rev. Cubana Salud Pública. 2013; 39(4):718-32.
2. Quevedo P. Violencia Obstétrica: una manifestación oculta de la Desigualdad de Género [Internet]. Mendoza: Universidad Nacional de Cuyo; 2012 [Cited 2017 Feb 22]. Available from: http://bdigital.uncu.edu.ar/objetos_digitales/4785/tesisquevedo.pdf
3. Valdez SR, Hidalgo E, Mojarro M, Arenas LM. Nueva evidencia a un viejo problema: el abuso de las mujeres en las salas de parto. Rev. CONAMED. 2013; 18:14–20.
4. Valenzuela S. Violencia ginecológica. El Espectador. 2013 Aug. 13 [Internet]. [Cited 2016 June 22]. Available from: https://www.elespectador.com/noticias/judicial/violencia-ginecologica-articulo-439930
5. Carrillo Pineda M, Leyva-Moral JM, Medina Moya JL. El análisis de los datos cualitativos: un proceso complejo. Index Enferm. 2011; 20(1-2): 96-100.
6. Argonáutica. FILOSOFÍA II - El difícil siglo IV a.C.: la transición hacia la época helenística [Internet]. [Cited 2017 Feb 22]. Available from: http://argonautica-fingoi.blogspot.com.co/2010/11/filosofia-ii-el-dificil-siglo-iv-ac.html
7. Ferrater-Mora J. Diccionario de Filosofía Tomo II L-Z. Buenos Aires: Editorial Sudamericana; 1941.
8. Luque MA, Oliver MI. Diferencias culturales en la percepción y vivencia del parto: El caso de las mujeres inmigradas. Index Enferm. 2004; 48-49:9-13.
9. Blázquez-Rodríguez M. Aproximación a la antropología de la reproducción. AIBR Rev. Antropol. Iberoam. 2005; (42):1–25.
10. Bourdieu P. Intelectuales, Política y Poder. Buenos Aires: Eudeba; 2000.
11. Monroy SA. El continuo ginecobs-tétrico: experiencias de violencia vividas por mujeres gestantes en servicios de salud en Bogotá [Internet] Bogotá: Universidad Nacional de Colombia; 2012 [Cited 2017 Mar 12]. Available from: http://www.bdigital.unal.edu.co/7805/1/soniaandreamonroymu%C3%B1oz.2012.pdf
12. Terán P, Castellanos C, González M, Ramos D. Violencia obstétrica: percepción de las usuarias. Rev. Obs. Ginecol. Venez. 2013; 73(3):171–80.
13. Dornfeld D, Rubim EN. The health team and the safety of the mother-baby binomial during labor and birth. Invest. Educ. Enferm. 2015; 33(1):44–52.
14. González R. Protocolo estandarizado para la atención de enfermería a la mujer que ha tenido un parto normal. Invest. Educ. Enferm; 1994; 12(2):71–7.
15. Orueta R, Santos C, González E, Fagundo EM, Alejandre G, Carmona de la Morena J, et al. Medicalización de la vida. Rev. Clin. Med. Fam. 2011; 4(2): 150–61.
16. España. Ministerio de Sanidad y Política Social. Guía de Práctica Clínica sobre la Atención al Parto Normal [Internet] Madrid: Servicio Central de Publicaciones del Gobierno Vasco; 2010 [Cited 2015 Dec 29]. P:50-8. Available from: http://www.guiasalud.es/GPC/GPC_472_Parto_ Normal_Osteba_compl.pdf.
17. Odent M. La Vida Fetal, el Nacimiento y el Futuro de la Humanidad. Madrid: OB STARE; 2009.
18. Burgo C. Los derechos de la embarazada [Internet]. Buenos Aires: Parto y Nacimiento Humanizados; 2013 [Cited 2016 Mar 19]. Available from: http://www.partohumanizado.com.ar/parto_respetado/derechos.html.
19. De León E, Odent M. ´El parto es amor y no admite instrumental ni medicinas´. La Provincia. Diario de Las Palmas. (2013 nov 08) [Internet]. [Cited 2017 Apr 02]. Available from: http://www.laprovincia.es/sociedad/2013/11/08/michel-odent-parto-amor-admite/569806.html

20. Serrano J, Morin E. Ciencia con consciencia [Internet]. [Cited 2017 Feb 28]. Available from: http://biblioteca.itam.mx/estudios/estudio/estudio06/sec_47.html.
21. Machado MA. ¿Cómo parimos?: de la violencia obstétrica al parto humanizado [Internet] Montevideo: Universidad de la República; 2014 [Cited 2017 Sept 02]. Available from: https://www.colibri.udelar.edu.uy/bitstream/123456789/5318/1/MACHADO.pdf

Original article

UNIVERSIDAD
DE ANTIOQUIA
1803

Impact on the quality of life of women with breast cancer undergoing chemotherapy in public and private care

Raquel de Castro Figueiredo Pereira Coelho[1]
Sabrina Nunes Garcia[2]
Larissa Marcondes[3]
Flaviane Andreele Jacinto da Silva[4]
Aline de Paula[5]
Luciana Puchalski Kalinke[6]

Impact on the quality of life of women with breast cancer undergoing chemotherapy in public and private care

Objective. To compare the general quality of life of women with breast cancer undergoing chemotherapy in a public and a private institution. **Methods.** Longitudinal observational study including 115 women with breast cancer in an outpatient chemotherapy treatment at two health institutions, one public and one private, in the city of Curitiba (Brazil). The Quality of Life Questionnaire-C30 and the Quality of Life Questionnaire - Breast Cancer Module instruments were applied at three moments of treatment (onset, 40-50 days, and 85-95 days after initiation). **Results.** Women's global health status was affected in both groups since the first phase of chemotherapy (76.2 points in the private institution and 74.6 points in the public institution, considering 100 points = maximum health). In both groups there was worsening of quality of life over time, which was lower in women in the private

[1] Nurse, Masters. Hospital de Clínicas da Universidade Federal do Paraná. Curitiba-Pr, Brasil.
email: raque.gabi@gmail.com

[2] Nurse, Masters. Instituto de Oncologia do Paraná – IOP. Curitiba-Pr, Brasil.
email: sgarcia@iop.com.br

[3] Nurse, Masters. student. Universidade Federal do Paraná. Curitiba-Pr, Brasil.
email: marcondes.lari@gmail.com

[4] Nursing undergraduate student. Universidade Federal do Paraná. Curitiba-Pr, Brasil.
email: fla.andreele@gmail.com

[5] Nursing undergraduate student. Universidade Federal do Paraná. Curitiba-Pr, Brasil.
email: aline.paulla94@gmail.com

[6] Nurse, Ph.D. Adjunt Professor, Universidade Federal do Paraná. Curitiba-Pr, Brasil.
email: lucianakalinke@yahoo.com.br

Conflicts of Interest: None.

Received: July 24th, 2017.

Accepted: November 20th, 2017.

How to cite this article: Coelho RCFP, Garcia SN, Marcondes L, Silva FAJ, de Paula A, Kalinke LP. Impact on the quality of life of women with breast cancer undergoing chemotherapy in public and private care. Invest. Educ. Enferm. 2018; 36(1):e04.

DOI: 10.17533/udea.iee.v36n1e04

Investigación y Educación en
Enfermería
–Nursing Research and Education–
UNIVERSIDAD
DE ANTIOQUIA
1803
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

institution (second phase = 75.0 and third phase = 74; p=0.47), compared to those in the public institution (second phase = 71.5 and third phase 69.1; p=0.02). Regarding the type of institution, the most committed functions were the emotional and social in the private, and physical and pain in the public. **Conclusion.** The global quality of life of women with breast cancer deteriorated as a result of chemotherapy in both institutions, and it was lower in those receiving private care. Nursing should consider the type of institution responsible for women's care in order to provide comprehensive care that considers the functions affected at each phase of treatment.

Descriptors: quality of life; breast neoplasms; private sector; public sector; ambulatory care facilities.

Compromiso de la calidad de vida de mujeres con cáncer de mama sometidas a quimioterapia en la atención pública y privada

Objetivo. Comparar la calidad de vida general de mujeres con cáncer de mama sometidas a quimioterapia en una institución pública y otra privada. **Métodos.** Estudio observacional longitudinal en el que participaron 115 mujeres con cáncer de mama en tratamiento ambulatorio de quimioterapia en dos instituciones de salud, una pública y una privada, de la ciudad de Curitiba (Brasil). Los instrumentos *Quality of Life Questionnaire*-C30 y *Quality of Life Questionnaire - Breast Cancer Module* se aplicaron en tres momentos del tratamiento (inicio, 40-50 días y 85-95 días post-inicio). **Resultados.** La calidad de vida global de las mujeres ya estaba afectada en ambos grupos desde la primera etapa de la quimioterapia (76.2 puntos en la privada y 74.6 puntos en la pública, siendo 100 puntos el equivalente de máxima salud). También se pudo apreciar que, aunque en ambos grupos hubo empeoramiento de la calidad de vida con el tiempo, este fue menor en las mujeres en la atención privada (segunda etapa = 75.0 y tercera etapa = 74; p=0.47), comparadas con las que recibieron atención pública (segunda etapa = 71.5 y tercera etapa 69.1; p=0.02). Según tipo de institución, las funciones más comprometidas fueron la emocional y la social en la privada, y la física y el dolor en la pública. **Conclusión.** La calidad de vida global de las mujeres con cáncer de mama se deterioró como consecuencia de la quimioterapia en las dos instituciones, siendo menor en las que recibieron atención privada. Enfermería debe también considerar el tipo de institución responsable de la atención de la mujer, con el fin de brindar un cuidado integral que tenga en cuenta las funciones afectadas en cada fase da tratamiento.

Descriptores: calidad de vida; neoplasias de la mama; sector privado; sector público; instituciones de atención ambulatoria.

Comprometimento da qualidade de vida de mulheres com câncer de mama submetidas a quimioterapia no atendimento público e privado

Objetivo. Comparar a qualidade de vida geral de mulheres com câncer de mama submetidas a quimioterapia em uma instituição pública e outra privada. **Métodos.** Estudo observacional, longitudinal, em que participaram 115 mulheres com câncer de mama em tratamento ambulatorial de quimioterapia em duas instituições de saúde, uma pública e uma privada, na cidade de Curitiba (Brasil). Os instrumentos *Quality of Life Questionnaire*-C30 e *Quality of Life Questionnaire – Breast Cancer Module* foram aplicados em três momentos do tratamento (início, 40-50 dias e 85-95 dias após o início). **Resultados.** A qualidade de vida global das mulheres foi afetada em ambos os grupos desde a primeira fase da quimioterapia (76.2 pontos na privada e 74.6 pontos na pública, sendo 100 pontos o equivalente ao máximo de saúde). Também foi possível observar em ambos os grupos que houve piora na qualidade de vida ao longo do tempo, esta foi menor nas mulheres em atendimento privado (segunda etapa = 75.0 e terceira etapa = 74; p=0.47), comparadas com aquelas que receberam atenção pública (segunda etapa = 71.5 e terceira etapa 69.1; p=0.02). De acordo com o tipo de instituição, as funções mais comprometidas foram a emocional e a social na privada, e física e a dor na pública. **Conclusão.** A qualidade de vida global das mulheres com câncer de mama deteriorou-se em consequência da quimioterapia nas duas instituições, sendo esta menor naquelas que recebem atenção privada. A enfermagem deve considerar o tipo de instituição responsável pelo atendimento das mulheres, a fim de fornecer um atendimento integral que leve em consideração as funções afetadas em cada fase do tratamento.

Descritores: qualidade de vida; neoplasias da mama; setor privado; setor público; instituições de assistência ambulatorial.

Raquel de Castro Figueiredo Pereira Coelho • Sabrina Nunes Garcia • Larissa Marcondes
Flaviane Andreele Jacinto da Silva • Aline de Paula • Luciana Puchalski Kalinke

Introduction

Breast cancer is one of the most frequent and feared diseases among women. It has negative impact given its severity, unpredictable evolution, mutilation and self-image alterations that compromise physical, psychological and social aspects and affect women's quality of life (QoL). Antineoplastic chemotherapy is one of the most important forms of breast cancer control and represents an advance in its cure.(1) However, despite prolonging life and improving prognosis, chemotherapy is associated with a lower global quality of life (GQoL) score, possibly related to its toxicity and serious side effects.(2) Both the diagnosis and chemotherapy change patients' routine and QoL. They lead to negative feelings due to the uncertainty of prognosis, possible surgical processes, and coping with the possibility of death.

The search for improved care and QoL of women with breast cancer undergoing chemotherapy is an important aspect to be measured because this assesses the disease dimensions and creates parameters for daily healthcare practices in health services.(3) Thus, by assessing the QoL it is possible to verify the treatment and impact, and plan nursing actions for patients' adherence and rehabilitation, and better QoL conditions during treatment and survival. Knowing the sociodemographic profile of women with breast cancer is key to provide targeted and comprehensive care according to each moment of the therapeutic treatment. Highlighting possible profile differences according to the care institution may alert the health team to perform actions, guidelines and care adjusted to women's needs and reality. The physical, emotional, social and cognitive impacts must be constantly evaluated to provide accurate care to women experiencing breast cancer, from diagnosis to the end of life.

Thus, the objective of the present study was to evaluate and compare the general quality of life and sociodemographic and clinical profile of women with breast cancer undergoing chemotherapy treatment at a public and a private institution.

Methods

This is an observational, longitudinal and analytical study. It is part of the thematic project entitled 'Quality of life of cancer patients undergoing chemotherapy'. The study was conducted between October 2012 and May 2015 in chemotherapy outpatient clinics of a private and a public institution considered reference in the care for this patient profile. Both clinics are located in the city of Curitiba, state of Paraná, southern Brazil. The non-probabilistic sample consisted of all eligible women during the study period. Inclusion criteria were: female gender with proven diagnosis of breast cancer, aged over 18 years, no previous chemotherapy treatment for cancer and indication for initiation of chemotherapy. Women on palliative therapy and had lost follow-up were excluded. A total of 131 women were selected, of which 16 were ineligible because they had not been approached before chemotherapy.

In the first stage of the study, 115 women participated in the study, of which 48 were from the private institution and 67 from the public institution. In the second stage, which occurred between 40 and 50 days after the first administration of chemotherapy (period of adverse effects occurrence),(4) a woman was discontinued in the public institution. In the third stage, 85 to 95 days after the first, (period of control of adverse events),(4) five women were discontinued in the public institution. In the private institution there was no discontinuity in any of the stages. Discontinuations occurred because of chemotherapy toxicity or loss of follow-up between the second and third stages. A total of 791 questionnaires were collected in the three stages of the study.

Three questionnaires were used for data collection. Questionnaire 1 had sociodemographic and clinical data, and was applied only in the first stage. Questionnaire 2 was the Quality of Life Questionnaire-C30 (QLQ-C30), developed by the European Organization for Research and Treatment of Cancer (EORTC), version 3.0, and was used to assess the QoL of cancer patients. Questionnaire 3 was the Quality of Life Questionnaire - Breast Cancer Module (QLQ-BR23), and applied in the three stages. It is directed to the basic disease with issues related to breast cancer, version 1.0. The QLQ-C30 and QLQ-BR23 questionnaires used were the translated and validated versions for Brazil.(5)

The analysis of sociodemographic and clinical data was by absolute and relative frequency. Data from the QLQ-C30 and QLQ-BR23 questionnaires had a 0-100 score according to the Scoring Manual of European Organization for Research and Treatment of Cancer.(6) For QoL-related scores such as emotional functioning, the closer to 100 represents greater functionality and corresponds to a better QoL. For the comparison of data between institutions, was applied the non-parametric Mann Whitney test, and for the comparison of stages, was applied the Friedman non-parametric test complemented by the Least Significant Difference Test (LSD), considering $p \leq 0.05$ as significant. All ethical precepts were respected in the study, and both questionnaires were authorized upon registration of the project with the EORTC. It was approved by the Ethics and Research Committee under protocol number 5301 for the private institution, and number 518.067 for the public institution.

Results

In the present study, participants' mean age in the private institution was 46 years (min = 24, max = 69), and in the public it was 51.3 years (min = 30, max = 77), which was a significant difference ($p=0.02$). Table 1 shows sociodemographic data of the 115 participants. Regarding women's educational level, in the private institution 54% (n = 26) had complete higher education, whereas in the public institution 43.3% (n = 29) had less than nine years of study, which includes incomplete or complete primary education. The family income in minimum wages was another highlight; in the private institution, the average income was 12 salaries (US$ 3,069.76), while in the public institution the average was 2.8 salaries (US$ 716.27).

Table 1. Sociodemographic characteristics of women with breast cancer undergoing chemotherapy according to type of institution. Curitiba, PR, Brazil, 2015

Variables	Private *n*=48		Public *n*=67		*p*-value
	Number	%	Number	%	
Marital status					**0.57**
Single	4	8.5	8	11.9	
Married or living together	32	66.5	41	61.2	
Separated or divorced	9	18.8	8	11.9	
Widows	3	6.3	10	14.9	
Number of children					**0.50**
None	3	6.3	10	14.9	
Up to 2	43	89.6	43	64.2	
3 or more	2	4.2	14	20.8	
Educational level (years of study)					**0.74**
< 9	4	8.5	29	43.3	
9 to 12	17	35.5	19	28.4	
> 12	26	54.2	17	25.4	
No answer	1	2.1	2	2.9	
Occupation					**0.41**
Active	27	56.5	38	56.7	
Retired	2	4.2	9	13.4	
Housework	14	29.2	17	25.4	
Unemployed	5	10.5	3	4.5	

In relation to clinical data (Table 2), in the private institution 68.5% (n = 33) reported having no comorbidity. In the public institution, hypertension stood out in 35.8% of women, and 49.3% reported not having any secondary diseases. Clinical stage III was frequent in 82% and 39.5% of women in public and private institutions, respectively, and AC-T (Adriamycin® and Cyclophosphamide® followed by Taxol®) was the most used protocol.

The QoL results were evaluated with the QLQ-C30 questionnaire, the Global health status in the private institution was considered satisfactory with a value of 76.2%, but it declined in the second and third phases. In the public institution, there was also a decrease between the first and third phases, but in this institution the change was greater. As for significant differences between phases, the p-value of the Global health status in the private institution was 0.47, and in the public institution was 0.02 (Table 3).

Still in the comparison between treatment phases with the QLQ C-30 questionnaire, in the public institution were observed significant changes in values of physical and emotional functioning, fatigue, nausea and vomiting, and in the private institution, in physical and social functioning, fatigue, nausea and vomiting. When using the QLQ BR23 questionnaire, in the private institution, the systemic effects and body image stood out, and in the public institution, systemic effects and breast symptoms had significance (Table 4).

When comparing institutions (Table 5) using the QLQ-C30 questionnaire, the significant domains in the private were emotional functioning (first phase) and social functioning (third phase). In the public institution, physical functioning and pain (both in the first phase) were significant.

Table 2. Clinical characteristics of women with breast cancer undergoing chemotherapy according to type of institution. Curitiba, PR, Brazil, 2015

Variables	Private *n*=48		Public *n*=67		*p*-value
	Number	%	Number	%	
Smoking habits					**0.17**
Smoker	5	10.5	13	19.4	
Non smoker	36	75	43	64.2	
Former smoker	7	14.5	11	16.4	
Alcohol intake					**0.28**
Does not drink alcohol	40	83.5	51	76.1	
Moderate intake	6	12.5	10	15	
Heavy drinker	2	4	6	8.9	
Physical activity practice					**0.04**
No practice	27	56.5	50	74.6	
Eventual practice	14	29	15	18	
Regular practice	7	14.5	5	7.4	

Table 3. Global health status scores of women with breast cancer undergoing chemotherapy according to stage of treatment and type of institution. Curitiba, PR, Brazil, 2012-2015

Institution	First phase	Second phase	Third phase	*p*-value
Private	76.2	75.2	74	0.47
Public	74.6	71.5	69.1	0.02

Table 4. Significant domains between chemotherapy treatment phases in women with breast cancer by type of institution. Curitiba, PR, Brazil, 2012-2015

Scale and domain	Private				Public			
	p-value	1^{st}x2^{nd} stages	1^{st}x3^{rd} stages	2^{nd}x3^{rd} stages	*p*-value	1^{a}x2 ^{a} stages	1^{st}x3^{rd} stages	2ndx3^{rd} stages
QLQ C-30								
Global health status	0.47	ns*	ns	ns	0.02	ns	ns	ns
Physical functioning	<0.01	ns	<0.01	ns	<0.01	ns	<0.05	ns
Emotional functioning	<0.01	ns	<0.05	ns	0.01	<0.05	<0.05	ns
Fatigue	<0.01	0.01	<0.01	ns	<0.01	<0.01	<0.01	ns
Nausea and vomiting	<0.01	<0.05	0.05	ns	<0.01	<0.01	<0.01	ns
QLQ-BR23				**ns**				**ns**
Systemic effects	<0.01	<0.01	<0.01	ns	<0.01	<0.01	<0.01	ns
Breast symptoms	<0.01	<0.01	<0.01	ns	<0.01	<0.05	<0.05	ns

(*) ns: not significant

Table 5. Significant domains in the comparison between private and public institutions. Curitiba, PR, Brazil, 2012-2015

Questionnaire	Function	Phase	Private institution		Public institution		*U*	p-value
			n	Sum of ranks	*n*	Sum of ranks		
C30	Physical functioning	1st	48	3151	67	3519	1241	0.037
C30	Emotional functioning	1st	48	3205	67	3465	1187	0.017
C30	Pain	1st	48	2361	67	4309	1185	0.016
C30	Social functioning	3rd	48	2272.5	61	3722.5	1096.5	0.024
BR23	Body image	1st	47	3050	67	3505	1227	0.045
BR23	Systemic effects	1st	48	2245	67	4425	1069	0.002
BR23	Systemic effects	2nd	48	2347	66	4208	1171	0.017

Discussion

QoL studies in women with breast cancer aim to identify the impact of diagnosis, treatment, adverse effects and biopsychosocial needs throughout the course, allowing that nurses plan actions to improve these women's living conditions. In this study, the public institution reveals a more heterogeneous population in relation to age, educational level and professional occupation. Socioeconomic conditions are less favorable with less access to health services for periodic follow-up, and when it is done, greater time is required for diagnosis given the available resources in gratuitous care.

The private institution characteristic is also a component to be considered as it can show specific results for this scenario because of the population's social characteristics. In private institutions, women often have more favorable socioeconomic conditions and access to health services because of the possibility of payment, and this aspect facilitates routine examinations and frequent consultations hence allowing an early diagnosis.

In the private institution, the mean age was lower than the national. This is an uncommon fact in the literature that constitutes 5 to 7% of breast cancer cases. In contrast, in the public institution, women had an average age similar to the national of around 50 years.(7,8) The explanation for this condition can be that younger women at reproductive ages are more likely to seek medical service, therefore are more examined, which can provide an early diagnosis of the disease.(9) However, statistics predicting breast cancer in relation to age are changing, and the results of the research in the private institution corroborate with this information. These studies(10,11) show the predominance of age groups below the national average, with increased number of cases as women's age increased. International studies are in contrast to the findings of the present study, and indicate the occurrence in the age group over 50 years, women's mean age of 61.8 years in Sweden(12) and 58 years in the United States.(13)

In addition to the age group, other factors deserve health professionals' attention, such as educational level and socioeconomic status. In the private institution, several women have studied more than 12 years, but in the public institution, many women studied less than nine years, which demonstrates the educational level difference between women with breast cancer in chemotherapy treatment at the two institutions. This corroborates the fact that the higher the educational level the greater the insertion of these women in the labor market, and consequently, the greater knowledge about prevention methods.(14)

According to Rosa and Radünz,(15) low educational level may be tied to low socioeconomic status. That was also a finding in the present study, in which around 56% of women in the private and public sectors were economically active. However, the average family wage in the private institution was high. In the public institution, in turn, it was characterized as low socioeconomic status. Simeão et al.(16) emphasize that similar socioeconomic and cultural level characteristics allow a better understanding and planning of the needs for the physical and psychological benefit of affected women. In contrast, economically active and productive women suffer a greater impact on QoL after diagnosis and treatment, triggered by the feeling of impotence in the face of illness, of their social and family life, and fearing the future for the uncertainty of the present, because they conciliate job activities with the treatment.(17) In counterpoint, authors(2) of a Chinese study highlight the association of a high family income with better QoL of patients with breast cancer in each measured domain. Guidelines and approaches to this group need to be conducive of effective communication throughout treatment by alleviating stressful effects resulting from changes in their emotional, social and family life.

The comparison of clinical staging between institutions showed the public institution had 42.5% more women with stage III than the private institution. This demonstrates women start treatment in more aggressive stages of breast cancer in public institutions, and the access of women from a private institution is more precocious. These data corroborate with the study in Africa. The objective was to understand the late diagnosis and impact of the stage of breast cancer among Libyan women. Stage III was the most expressive, with a diagnosis time of more than six months, which potentially results in high mortality rates.(18) The late diagnosis is focused on several factors related to the population's characteristics, low educational and socioeconomic level, and tracking policies, which make the access to early diagnosis difficult, worsens the prognosis, and leads to more aggressive treatments with impact on women's survival and QoL. Health professionals' interventions should be performed at all levels of care to provide agile assistance and according to their reality. QoL is a multidimensional construct that allows identifying the psychosocial aspects altered by cancer and its treatments. It is a support tool for nurses and other professionals in the management of alterations in women with breast cancer.

Data from QLQ-C30 questionnaires at the private institution show a higher QoL score compared to the public institution. However, the same domains are scored in both institutions: physical functioning, emotional functioning, fatigue, nausea and vomiting. These are common effects in patients receiving chemotherapy for breast cancer. In both institutions, most women with breast cancer arrived for treatment already in stage III, leading to the choice for the most aggressive therapy that causes greater decline in physical functioning. A Brazilian study with the same population profile is in agreement with these data.(1) It shows physical functioning with lower means, 60.5% and 64.43% respectively, which characterizes impairment in this domain with a decrease in QoL.

Accordingly, a study in Turkey that evaluated QOL and nursing care satisfaction during chemotherapy using the FACT-G questionnaire demonstrated the domain of physical well-being was compromised, with the score of 14.85%, which evidenced that more advanced stages experience more physical symptoms than initial stages.(19) In contrast, Hoyer et al.(12) observed scores greater than 80% in physical functioning among Swedish women on chemotherapy, and mean values above 75% also for social functioning, indicating no impairment of QoL in relation to these functions. Analogous results were found in a similar study conducted in Malaysia, with mean values above 75% for physical and social functioning, which positively characterizes the maintenance of living conditions, and social and leisure activities among affected women.(20) The impairment of physical and social functioning reflects a reduction in the socio-occupational participation of these women regarding their involvement in daily situations often impaired by decreased mobility in the homolateral arm of breast cancer(1) that results in worsening QoL concerning these domains.

Emotional functioning was compromised in the three phases in both institutions, showing that patients were worried, fearful and emotionally fragile throughout treatment, compromising QoL in this domain. In their studies, authors(1) emphasized marked changes in emotional functioning, with mean values of 48.4%, which indicate the QoL impairment of patients undergoing chemotherapy. Women with breast cancer live with emotional disorders daily, such as feelings of imminent death and fear, and behaviors caused by the threat of cancer given the actual or idealized proximity of incapacity or risk of life that lead to fear, anguish, shame, and feelings of discrimination that are difficult situations to be embraced emotionally by patients.(1,3)

A study conducted in China,(21) assessed the relationship between depression, anxiety and QoL of 269 women during treatment, and 148 women who had completed treatment one year before by using the Hospital Anxiety and Depression Scale-Cantonese/Chinese version and FACT-G questionnaires. It showed an association between high levels of anxiety with worse physical and functional functioning, and impairment in emotional functioning during and after therapy. This indicates an impairment of QoL regardless of social status, staging and modality of treatment. The QLQ-BR23 questionnaire scores show there is a singularity in relation to systemic effects, but with significance for the public institution. Patients of the public institution had significant scores when evaluated in relation to systemic effects of chemotherapy. This may occur because of the treatment aggressiveness at more advanced stages of the disease. Another aspect to be considered is that women attended at private institutions often have access and better conditions to obtain medications that minimize side effects.(14)

Other results presented with the QLQ-BR23 questionnaire showed a significantly higher score for the private institution related to body image, and in the public institution for breast symptoms. It is noteworthy that breast cancer therapy can affect several dimensions of women's lives. It is directly related to the symptomatology and women's perception of their body image, besides compromising the QoL.(14) The altered body image is an uninterrupted sign of the presence of cancer that maintains and aggravates feelings of anxiety, fear, revolt, and psychologically affects women's interpersonal relationships. Therefore, cancer nurses must develop actions to favor and stimulate social, family, affective, and sexual life, and the QoL in relation to self-image.

The emotional and social reactions caused by breast cancer diagnosis in the life of a woman are singular. She receives the news of cancer as something unexpected, threatening, capable to reach the integrity and proof of female existence, since breasts are the symbolism and concept that women make of themselves. Feelings of death, stigma of mutilation and feelings that may alter self-esteem can cause change and devaluation of these patients' social aspect.(22) In a comparison between institutions regarding altered domains in quality of life, there was a higher score for social functioning in women under care in the private institution. It is noteworthy that these women have higher educational level, high family income, and are inserted in the labor market. As treatment is long and mutilating, it takes them away from their routine, which possibly led to the direct alteration in this domain.

In the public institution, pain was a significant factor in the change in QoL. This fact can be justified by the high number of late diagnoses that result in more discomfort to women, and more aggressive treatments. Like fatigue, it is a frequent, persistent symptom that causes physical and emotional exhaustion to patients and their families because of difficulties in daily activities and self-care, changes in mood and concentration.(23) In the study by Guimarães and Anjos,(24) pain was identified before chemotherapy in 20% of the women, with increased mean values, intensification of the symptom during therapy, and losses in the QoL. It reverberates in daily life with emotional, social and functional impairment, and prevents women from performing their routine activities. Measuring pain is one of nurses' actions and it requires knowledge of evaluation methods and factors that trigger and overcome this symptom by considering its subjectivity.

In nursing care for women with breast cancer, the prediction of coping strategies that preserve self-esteem, social and emotional functioning, and physical effects of cancer and chemotherapy treatment should be part of the daily life of these professionals. The bonding between women and nurses during this period may help women to better understand their body changes, making the process of coping with the disease less stressful and exhausting(25) and consequently, resulting in a better QoL. A limiting factor in this study was the size and lack of randomness of the sample. The reduced number allows to consider the findings only for the population in question. It was also difficult to find studies comprising results in mixed institutions for comparison with our data.

Conclusion

In this study, were investigated the possible impacts of breast cancer and chemotherapy treatment on women's QoL in public and private institutions. Chemotherapy deteriorated women's QoL in both institutions, and it was lower in patients at the public institution. Differences between public and private institutions may impact the QoL differently. In the study, the only difference found in women's characteristics was their age at the time of diagnosis, which was lower in the private institution. Nursing should have a better understanding about the type of institution responsible for women's care in order to identify the domains and affected symptoms, which will allow the provision of comprehensive care to these women at each phase of treatment hence improving their QoL.

References

1. Fangel LMV, Panobianco MS, Kebbe LM, Almeida AM, Gozzo T O. Qualidade de vida e desempenho de atividades cotidianas após tratamento das neoplasias mamárias. Acta Paul. de Enferm. 2013; 26(1):93-100.
2. Yan B, Yang L, Hao L, Yang C, Quan L, Wang L, et al. Determinants of Quality of Life for Breast Cancer Patients in Shanghai, China. PLoS One. 2016; 11(4):e0153714.
3. Terra FS, Costa AMDD, Damasceno LL, Lima TS, Filipini CB, Leite MAC. Avaliação da qualidade de vida de pacientes oncológicos submetidos à quimioterapia. Rev. Bras. Clin. Med. 2013; 11(2):112-7.
4. Gozzo TO, Nascimento TG, Panobianco MS, Almeida AM. Ocorrência de neutropenia em mulheres com câncer de mama durante tratamento quimioterápico. Acta Paul. Enferm. 2011; 6:810-4.
5. Michels FAZ, Latorre MRDO, Maciel MS. Validity, reliability and understanding of the EORTC-C30 and EORTC-BR23, quality of life questionnaires specific for breast cancer. Rev. Bras. Epidemiol. 2013; 16(2):352-63.
6. Europen Organization Research and Treatment of Cancer. (EORCT). Brussels: EORCT; 2014.
7. Ministério da Saúde (BR), Instituto Nacional de Câncer José Alencar Gomes da Silva (INCA). Estimativa 2016: Incidência de câncer no Brasil. Rio de Janeiro: Inca; 2017 [cited 15 Nov 2017]. Available from: http://www.inca.gov.br/estimativa/2016/
8. Renck DV, Barros F, Domingues MR, Gonzales MC, Sclowitz ML, Caputo ED, et al. Equidade do acesso ao rastreamento mamográfico do câncer de mama com intervenção de mamógrafo móvel no Sul do Rio Grande do Sul, Brasil. Cad. Saúde Pública. 2014; 30(1):88-96.
9. Lima ALP, Rolim NCOP, Gama MEA, Pestana AL, Silva EL, Cunha CLF. Rastreamento oportunístico do câncer de mama entre mulheres jovens no Estado do Maranhão, Brasil. Cad. Saúde Pública. 2011; 27(7):1433-9.
10. Keegan TH, DeRouen MC, Press DJ, Kurian AW, Clarke CA. Occurrence of breast cancer subtypes in adolescent and young adult women. Breast Cancer Res. 2012; 14(2):R55.
11. Pinheiro AB, Lauter DS, Medeiros GC, Cardoso IR, Menezes LM, Barreto RM, et al. Câncer de mama em mulheres jovens: análise de 12.689 casos. Rev bras cancerol. 2013; 59(3):351-9.
12. Hoyer M, Johansson B, Nordin K, Bergkvist L, Ahlgren J, Lidin-Lindgvist A, et al. Health-related quality of life among women with breast cancer – a population-based study. Acta Oncol. 2011; 50:1015-26.

13. Sio TT, Chang K, Jayakrishnan R, Wu D, Politi M, Malacame D, et al. Patient age is related to decision-making, treatment selection and perceived quality of life in breast cancer survivors. World J. Surg. Oncol. 2014; 12:230.
14. Rodrigues CS, Givisiez JHN. Estudo da acessibilidade ao serviço de saúde de pacientes com câncer de mama no município de campos dos Goytacazes. In: XVII Encontro Nacional de Estudos Populacionais; 2010 set. 20-4. Available from: http://www.alapop.org/Congreso2012/DOCSFINAIS_PDF/ALAP_2012_FINAL811.pdf
15. Rosa LM, Radunz V. Do sintoma ao tratamento adjuvante da mulher com câncer de mama. Texto Contexto Enferm. 2013; 22(3):713-21.
16. Simeão SFAP, Landro ICR, De Conti MHS, Gatti MAN, Delgallo WD, De Vitta A. Qualidade de vida em grupos de mulheres acometidas de câncer de mama. Ciênc. Saúde Coletiva. 2013; 18(3):779-88.
17. Silva MM, Silva JÁ, Esteves LO, Mesquita MGR, Stipp MAC, Duarte SCM. Perfil sociodemográfico e clínico de pessoas em tratamento quimioterápico: subsídios para o gerenciamento em enfermagem. Rev. Eletr. Enf. 2013; 15(3):704-12.
18. Eramah E, Abdalla F, Buhmeida A, Larbesj E, Pyrhonen S, Collan Y. Diagnosis delay in Libyan female breast cancer. BMC Res. Notes. 2012; 5(452):1-8.
19. Bayran Z, Durna Z, Akin S. Quality of life during chemotherapy and satisfaction with nursing care in Turkish breast cancer patients. Eur. J. Cancer Care. 2014; 23:675-84.
20. Yusuf A, Ahmad Z, Keng SL. Quality of life in Malay and Chinese women newly diagnosed with breast cancer in Kelantan, Malaysia. Asian Pac. J. Cancer Prev. 2013; 14:435-40.
21. Ho SSM, So WK, Leung DY, Lai ET, Chan CW. Anxiety, depression and quality of life in Chinese women with breast cancer during and after treatment: A comparative evaluation. Eur. J. Oncol. Nurs. 2013; 17:877-82.
22. Anjos JC, Alayala A, Hofelmann DA. Fatores associados ao câncer de mama. Cad. Saúde Coletiva. 2012; 20(3).
23. Lamino DA, Mota DDCF, Pimenta CAM. Prevalência e comorbidade de dor e fadiga em mulheres com câncer de mama. Rev. Esc. Enferm. USP. 2011; 45(2):508-14.
24. Guimarães AGC, Anjos ACY. Caracterização sociodemográfica e avaliação da qualidade de vida em mulheres com câncer de mama em tratamento quimioterápico adjuvante. Rev. Bras. Cancerol. 2012; 58(4):581-92.
25. Gomes NS, Silva SR. Avaliação da autoestima de mulheres submetidas à cirurgia oncológica mamária. Texto Contexto Enferm. 2013; 22(2):509-16.

Original article

UNIVERSIDAD
DE ANTIOQUIA
1803

Evaluation of the Nursing Care Offered during the Parturition Process. Controlled Clinical Trial of an Intervention based on Swanson's Theory of Caring versus Conventional Care

María Alejandra Ortega Barco[1]
Lucy Muñoz de Rodríguez[2]

Evaluation of the Nursing Care Offered during the Parturition Process. Controlled Clinical Trial of an Intervention based on Swanson's Theory of Caring versus Conventional Care

Objective. This work sought to compare the evaluation of the nursing care provided during the parturition process in the intervention group based on Swanson's theory of caring versus that of the control group that received conventional care. **Methods.** Preventive-type controlled clinical trial conducted in a tier II hospital in San Gil, Santander (Colombia). During the parturition process, the intervention group received care based on Swanson's theory of caring (n=20) and the control group received conventional care (n=23). During immediate postpartum, the mothers were applied the Professional care rating scale by Swanson, validated into Spanish in Colombia. **Results.** Assessment of

1 Nurse, Masters. Universidad Nacional de Colombia, at Bogotá (Colombia).
email: maortegab@unal.edu.co

2 Nurse, Masters. Professor emeritus, Universidad Nacional de Colombia, at Bogotá (Colombia).
email: lmunozdr@unal.edu.co

Conflicts of Interest: None.

Received: July 28th, 2017

Accepted: November 14th, 2017

How to cite this article: Ortega MA, Muñoz L. Evaluation of the Nursing Care Offered during the Parturition Process. Controlled Clinical Trial of an Intervention based on Swanson's Theory of Caring versus Conventional Care. Invest. Educ. Enferm. 2018; 36(1):e05.

DOI: 10.17533/udea.iee.v36n1e05

Investigación y Educación en
Enfermería
–Nursing Research and Education–
UNIVERSIDAD DE ANTIOQUIA 1803
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

professional care in the intervention group was Excellent with an average for the scale total of 59.8 points of a possible maximum of 60 points, while in the control group it was Good with 50.2 ($p<0.0001$). In the 15 items that make up the scale and in both subscales (Compassionate Healer and Competent Healer) higher scores were also observed in the intervention group compared to those of the control group. Conclusion. The intervention derived from Swanson's theory of caring was associated to a better evaluation of professional nursing care by women during the parturition process.

Descriptors: nursing care; behavior rating scale; labor, obstetric; parturition; controlled clinical trial.

Valoración del cuidado de Enfermería brindado durante el proceso de parto. Ensayo clínico controlado de una intervención basada en la Teoría de Swanson versus cuidado convencional

Objetivo. Comparar la valoración del cuidado de enfermería brindado durante el proceso de parto en el grupo de Intervención basada en la Teoría de Swanson versus la del grupo de Control que recibió cuidado convencional. **Métodos.** Ensayo clínico controlado de tipo preventivo realizado en un hospital de segundo nivel de atención en San Gil, Santander (Colombia). Durante el proceso de parto el grupo de *Intervención* recibió cuidado basado en la Teoría de Swanson ($n=20$) y al grupo de *Control* se le practicó el cuidado convencional ($n=23$). En el postparto inmediato se aplicó a las madres la *Escala de Valoración del cuidado profesional* de Swanson, validada al español en Colombia. **Resultados.** La valoración del cuidado profesional en el grupo de *Intervención* fue *Excelente* con un promedio para el total de la escala de 59.8 puntos de un máximo posible de 60, mientras que en el grupo de *Control* fue *Bueno* con 50.2 ($p<0.0001$). En los 15 *ítems* que conforman la escala y en las dos subescalas (Sanador Compasivo y Sanador Competente) también se observaron mayores puntajes en el grupo de *Intervención* comparados con los del grupo de

Control. **Conclusión.** La intervención derivada de la teoría de Swanson se asoció a una mejor valoración del cuidado profesional de enfermería por parte de las mujeres durante el proceso de parto.

Descriptores: atención de enfermería; escala de evaluación de la conducta; trabajo de parto; parto; ensayo clínico controlado.

Valorização do cuidado de Enfermagem brindado durante o processo de parto. Ensaio clínico controlado de uma intervenção baseada na Teoria de Swanson versus cuidado convencional

Objetivo. Comparar a valorização do cuidado de enfermagem brindado durante o processo de parto no grupo de Intervenção baseada na Teoria de Swanson versus a do grupo de Controle que recebeu cuidado convencional. **Métodos.** Ensaio clínico controlado de tipo preventivo realizado num hospital de segundo nível de atenção em San Gil, Santander (Colômbia). Durante o processo de parto o grupo de *Intervenção* recebeu cuidado baseado na Teoria de Swanson (n=20) e ao grupo de *Controle* se lhe praticou o cuidado convencional (n=23). No pós-parto imediato se aplicou às mães a *Escala de Valorização do cuidado profissional* de Swanson, validada ao espanhol na Colômbia. **Resultados.** A valorização do cuidado profissional no grupo de *Intervenção* foi *Excelente* com uma média para o total da escala de 59.8 pontos de um máximo possível de 60, enquanto que no grupo de *Controle* foi *Bom* com 50.2 (p<0.0001). Nos 15 itens que conformam a escala e nas duas sub-escalas (Curador Compassivo e Curador Competente) também se observaram maiores pontuações no grupo de *Intervenção* comparados com os do grupo de *Controle*. **Conclusão.** A intervenção derivada da teoria de Swanson se associou a uma melhor valorização do cuidado profissional de enfermagem por parte das mulheres durante o processo de parto.

Descritores: cuidados de enfermagem; escala de avaliação comportamental; trabalho de parto; parto; ensaio clínico controlado.

Introduction

The parturition process is a complex phenomenon due to different factors that interact amongst themselves,(1) which can increase the risk of complications and death, and which additionally affect the mother's wellbeing. Likewise, women during the parturition process report feeling mainly fear,(1-3) which alters their performance and comfort, especially in primiparous.(1) These negative emotions,(1) constant pain, affectation in the capacity to make decisions,(4) communication difficulties with the health professionals,(1) and care guided with biological approach translate into negative perception toward the care givers and the parturition.(4)

For women to have a positive experience,(4) participation is recommended from nurses trained and experts in obstetrics during parturition care,(5) given that this favors the naturalness of the event and diminishes rates of caesareans and complications. Through humane care, they can reduce potential problems that arise;(6) however in practice, nursing care is provided routinely,(7,8) with knowledge of the task involved, but without disciplinary theoretical orientation, and although they are suitable professionals to achieve broad benefits and satisfaction of the woman during the parturition process, little time is assigned for this purpose, dedicating over 70% of the time to objectives different from specific care(8) due to different barriers(9) identified by the nurses and by the women.

Even so, nurses have been seen as leaders(10,11) to favor empowerment and control during the parturition process;(10) women value individualized information, explanations, advice, and nursing care(2) and identify the professionals as humanized, respectful, and sensitive to the women's expressions of pain and joy;(2) however, these perceptions are sporadic.

In light of this panorama, it is necessary to provide care based on the theory of the discipline that permits appreciating benefits and wellbeing during the parturition process. Swanson's theory of nursing as informed caring for the well-being of others(12) is the support of the intervention proposed in this study, which guides nurses through the five care processes proposed: Maintaining belief in the woman's capacities to confront the situation, approaching with affection, offering hope and favoring autonomy;(1) Knowing the meaning of the event, without judgments and understanding specific manifestations; Being with - listening to concerns, being available, offering emotional support, and understanding feelings; Doing for - offering physical measures of comfort and information, controlling fear and pain;(2) Enabling – protecting the woman from any type of harm and favoring self-care, guiding in the process. A theoretical analysis was performed and, supported by existing evidence, the specific activities were constructed for nurses to apply care processes during the parturition process.

Seeking to compare the assessment of nursing care offered during the parturition process in the intervention group based on Swanson's theory of caring versus that of the control group, which received conventional care, the intervention proposed was applied and nurses were evaluated, in both groups, with the Professional care rating scale by the same author.(13)

Methods

This was a preventive-type controlled clinical trial. A minimum sample size was calculated of 20 women for each of the study groups, bearing in mind an alpha value of 0.05, a beta value of 0.8, and a minimum difference between groups of 8 points for the scale total. The participants were women over 14 years of age who were hospitalized to care for the parturition process in the maternity service at the Regional Hospital in San Gil, Santander (Colombia) during the period from September to November 2016, and who signed the informed consent.

Assignment of the women to the study groups was done according to the day they were hospitalized during labor. The control group was comprised by the mothers who received conventional care from the maternity service staff plus the skin-to-skin contact during the immediate postpartum, while the intervention group was provided care based on the care processes proposed by Swanson in the Theory of informed caring for the well-being of others.(13) For this intervention, a last-year Nursing student was trained through 6 h of theory, 5 h of supervised practical hours, and 40 h of independent practice on the specific activities of the intervention proposed to be applied during labor and expulsion.

During the immediate postpartum, another last-year Nursing student who ignored to what group the mothers had been assigned, applied the Professional care rating scale based on Swanson's theory of caring(13) to the participants from the intervention and control groups. The rating scale has 15 items with four Likert-type response options: 1 = never, 2 = sometimes yes, sometimes no, 3 = most of the time, and 4 = always. The general classification of professional care is considered according to the total score, thus: <23 = Deficient; 23 to 37 = Regular; 38 to 51 = Good; and 52 to 60 = Excellent (14). The scale applied received semantic validation for Colombia with excellent reliability (Cronbach's alpha: 0.90).(14) To store the information, the study used an electronic device with the scale aggregated, connected to an immediate response to the principal researcher's e-mail and a meticulous record of the women's answers was kept.

This research was approved by the Ethics Committee of the Faculty of Nursing at Universidad Nacional de Colombia and by the Ethics Committee at the Regional Hospital in San Gil. Respect for the dignity of the women prevailed, along with the protection of their rights, and their wellbeing. The study kept in mind the ethical principles contemplated in Legislation 911 of 2004: Beneficence, Non-maleficence, Justice, Autonomy, Fidelity, and Reciprocity. The study was classified as minimum risk and participant information confidentiality was protected.

Results

During the study period, 107 women in labor were admitted to the Hospital's maternity service, 43 of them fulfilled the inclusion criteria; 20 were assigned to the intervention group and 23 to the control group.

Sociodemographic characteristics

The mean age in the intervention group was 25.15±7.91 years versus 24.35±5.77 years in the control group (p=0.893). Table 1 shows that the groups are similar regarding the sociodemographic variables and obstetric history. Most of the women in both groups are between 20 and 35 years of age, are registered in the subsidized regime and report their level of studies to complete secondary. Other common characteristics in these women is that they come from municipalities near San Gil to have their first parturition, with gestations at full term, having as antecedents compliance of prenatal controls and attendance to the motherhood and fatherhood preparation course. Principally, the women in both study groups had no complications during gestation or labor. The parturition lasted 14.85±12.11 h in the intervention group versus 17.65±10.45 h in the control group (p=0.420), with this difference not being statistically significant.

Table 1. General characteristics of the study groups

Variable	Group				*p* value*
	Intervention (*n*=20)		Control (*n*=23)		
	Number	%	Number	%	
Sociodemographic Characteristics					
Age group in years					0.622
15-17	4	20	4	17.39	
18-19	3	15	2	8.70	
20-25	4	20	8	34.78	
26-35	6	30	8	34.78	
36 and more	3	15	1	4.35	
Marital status					0.408
Married	5	25	4	17.39	
Single	5	25	3	13.04	
Common law	10	50	16	69.57	
Healthcare Regime					0.266
Contributive	4	20	2	8.70	
Subsidized	16	80	21	91.30	
Schooling					0.225
Up to primary	9	45	7	30.43	
Up to secondary	9	45	13	56.52	
Technical or university	2	10	0	0.00	
Origin					0.498
San Gil	6	30	8	34.78	
Other municipalities	14	70	15	65.22	
Obstetric history					
Parity					0.867
0	11	55	14	60.87	
1	4	20	5	21.74	
2	3	15	3	13.04	
3	1	5	1	4.35	
4	1	5	0	0.00	
Gestation to term					0.342
Early (37-38.6 weeks)	10	50	9	39.13	
Full (39-40.6 weeks)	10	50	14	60.87	
Planned gestation					0.447
Yes	10	50	14	60.87	
No	10	50	9	39.13	

Table 1. General characteristics of the study groups. (Cont.)

Variable	Group				*p* value*
	Intervention (*n*=20)		Control (*n*=23)		
	Number	%	Number	%	
Number of prenatal controls					0.994
0	1	5	1	4.35	
1-3	1	5	1	4.35	
4-8	14	70	17	73.91	
9 and more	4	20	4	17.39	
Motherhood and fatherhood preparation course					0.865
Yes	17	85	20	86.96	
No	3	15	3	13.04	
Complications during gestation					0.405
Yes	5	25	4	17.39	
No	15	75	19	82.61	
Complications during parturition					0.431
Yes	3	15	2	8.70	
No	17	85	21	91.30	
Use of oxytocin					0.261
Induction	6	30	7	30.43	
Conduction	10	50	15	65.22	
No	4	20	1	4.35	

* Chi square test probability value

Results in the Professional care rating scale

Assessment of professional care in the intervention group was *Excellent* (average 59.8±0.6, minimum = 58, maximum = 60), while the control group was *Good* (average 50.2±7.8, minimum = 39, maximum = 60). Table 2 reviews the average values obtained in each of the items, which per subscale and scale total were higher in the intervention group compared to those of the control group, and all these differences were statistically significant. Specifically, in the intervention group the scores of the 15 items were between 4 and very close to 4 (3.95-3.97), indicating that the questions were mostly answered with the option "always".

It was not found that the scale's total score was affected by possible interactions between the study group with the variables of use of oxytocin (p = 0.85) or time of labor duration (p = 0.57).

Discussion

Most of the women in parturition process for both groups are within the age group 20 to 35 years, corresponding to the ages of highest rates of fertility for Colombia,(6) an important variable given that the two extreme groups, adolescents and women over 35 years of age are of obstetric risk. These data reiterate that found in Europe, Latin America, and Colombia where similar ages are reported.(1,15-17)

Women hospitalized for the birth of their children came from municipalities close to San Gil and many had basic primary and secondary studies, differing from data reported in other Colombian studies(15,18) in which between 50% and 60% of the women had higher levels of schooling; in this research, <5% had this level of schooling and it may be because most of the women come from small towns near San Gil, while the

Table 2. Averages per item, subscale, and scale of the Professional Care Rating Scale according to study group

Subscale	Item	Group		*p* value*
		Intervention	Control	
Compassionate Healer	1. Made you feel well?	3.95±0.22	3.48±0.59	0.002
	2. Showed a positive attitude toward you and their work?	4±0	3.34±0.71	<0.001
	3. Listened attentively?	4±0	3.17±0.88	<0.001
	4. Let you express your feelings?	3.95±0.22	2.74±0.96	<0.001
	5. Showed interest for what happened to you?	4±0	3.04±0.87	<0.001
	6. Understood your symptoms and concerns?	4±0	3.26±0.62	<0.001
	7. Showed they were prepared to do their work?	3.95±0.22	3.52±0.51	0.002
	Average of the Compassionate Healer scale	*3.97±0.07*	*3.22±0.55*	*<0.001*
Competent Healer	8. Encouraged you to take care of yourself during labor?	4±0	3.56±0.51	0.001
	9. Was respectful with you?	4±0	3.65±0.58	0.004
	10. Offered help and collaboration?	4±0	3.17±0.88	<0.001
	11. Performed labor control correctly?	3.95±0.22	3.47±0.59	0.002
	12. Did you feel cared for during your labor?	4±0	3.39±0.66	<0.001
	13. Clearly explained the indications to follow?	4±0	3.26±0.86	<0.001
	14. Was kind with you?	4±0	3.61±0.49	0.002
	15. Treated you like a person?	4±0	3.52±0.51	<0.001
	Average of the Competent Healer scale	*3.99±0.03*	*3.5±0.5*	*<0.001*
	Average of the scale total	59.8±0.6	50.2±7.8	<0.001

* Mann-Whitney U test probability value

Colombian studies were held in Bogotá in sectors with prevalence of high socioeconomic level.(15,18) This reveals the need for intervention to women in parturition process in this province or in regions with similar characteristics. More than half the women were in the parturition of their first child; research in different continents report predominance of primiparous women,(1,15-20) which shows that, in general, women are in a group that requires greater care because they are upon the birth of their first child. Changes of different intensities occur during the parturition process, which behave as a complex phenomenon, especially for the primiparous women, who feel more fear than multiparous women;(1) thus, the interrelationship with nurses improves the woman's performance and wellbeing during the parturition process. It must be highlighted that the parturitions occurred in pregnancies with gestational ages to term, which require principally of care and of the nurse's continuous presence(7,21) to contribute to the naturalness of the process.

Most of the women reported that their gestation was unplanned and this has been associated to the development of post-traumatic stress;(7) additionally, they comply with prenatal controls, but do not attend the motherhood and fatherhood preparation course – although they required it because most were primiparous. This corresponds to a wake-up call for care to be offered from the initial stages of gestation to the moment of parturition; the nurses' presence and the support they provide during labor can diminish the onset of postpartum stress.(22)

Regarding the results of applying the *Professional care rating scale*, it was noted that the score was higher in the intervention group compared to the control group, showing the benefits of applying this care intervention during the mothers' parturition process. These data are a reminder that women request and grant importance to the relational component of nursing care, which influences upon the care assessment, corresponding to that found in Latin American studies.(15,18)

Given that the participants from the intervention group scored the 15 items from the scale with values around 4, it is important to analyze some items in the control group that deserve attention: the reactive with the lowest score was # 4- Let you express your feelings? (2.74), which beckons nurses to keep in mind activities from the process "Being with", broadening care toward feelings, remembering that women during parturition process have mixed feelings.(1) Item 1- Made you feel well? Obtained an average score in the control group of 3.48. By using the linear interpolation of the averages of each item from the scale with its total score, it was found that this score corresponds to the lower limit for professional care considered *Excellent*, hence, the care process "Maintaining belief" requires being delved into by nurses who apply the intervention.

In the *Competent* Healer subscale for the control group, the lowest average scores were: 13- Clearly explained the indications to follow?; and 10- Offered help and collaboration?, which calls on nurses in general to improve in the education and direct care of women during parturition process; these scores obtained a classification of *Excellent* in the intervention group. It should be remembered that women who do not feel cared for by nurses report development of postpartum post-traumatic stress (7), which drives to continue delving into this care intervention and its benefits during the parturition process, expulsion and in the immediate, middle and late postpartum.

The scale's total score for the women who received intervention was in the category of *Excellent*, while being classified as *Good* for the control group, which agrees with the data found in other research,(23) which also applied during prenatal control an intervention derived from Swanson's theory of caring, with before and after measurements, and finding that women value nurses better after the intervention.

Finally, it was observed that in this study's care intervention, the scores were equal in both subscales, that is, they keep in mind the care aspects of Compassionate Healer and Competent Healer, while for the control group the score of the Compassionate Healer subscale was lower. Studies related to the nursing care offered to women during parturition process demonstrate that its evaluation is conceived through two components: one technical – less strong, but not less important – and another relational, considered the most important,(8,15) hence, the interrelation between the nurses and women influences directly on the perception of the care assessment .(15)

The conclusion herein is that the intervention derived from Swanson's theory of caring was associated to a better assessment of the professional nursing care by women during the parturition process. Research should be conducted to continue with the assessment of this study's intervention, as well as explore the different variables related to the process that can modify the scores manifested by the women in the subscales during the evaluation of the professional care and the variables susceptible to modification by the care intervention. Likewise, future research should review the impact of nursing care with evaluations at different times, like during the middle and late postpartum, as well as in women who have been programmed for caesarean.

References

1. Dodou H, Paiva D, Marculino E, Cavalcante M, Nery P, Sousa N. A contribução do acompahante para a humanização do parto e nascimento: percepções de puérperas. Esc. Anna Nery Rev. Enferm. 2014; 18(2):262-9.
2. Hodnett E, Gates S, Hofmeyr G, Sakala C. Continuos support for women during childbirth. Cochrane Database of Systematic Rewiews. 2012; 10:CD003766.
3. Lally J, Thomson R, McPhail S, Exley C. Pain relief in labour: a qualitative study to determine how to support women to make decisions about pain relief in labour. BMC Pregnancy childbirth. 2014; 14:6.
4. Palinski J, Kissula S, Pessoa J, Rejane N, Gualda D. Women's perception of the process of labor coaching: study descriptive. Online Braz. J. Nurs. 2012; 11(2):274 -88.
5. Organización Mundial de la Salud OMS. Mortalidad materna, Nota descriptiva N° 348 [Internet]. 2016 [cited 21 nov 2016]. Available from: http://www.who.int/mediacentre/factsheets/fs348/es/
6. Ministerio de Salud y de la Protección Social. Análisis de Situación de Salud Colombia, 2015 [cited 21 nov 2016]. Bogotá: El Ministerio. Available from: https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/ED/PSP/asis-2015.pdf
7. Andersen L, Melvaer L, Videbech P, Lamont R, Joergensen J. Risk factors for developing post-traumatic stress disorder following childbirth: a systematic review. Acta Obstet. Gynecol. Scand. 2012; 91:1261-72.
8. De Fátima C, Pereira N, Odeh L, Goulart B. Parto de adolescentes: elementos qualitativos da assistência. Rev. Esc. Enferm. USP. 2012; 46(2):287-94.
9. Souza TG, Gaíva MAM, Modes PSSA. A humanização do nascimento: percepção dos profissionais de saúde que atuam na atenção ao parto. Rev. Gaúcha Enferm. 2011; 32(3):479-86.
10. Brasil EGM, Queiroz MVO, Fernandes AFC, Costa RF, Xavier EO. Perception of women on the care in the childbirth: contributions to nursing. Acta Scientiarum Health Sciences. 2013; 35(2):195-200.
11. Hanson L, VandeVusse L. Supporting labor progress toward physiologic birth. J. Perinatal Neonatal Nurs. 2014; 28(2):101-7.
12. Swanson K. Nursing as informed caring for the well-being of others. Image J. Nur. Sch. 1993; 25(4):352–7.
13. Watson J. Assessing and measuring caring in nursing and health science. New York: Springer Pub.; 2002.
14. Vesga L. Ruíz C. Validez y confiabilidad de una escala de cuidado profesional en español. Av. Enferm. 2016; 34(1):69-78.
15. Saavedra D. Comportamientos de cuidado del profesional de enfermería que percibe la gestante en trabajo de parto y parto de una clínica privada [Internet]. Bogotá: Universidad Nacional de Colombia; 2013 [cited 7 Dec 2016] Available from: http://www.bdigital.unal.edu.co/11168/1/deisylorenasaavedrainfante.2013.pdf
16. Silva FMB, Paixao TCR, Oliveira SMJV, Leite JS, Riesco MLGonzalez, Osava RH. Care in a birth center according to the recommendations or the World Health Organization. Rev. Esc. Enferm. USP. 2013; 47(5):1031-8.
17. Giraldo D, González E, Henao C. Experiencias de las mujeres durante el trabajo de parto y parto. Av. Enferm. 2015; 33(2):271-81.
18. Díaz E, Mendoza E. Percepción que tienen las puérperas en relación con el cuidado brindado por el personal de enfermería durante la atención del parto en una institución de cuarto nivel durante el primer semestre del año 2013 [Internet]. Bogotá: Pontificia Universidad Javeriana; 2013. Available from: https://repository.javeriana.edu.co/handle/10554/13773
19. Grilo C, d'Orsi E, Soares R, Alves J, Bastos M, Schneck C, et al. Implementação da presença de acompanhantes durante a internaçao para o parto: dados da pesquisa nacional Nascer no Brasil. Cad. Saúde Publica. 2014; 30:140-53.
20. Whitburn L, Jones L, Davey M. Small, R. Women's experiences of labour pain and the role of the mind: an exploratory study. Midwifery. 2014; 30:1029-35.
21. Organización Mundial de la Salud. Recomendaciones de la OMS para la conducción del trabajo de parto [Internet]. 2015 [cited Dec 1 2016]. Available from: http://www.who.int/topics/maternal_health/directrices_OMS_parto_es.pdf

22. Harris R, Ayers S. What makes labour and birth traumatic?: A survey of intrapartum 'hospots'. Psychol.Health. 2012; 27(10):1166-77.
23. Reyes D. Valoración del cuidado profesional de Enfermería que realizan las adolescentes gestantes antes y después de una intervención de cuidado [Internet]. Bogotá: Universidad Nacional de Colombia; 2016 [cited Nov 28 2016]. Available from: http://www.bdigital.unal.edu.co/52921/1/63533904.2016.pdf.

Original article

Simulation of changes on the psychosocial risk in the nursing personnel after implementing the policy of good practices on the risk treatment

María Paula Bolívar Murcia[1]
Joan Paola Cruz González[2]
Luz Angélica Rodríguez Bello[3]

UNIVERSIDAD
DE ANTIOQUIA
1803

Simulation of changes on the psychosocial risk in the nursing personnel after implementing the policy of good practices on the risk treatment

Objective. Evaluate the change over time of psychosocial risk management for the nursing personnel of an intermediate complexity clinic of Bogota (Colombia). **Methods.** Descriptive and correlational research performed under the approach of risk management (identification, analysis, assessment and treatment). The psychosocial risk of the nursing personnel was studied through 10-year system dynamics models (with and without the implementation of the policy of good practices on the risk treatment) in two scenarios: when the nursing personnel works shifts of 6 hours (morning or afternoon) and when they work over 12 hours (double shift or night shift). **Results.** When implementing a policy of good practices on the risk treatment, the double shift scenario shows an

---

[1] Industrial Engineer. Masters. Escuela Colombiana de Ingeniería Julio Garavito, Bogotá (Colombia).
email:maria.bolivar-m@mail.escuelaing.edu.co

[2] Industrial Engineer, Masters. Assistant Professor, Escuela Colombiana de Ingeniería Julio Garavito, Bogotá (Colombia).
email: joan.cruz@escuelaing.edu.co

[3] Industrial Engineer, Masters. Assistant Professor, Escuela Colombiana de Ingeniería Julio Garavito, Bogotá (Colombia).
email: angelica.rodriguez@escuelaing.edu.co

Conflicts of Interest: None.

Received: October 27th, 2017.

Accepted: February 9th, 2018.

How to cite this article: Bolívar MP, Cruz JP, Rodríguez LA. Simulation of changes on the psychosocial risk in the nursing personnel after implementing the policy of good practices on the risk treatment. Invest. Educ. Enferm. 2018; 36(1):e06.

DOI: 10.17533/udea.iee.v36n1e06

UNIVERSIDAD
DE ANTIOQUIA
1803
Investigación y Educación en
Enfermería
–Nursing Research and Education–
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

improvement among 25% to 88% in the variables of: *health, labor motivation, burnout, service level and productivity*; as well as in the variables of the organization associated to number of patients, nursing personnel and profit. Likewise, the single shift scenario with good practices improves in all the above-mentioned variables and generates stability on the variables of absenteeism and resignations. **Conclusion.** The best scenario is the single shift scenario with the application of good practices of risk treatment in comparison with the double shift scenario with good practices, which allows concluding that the good practices have a positive effect on the variables of nursing personnel and on those associated to the organization.

Descriptors: occupational risks; burnout, profesional; health services administration; nursing staff; risk management.

Simulación del cambio en el riesgo psicosocial en personal de enfermería después de implementación de política de buenas prácticas en el tratamiento del riesgo

Objetivo. Evaluar el cambio en el tiempo de la gestión del riesgo psicosocial para el personal de enfermería de una clínica de tercer nivel de complejidad de Bogotá (Colombia). **Métodos.** Estudio descriptivo y correlacional realizado bajo el enfoque de la gestión del riesgo (identificación, análisis, evaluación y tratamiento). Se estudia el riesgo psicosocial del personal de enfermería mediante modelos de dinámica de sistemas a 10 años (con y sin implementación de política de buenas prácticas en el tratamiento del riesgo) en dos escenarios: cuando el personal de enfermería trabaja turnos de 6 horas (mañana o tarde), y cuando se laboran 12 horas (doble turno o turno de noche). **Resultados.** Al implementar una política de buenas prácticas en el tratamiento del riesgo, el escenario de doble turno evidencia mejora entre el 25% al 88% en las variables de: *salud, motivación laboral, burnout, nivel de servicio y productividad*; así como en las variables de la organización asociadas a número de pacientes, personal de enfermería, y utilidad. Así mismo, el escenario de un solo turno con buenas prácticas genera mejora en todas las variables mencionadas y estabilidad en las variables ausentismo y renuncias. **Conclusión.** El mejor escenario es el de un solo turno, con aplicación de buenas prácticas de tratamiento del riesgo, con relación al escenario de doble turno con buenas prácticas, lo que permite concluir que las buenas prácticas tienen efecto positivo en las variables del personal de enfermería y en las asociadas a la organización.

Descriptores: riesgos laborales; agotamiento profesional; administración de los servicios de salud; personal de enfermería; gestión de riesgos.

Simulação do impacto de políticas de boas práticas no tratamento do risco psicossocial no pessoal de enfermagem

Objetivo. Avaliar a mudança no tempo da gestão do risco psicossocial para o pessoal de enfermagem de uma clínica de terceiro nível de complexidade de Bogotá (Colômbia). **Métodos.** Estudo descritivo e de correlação realizado sob o enfoque da gestão do risco (identificação, análise, avaliação e tratamento). Se estuda o risco psicossocial do pessoal de enfermagem mediante modelos de dinâmica de sistemas a 10 anos (com e sem implementação de política de boas práticas no tratamento do risco) e nos dois cenários: quando o pessoal de enfermagem trabalha turnos de 6 horas (manhã ou tarde), e quando se trabalham 12 horas (duplo turno ou turno de noturno). **Resultados**. Ao implementar uma política de boas práticas no tratamento do risco, o cenário de duplo turno se evidência melhoria entre 25% a 88% das variáveis de: *saúde, motivação laboral, burnout, nível de serviço e produtividade*; assim como nas variáveis da organização associadas a número de pacientes, pessoal de enfermagem, e utilidade. Assim mesmo, o cenário de um só turno com boas práticas gera melhora em todas as variáveis mencionadas e estabilidade nas variáveis ausentíssimo e renúncias. **Conclusão.** O melhor cenário é o de um só turno, com aplicação de boas práticas de tratamento do risco, com relação ao cenário de duplo turno com boas práticas, o que permite concluir que as boas práticas tem efeito positivo nas variáveis do pessoal de enfermagem e nas associadas à organização.

Descritores: riscos ocupacionais; esgotamento profissional; administração de serviços de saúde; recursos humanos de enfermagem; gestão de riscos.

Introduction

Psychosocial risks and labor stress are some of the problems raising more difficulties in the occupational safety and health field(1) and considerably affect people's health, organizations and national economies. For the International Labor Organization,(2) psychosocial risks consist on the interactions between the work, satisfaction and organizational behavior on one part and on the other, the skills of the worker, its needs, its culture and its personal situation outside the work. These factors are one of the problems with greater impact on the labor field causing absenteeism for common disease, labor accidents and occupational diseases, which alters the productivity and quality in the provision of services;(3) in addition, it generates high costs and affectations on the life quality of the workers.

According to Peinador,(4) in the services of a health service provider (IPS), the nursing personnel faces several stressing situations during the performance of their labor functions since their work requires of great responsibility, they have a permanent contact with diseases, they face suffering and death, which causes so many tension, anxiety and depression. Likewise, they must work under pressure, comply with difficult schedules including night shifts, 12-hours shifts and working on Sundays, holidays and special dates, which interferes with their social and family life. The psychosocial risk means the interactions given between the content, organization and management of work and the environmental conditions, in conjunction with the functions and needs of the workers.(2,5,6) The psychosocial risk management is important because these interactions can exercise a harmful influence on the worker's health through its perceptions and experience.(7,8)

Organizations manage the risk through an architecture implying principles, structure and processes and comprising the identification, analysis and assessment of risk, which is denominated as risk valuation.(9,10) Throughout this process, the organizations communicate and consult with the stakeholders in the company and review the risk and the means to reduce it in order to determine which risks require of treatment for its mitigation and control.(11) The identification of risk is made in accordance with the bibliographic review and some of the factors evaluating the set of psychosocial risk factors. This set is a series of surveys created by the Ministry of Social Protection by taking into account Resolution 2646/2008, which allow identifying if there is a psychosocial risk on an institution.(12,13) The risk factors commonly identified are: Burnout Syndrome, (14-16) labor motivation,(17,18) work overload,(19,20) time off work,(17,21) satisfying work environment(16,18,20) and personal life quality.(17,21)

In view of the foregoing, the objective of this research is to assess the psychosocial risk management of nursing personnel of an intermediate level clinic located in the Savanna of Bogota through a system dynamics approach.

Methods

This research has a quantitative nature under the descriptive and correlational approach. It is descriptive because it takes into account primary information, meaning, interviews made to the nursing direction and the nursing personnel of the clinic under study and it is correlational since it proposes to study the relation of the variables intervening in the psychosocial risk management in a health entity through a system dynamics model.

An adaptation of the risk management methodology of standard ISO 31000:2011(11) was used for carrying out this study, which was performed during the first semester of 2017, using a system dynamic to study the clinic as a system, identify the relations between the different risk factors and take control measures that contribute with the improvement of the life quality of nurses and therefore, the patients care. The system dynamics is a tool that allows the construction of simulation models of this research based on the study of the causal relations existing between the parties of the system, in this case, the actors of the clinic, in order to make decisions in complex environments such as health sector.(22) The methodology used for this research comprises two stages: *(i) Identification and analysis of risk:* it comprises the process to find, recognize and describe the risk(11) and thus understanding its nature by considering the risk causes, its positive and negative consequences and the likelihood of its occurrence. It is performed through the problem identification, the development of dynamic hypotheses explaining the problem roots and the construction of a causal diagram or causal cycles.

The causal diagram allows the visualization of the structure and causal relations of the system in order to understand its feedback mechanisms in a temporary scale.(23) It identifies balance feedback cycles to characterize the balance behaviors or search of goals. It also identifies the reinforcement feedback cycles for growth or exponential increment behaviors. This causal model is built using Vensim software; and *(ii) Risk assessment:* it aims at facilitating the decision-making based on the first stage results, it determines the risks needing for treatment and the priority for its implementation.(11) A simulation model of the system is constructed to analyze the root causes of the problem in a quantitative manner, which must be validated to demonstrate that it satisfactorily reproduces the behavior observed in the reality. This model is denominated as Forrester diagram and is a diagram f levels, flows and variables that performs a simulation of its behavior over the time.(22) This model allows evaluating the scenarios and policies of intervention of the system. It is designed by taking into account the cycles identified in the causal diagram and it is also developed by using the Vensim software. The data for the simulation is obtained through interviews performed in the clinic under study.

The gathering of information necessary for the development of the model was performed in 2017 in an intermediate complexity clinic located in the Savanna of Bogota (Colombia). The nursing personnel of this institution was comprised by: 143 assistants, 73 head nurses, 7 coordinators, 1 nursing director and 1 advisor of external unit, for a total of 225 persons.

The calculation of variables and some assumptions of the model are made based on the following: a) health was calculated on a scale from 0 to 100, where 0 is bad health condition and 100 is an optimal health condition. There is an initial value of 50 which indicates a normal health condition, b) labor motivation is also calculated from 0 to 100, where 100 indicates that health care personnel is very motivated and 0 that it is not, and c) Burnout Syndrome is measured from 0 to 20. It begins with a Burnout value of 0 and in the extent the syndrome increases, the value tends to the higher limit.(24)

The calculation of *lookups table*, which are output data in accordance with predetermined input values necessary for the simulation, is made by determining the behavior of the variables to be detailed, whether these are directly or inversely proportional. For the case of the burnout impact lookup on labor motivation, it is calculated as follows: Burnout impact on labor motivation = WITH LOOKUP (Burnout), ([(0,0) -(100,10)], (1,0.1), (2,0.2), (3,0.3), (4,0.4), (5,0.5), (6,0.6), (7,0.7), (8,0.8), (9,0.9), (10,0.9))). Values x represent the Burnout Syndrome and values y represent the impact that the burnout would have on the labor motivation. Since these are inversely proportional variables, the higher the value of the Burnout Syndrome is, the higher the negative impact on the labor motivation since this lookup is a variable that affects the decrease flow of labor motivation. In the calculation equation, when the burnout has a value of 10, the impact on the motivation will be high, meaning of 0.9 resulting on a considerably reduction on the motivation level. The same calculation is performed for the other flows with similar characteristics and in different proportions.

The simulation is made in two scenarios: when the nursing personnel only works in a shift of 6 hours (morning or afternoon) and when it works 12 hours (double shift or night shift). The validation of the model is made by using the techniques of the system dynamics methodology in order to verify that it is consistent and coherent on its results.(22) In addition, the model, causality relations and results obtained are evaluated by the nursing leader of the clinic in order to confirm that the structure of the system at her charge corresponds to that shown in the models as diagram.

The selection of one or more options is involved in the Risk Treatment stage for amending the risks and assessing them in the light of the model built. The treatment provides controls or allows the modification of risks. The model built is used for assessing them and different alternatives or policies improving the problematic situation are designed and incorporated.(22)

In the risk treatment stage, the implementation of a policy of good psychosocial risk practices of nursing personnel (meditation and relaxing, physical exercise, work breaks, sleep and rest habits, self-control and eating habits) is proposed in the health care entity(25,26) and good psychosocial risk practices at the IPS level (burnout information and prevention campaigns, training for improving the productivity, work recognition, progress opportunity in the organization, work breaks, economic benefits)(25,26) in both scenarios established in the simulation. The above in order to evaluate changes on the behavior of the system and compare those results between scenarios.

Results

According to each of the stages described in the methodology, the results obtained in this research are as follows:

Identification and Analysis of Risk

The model of causal cycles proposed in Figure 1 shows the relations between the psychosocial risk factors such as: Burnout Syndrome, work overload, labor motivation, time off work, personal life quality and satisfaction of working environment. Consequently to these factors and specifically to Burnout, the following derives: absenteeism, occupational diseases, low productivity of personnel due to physical and mental tiredness and dissatisfaction of working environment. The above leads to an increment on staff turnover by generating an increase on the costs related to the personnel.

The behavior of some feedback cycles comprising the model is described below as well as the findings resulting from the analysis:

R (+) If the Burnout Syndrome of nurses in an IPS increases, there would be more absenteeism and therefore, the nursing personnel turnover index and the costs associated to the personnel increase by reducing the profits of the IPS causing that the institution does not have sufficient budget to provide economic benefits to the nursing personnel which generates again an increment of the syndrome. This cycle corresponds to a positive feedback of the model where the generation of the Burnout Syndrome is reinforced.

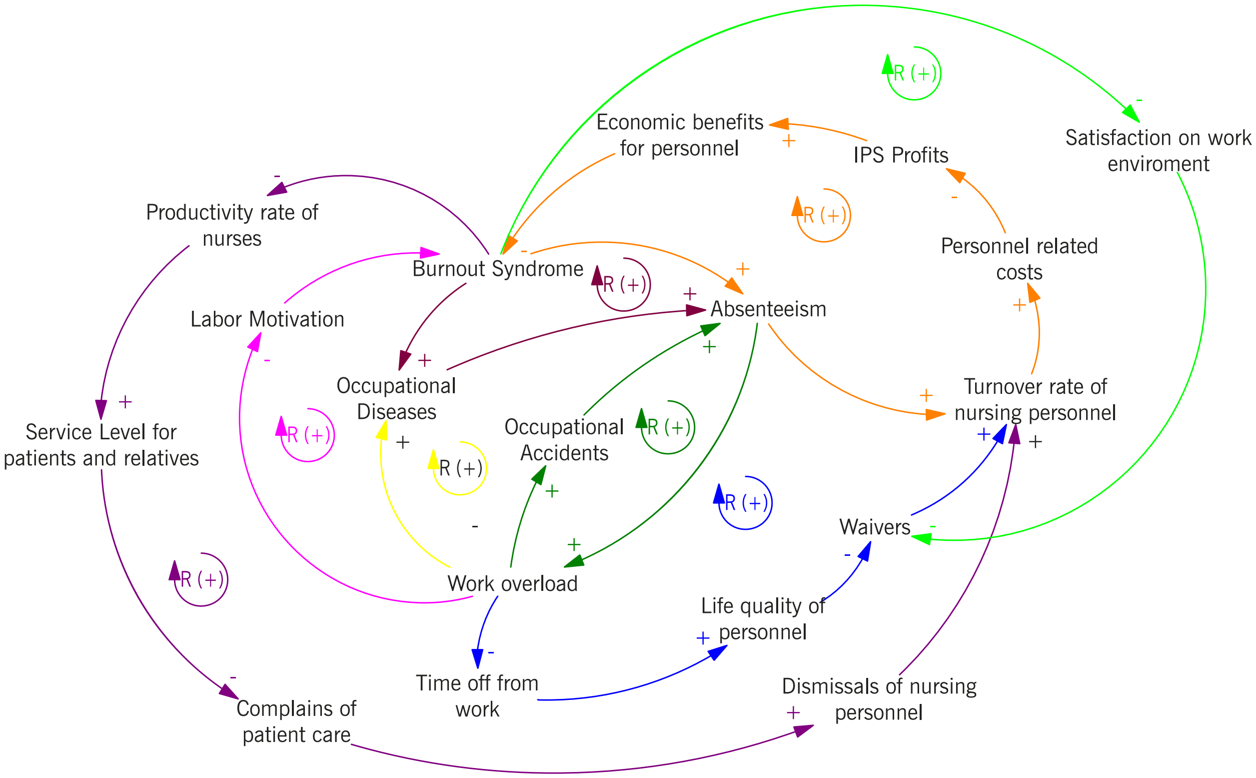

Figure 1. Causal Diagram. Analysis of Psychosocial Risk

R (+) R (+) R (+) The work overload of nursing personnel shall cause the occurrence of an increment both in occupational diseases and accidents, which generates more absenteeism increasing again the work overload of the nurses covering the shifts of the disabled partners. In turn, this overload leads to less time off the work, the personnel life quality is affected by the lack of familiar life and personal relationships causing the resignation to their job and thus increasing the staff turnover index and therefore the work overload. These loops also reinforce the unwanted behavior of this system.

R (+) Again, the increment of the Burnout Syndrome in the personnel of an IPS decreases its productivity index which is reflected on the service level towards the patients and relatives, which will cause an increment of complaints regarding the patient care. This results on the IPS is bound to dismiss the personnel which increases the nursing staff turnover index and the costs associated to new personnel training. This reduces the profit and the economic benefits and reinforces the increment of Burnout Syndrome.

R (+) Another consequence of the increment on Burnout Syndrome is the dissatisfaction with the labor environment since the relationships between doctors and nurses is affected by the lack of commitment and labor motivation of the persons suffering this syndrome, generating the increment of resignations and nursing personnel turnover index that will trigger a greater increase of Burnout Syndrome. Again, this cycle shows a reinforcement behavior in the system.

Risk Assessment

The model proposed in Figure 2 simulates the behavior of the different variables affecting the psychosocial risk of nursing personnel over 10 years. Forrester diagram is comprised by 7 levels (health, burnout, labor motivation, IPS patients, revenues per patients, costs of personnel and nursing personnel), 13 flows and 43 variables. Nursing personnel works on shifts of 6 hours in the morning or afternoon and the night shift or weekend shift of 12 hours. In some cases, due to the labor absenteeism, some persons work double shifts of 12 daily hours or when they exchange a shift with any partner for covering personal issues.

The average monthly wage of nursing personnel is COP$ 1.2 millions (USD$ 400). Every year, 452 364 patients of all the areas enter into the clinic and 6 072 patients are discharged on hospitalization areas. The annual revenues of the IPS correspond to COP$ 61 824 millions (USD$ 20.6 millions) and costs to COP$ 69.996 millions (USD$ 23.3 millions). In average, the revenue per patient in one year corresponds to COP$ 10 181 millions (USD$ 3 394).

The annual percentage of resignations from nursing personnel is 3.6%, the absenteeism percentage is 1.13% and dismissals of 2.89%. Regarding the service quality, the indicator of the annual service level of nursing personnel corresponds to 78% and annual average percentage of satisfied patents according to the satisfaction survey corresponds to 98.43%.

Risk Treatment

This section shows the results of Forrester diagram when implementing the good psychosocial risk practices. The behavior that the different variables have when applying the good practice policies or before their absence is shown in Table 1. Initially, the variables associated to the nursing personnel such as: health, burnout, labor motivation, service level and productivity can be observed.

Regarding *health*, working only one shift, whether at morning or afternoon, health increases in year 10 with the policy of good psychosocial risk practices by 60% in comparison when working only one shift that does not include the policy. When working double shift or night shift, health significantly decreases in time and especially when the policy is not included. Regarding the *burnout*, it can be evidenced that the data of double shift with policy and without policy significantly increase over time with a difference of 88.5% in year 10, with respect to the data of only one shift with policy. In *labor motivation*, we can observe a difference of 91.1% in the data of only one shift with policy with respect to the data of only one shift without policy ibn year 10, which indicates that the implementation of the policy has a significant benefit. *Service level* as well as labor motivation in only one shift with policy increases over time in comparison with the other data that decrease. The data of double shift with and without policy remain constant in a level of 74 from year 4.

A decrease is evidenced in the *productivity* over the years when working on double shift with or without policy; in contrast when working only one shift, the productivity increases and in year 10 it reaches 24; for only one shift without policy it reaches only 11.

Other result variables associated to the organization are shown in Table 2. Those variables are: *IPS patients*, nursing personnel, resignations, dismissals, absenteeism and profit. IPS Patients, when working one shift with policy, significantly increases from year 5 with respect to the other data. If working on double shift with or without policy, the number of patients maintains in 700,000 approximately from year 3. An increment is evidenced on the nursing personnel for all the data over time due to the increment of patients every year; however, there is a difference of approximately 10% when working a double shift.

Regarding the *resignations*, we can evidence that they increase over time because of the increment of nursing personnel every year. However, when working double shift with or without policy, year 10 reaches 26 resignations in comparison with 20 resignations in the same year when working only one shift with policy.

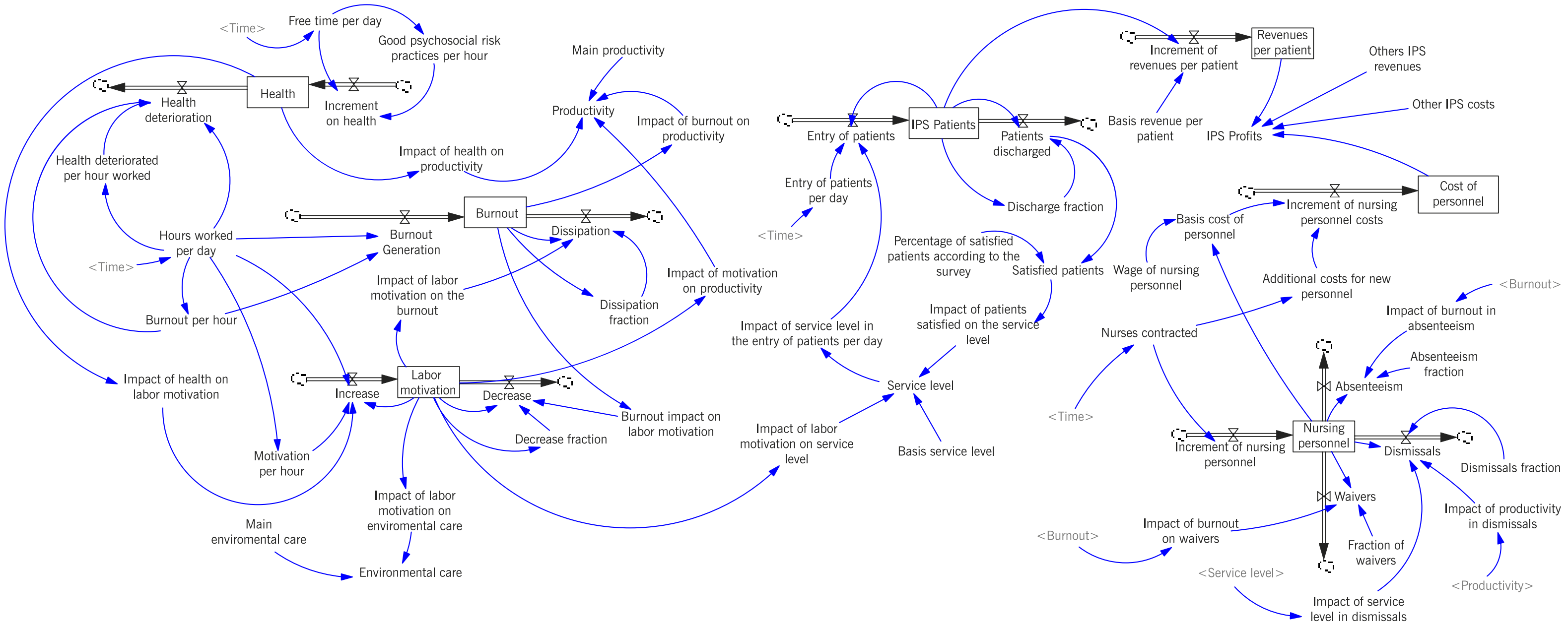

Figure 2. Forrester Diagram. Psychosocial Risk Treatment

Table 1. Behavior of variables associated to Nursing Personnel during the simulation period

Result Variable	Year										
	0	1	2	3	4	5	6	7	8	9	10
Health											
Only one shift with policy	50.0	52.2	54.3	55.5	58.7	62.0	66.5	67.6	69.8	70.9	73.1
Double shift (or night) with policy	50.0	46.1	42.2	37.3	34.5	31.7	30.1	25.2	21.3	16.4	12.5
Double shift (or night) without policy	50.0	41.6	33.2	24.8	16.4	8.0	-0.4	-8.8	-17.2	-25.6	-34.0
Only one shift without policy	50.0	47.7	45.3	43.0	40.6	38.3	36.0	33.6	31.3	28.9	26.6
Burnout											
Only one shift with policy	0.0	1.8	2.2	2.3	2.4	2.4	2.3	2.3	2.2	2.1	2.0
Double shift (or night) with policy	0.0	6.0	7.5	9.3	11.8	13.8	15.2	16.1	16.7	17.2	17.5
Double shift (or night) without policy	0.0	6.0	7.5	9.6	12.4	14.2	15.4	16.3	16.9	17.3	17.5
Only one shift without policy	0.0	1.8	2.2	2.4	2.6	2.9	3.2	3.6	4.0	4.4	4.7
Labor motivation											
Only one shift with policy	50.0	51.5	51.3	51.2	51.5	53.2	55.8	59.6	62.1	64.8	66.8
Double shift (or night) with policy	50.0	50.7	31.9	13.3	3.0	1.8	1.4	1.2	1.1	1.0	1.0
Double shift (or night) without policy	50.0	50.7	27.3	8.4	1.5	1.1	0.9	0.9	0.9	0.9	0.9
Only one shift without policy	50.0	51.5	47.8	41.9	34.5	26.8	20.0	14.5	10.3	7.3	5.9
Service level											
Only one shift with policy	96.7	97.0	96.9	96.9	97.0	97.2	97.6	98.2	98.6	99.0	99.3
Double shift (or night) with policy	96.7	96.8	93.9	80.6	74.1	74.1	74.1	74.1	74.1	74.1	74.1
Double shift (or night) without policy	96.7	96.8	91.5	76.8	74.1	74.1	74.1	74.1	74.1	74.1	74.1
Only one shift without policy	96.7	97.0	96.4	95.5	94.3	91.1	85.8	81.5	78.2	75.9	74.8
Productivity											
Only one shift with policy	20.0	20.0	20.0	20.1	20.4	21.1	22.1	23.0	23.6	24.0	24.4
Double shift (or night) with policy	20.0	16.6	12.8	7.7	5.4	5.1	4.9	4.4	4.0	3.5	3.2
Double shift (or night) without policy	20.0	16.1	11.4	5.3	3.5	2.7	2.0	2.0	2.0	2.0	2.0
Only one shift without policy	20.0	19.6	18.6	17.7	16.6	15.5	14.4	13.4	12.4	11.9	11.4

With respect to the *dismissals*, we can evidence that when the nursing personnel only works one shift, the dismissals reach 20 in year 10 when the policy is implemented; in contrast, when working double shift with or without policy, these reach 30 in year 10. On the other part, if the policy is not implemented when working only one shift, the dismissals can exceed 30 in year 10, meaning, for the case of dismissals, that it is necessary to implement the policy when working only one shift.

Absenteeism shows an increment over time. Notwithstanding, when working double shift, 8 absenteeism cases can be reached in year 10 with or without policy, but when working only one shift with the policy, 6 absenteeism cases can be reached in year 10. *IPS profit* shows an increment over time, but when the work is only for one shift and the policy is implemented, the profit is 28% higher than when working double shift. Year 0 begins with loses due to the current condition of the clinic.

Table 2. Behavior of Variables Associated to the Organization

Result Variable	Año										
	0	1	2	3	4	5	6	7	8	9	10
IPS Patients											
Only one shift with policy	452 364	528 039	612 323	709 844	822 800	954 086	1.1E+10	1.3E+11	1.5E+11	1.8E+10	2.1E+10
Double shift (or night) with policy	452 364	528 039	611 680	677 745	692 663	695 250	697 849	700 460	70 3083	705718	708366
Double shift (or night) without policy	452 364	528 039	611 680	654 732	662 617	665 094	667 583	670 082	672 594	675118	677653
Only one shift without policy	452 364	528 039	612 323	706 479	804 725	898 223	956 345	993 979	1.0E+10	1.0E+11	1.0E+11
Nursing personnel											
Only one shift with policy	227	246	262	287	319	351	381	410	442	475	508
Double shift (or night) with policy	227	246	260	280	301	320	335	347	362	377	391
Double shift (or night) without policy	227	246	260	280	301	319	334	345	360	375	389
Only one shift without policy	227	246	262	286	318	349	375	395	417	438	457
Resignations											
Only one shift with policy	8	9	10	11	12	14	15	16	17	18	20
Double shift (or night) with policy	8	11	12	14	17	19	21	22	23	25	26
Double shift (or night) without policy	8	11	12	14	17	19	21	22	23	25	26
Only one shift without policy	8	9	10	11	12	14	15	16	17	19	20
Dismissals											
Only one shift with policy	11	12	12	14	15	16	16	17	18	19	20
Double shift (or night) with policy	11	12	14	21	22	24	25	26	28	29	30
Double shift (or night) without policy	11	12	14	21	23	24	26	26	28	29	30
Only one shift without policy	11	12	13	14	16	20	25	27	30	31	32
Absenteeism											
Only one shift with policy	2	3	3	3	4	4	4	5	5	5	6
Double shift (or night) with policy	2	3	4	4	5	6	6	7	7	7	8
Double shift (or night) without policy	2	3	4	4	5	6	6	7	7	7	8
Only one shift without policy	2	3	3	3	4	4	4	5	5	6	6
IPS Profit											
Only one shift with policy	-7.0E+14	-8.5E+14	6.3E+15	1.5E+16	2.4E+15	3.6E+16	4.9E+16	6.4E+16	8.1E+15	1.0E+17	1.3E+17
Double shift (or night) with policy	-7.0E+14	-8.5E+14	6.3E+15	1.5E+16	2.4E+16	3.3E+16	4.3E+16	5.2E+16	6.2E+16	7.1E+16	8.1E+16
Double shift (or night) without policy	-7.0E+14	-8.5E+14	6.3E+15	1.5E+16	2.4E+15	3.3E+16	4.2E+16	5.1E+16	6.0E+16	6.9E+16	7.8E+16
Only one shift without policy	-7.0E+14	-8.5E+14	6.3E+15	1.5E+16	2.4E+16	3.5E+16	4.7E+16	6.0E+16	7.4E+16	8.8E+16	1.0E+17

Discussion

This research evaluated psychosocial risk management in the personnel of an intermediate level clinic located in the Savanna of Bogota using a systems dynamics approach in order to have information to improve the decision making of the clinic under study.

According to the results obtained, if the health institutions invest in the implementation of good practices to prevent psychosocial risk, the nursing personnel will be positively influenced by increasing good habits to make their work more satisfactory. The above, besides being beneficial for the personnel, increases over time the profits in the institutions as well as the level of care to patients and relatives. By implementing the policy of good practices in the double shift scenario there is evidence of improvement in the following variables: health, labor motivation, burnout, service level and productivity and no changes are generated in absenteeism, resignations and dismissals. Likewise, in the scenario of a single shift of 6 hours considerable improvements are presented. In relation to the double shift, it is improved between 25% and 88% in all variables except for absenteeism and resignations that remain stable. Although working double shift or night shift is not the best option from the organizational point of view, good practices reduce their negative impact on staff.

The above reinforces what has been stated by several authors(1,3,7,8) who affirm that psychosocial risks are one of the most difficult problems in the field of occupational safety and health, generating absenteeism due to common illness, accidents at work and occupational diseases, which alters productivity and quality in the provision of services; It also generates high costs and changes in the life quality of workers.

The results of the behavior of the variables over time allow us to conclude that working only one shift, either in the morning or in the afternoon, is the best alternative that the Management of the intermediate clinic of the Savanna of Bogota can take when performing the shift assignment of the nursing personnel. This decision benefits the IPS in terms of its profits, productivity, service level and personnel satisfaction. In the future this is reflected in lower personnel turnover and, therefore, in lower hiring and training costs. Making these changes at the administrative level may not be feasible for all health entities, so the change of shifts time can be an alternative; for example, 3 shifts per day of 8 hours can be established. Another alternative is the increment in the frequency of good practices, which can guarantee adequate results for the nursing personnel and the organization.

As researchers we found that modeling the behavior of psychosocial risk management of nursing personnel in the Integrated Management System of a health entity through systems dynamics is a successful and innovative methodology, which allows viewing the factors and consequences of these risks in a holistic manner, helping to make managerial decisions and to create strategic policies in an IPS.

Other authors(23,26) use this methodology to simulate the risk management of other types of risks, but not specifically of psychosocial risk or of the nursing personnel. The studies of psychosocial risk of the nursing personnel and its different factors and consequences(3,4) are carried out through different descriptive tools, but do not use a methodology that allows to see in a holistic way how this psychosocial risk can affect the nursing personnel and IPS through simulation. This research work is relevant for the sector since, according to the bibliographic review and interviews with the nursing personnel of the intermediate clinic of the Savanna of Bogota, no study with these characteristics was carried out, which makes possible to improve the management decision making in health entities.

Finally, the authors acknowledge that it is important to carry out studies in the future that explore other variables that may influence psychosocial risk, such as the relationship between co-workers and between superiors and subordinates, the sense of belonging or passion towards the profession, the study of good practices separately to identify the particular effects they may have on personnel and risk management, the evaluation of other scenarios that distinguish additional alternatives to shift changes and the number of working hours, among others. Although some of these alternatives can be considered as limitations to the built model, the development achieved in this research is an innovative and relevant progress for the field of health that opens the doors to continue exploring and generating knowledge in the branch of psychosocial risk management and system dynamics as a tool to improve the decision making of health entities.

References

1. Agencia Europea para la Seguridad y la Salud en el trabajo. Los riesgos psicosociales y el estrés en el trabajo [Internet]. [cited 23 Jan 2018]. Available from: https://osha.europa.eu/es/themes/psychosocial-risks-and-stress.
2. Organización Internacional del Trabajo. Los factores psicosociales en el trabajo: reconocimiento y control. Ginebra: Oficina Internacional del Trabajo; 1986.
3. Bustillo M, Rojas J, Sánchez A, Sánchez L, Montalvo A, Rojas M. Riesgo psicosocial en el personal de enfermería. Servicio de urgencias en hospital universitario de Cartagena. Duazary. 2015; 12(1):32-40.
4. Peinador R. Factores psicosociales. Estrés laboral y Enfermería. Rev. Méd. Electron. 2013 [cited 23 Jan 2018]. Available from: https://www.revista-portalesmedicos.com/revista-medica/factores-psicosociales-estres-laboral-enfermeria/
5. Martínez C. Seguridad y salud en el trabajo. Estrés laboral y cáncer. 2008; (46):46-50.
6. Taub M, Olivares V. Factores psicosociales desde una perspectiva positiva. Cienc. Trab. 2009; 11(32): A27.
7. Guadix J, Carrillo J, Onieva L, Lucena D. Strategies for psychosocial risk management in manufacturing. J. Bus. Res. 2015; 68(7):1475–80.
8. Charria V, Sarsosa K, Arenas F. Factores de riesgo psicosocial laboral: métodos e instrumentos de evaluación. Rev. Fac. Nac. Salud Pública. 2011; 29(4): 380-91.
9. Casares I. La necesidad de una gestión eficaz del riesgo en las empresas [Internet]; 2011 [cited Jan 23th 2018]. Available from: http://www.mcasares.es/wp-content/uploads/2016/02/la_necesidad_de_una_gestion_eficaz_del_riesgo_en_las_empresas.pdf
10. Icontec. NTC ISO 31010 Gestión de riesgos. Técnicas de valoración del riesgo. Colombia; 2009.
11. Icontec. NTC ISO 31000 Gestión del riesgo. Principios y directrices. Colombia; 2011.
12. Ministerio de la Protección Social. Batería de Instrumentos para la evaluación de factores de riesgo psicosocial [Internet]. 2010 [cited 23 Jan 2018]. Available from: http://docplayer.es/8258944-Bateria-de-instrumentos-para-la-evaluacion-de-factores-de-riesgo-psicosocial.html
13. Ministerio de la Protección Social. Resolución 2646 de 2008. Colombia; 2008.
14. Abenza J, Sáez P, Ventura M, Sáez N, García J, Torres S. Análisis de los factores psicosociales en los profesionales de enfermería de una UCI polivalente. Investigación en Salud Envejecimiento. Volumen II [Internet]; 2014 [cited Jan 23th, 2018]. Available from: https://formacionasunivep.com/documents/publicaciones/investigacion-en-salud-y-envejecimiento-volumenII.pdf
15. Carugno M, Pesatori AC, Ferrario MM, Ferrari AL, Silva FJ, Martins AC, Felli VE, et al. Physical and psychosocial risk factors for musculoskeletal disorders in Brazilian and Italian nurses. Cad. Saude Publica. 2012; 28(9):1632-42.
16. Manrique D, Martínez P, Ortega L. Factores de la seguridad laboral y síndrome de desgaste profesional en los licenciados en enfermería de un prestador público [Internet]. Montevideo: Universidad de la República (Uruguay). 2014 [cited Jan 23th, 2018]. Available from: https://www.colibri.udelar.edu.uy/jspui/handle/123456789/7378
17. Demir D, Rodwell J. Psychosocial Antecedents and Consequences of Workplace Aggression for Clinic Nurses. J Nurs Scholarsh. 2012; 44(4):376-84.
18. Khamisa N, Peltzer K, Oldenburg B. Burnout in Relation to Specific Contributing Factors and Health.Outcomes among Nurses: A Systematic Review. Int. J. Environ. Res. Public Health. 2013; 10:2214-40.

19. Ceballos P, Valenzuela, Paravic KT. Factores de riesgos psicosociales en el trabajo: género y enfermería. Av. Enferm. 2014; (32): 2:271-9.
20. Pulido M, Landa J, Lopez E. Sources of stress in nursing students: a systematic review of quantitative studies. Int. Nurs. Rev. 2012; 59:15–25.
21. Gao Y, Pan B, Sun W, Wu H, Wang J, Wang L. Anxiety symptoms among Chinese nurses and the associated factors: a cross sectional study. BMC Psychiatry. 2012; 12:141.
22. Sterman J. Busyness Dynamics - systems thinking and modeling for a complex world. McGraw-Hill Higher Education; 2000.
23. Morlan I. Modelo de Dinámica de Sistemas para la implantación de Tecnologías de la Información en l a Gestión Estratégica Universitaria [Dissertation]; Donostia – San Sebastián: Universidad del País Vasco; 2010 [cited 23 Jan 2018]. Available from: http://www.ehu.eus/i.morlan/tesis/memoria/TesisIMcompleta.pdf
24. Richmond B. An Introduction to Systems Thinking with STELLA. Ithink; 2013.
25. CEM. Guía de prevención de riesgos psicosociales en el trabajo [Internet]. 2013 [cited 23 Jan 2018] . Available from: http://www.cem-malaga.es/portalcem/novedades/2013/CEM_guia_riesgos_psicosociales_interactivo.pdf
26. Herrera D, Bleijenbergh I. Cutting the Loops of Depression: a System Dynamics Representation of the Feedback Mechanisms Involved in Depression Development And Its Treatments [Internet]. 2016 [cited 23 Jan 2018]. Available from: https://www.semanticscholar.org/paper/Cutting-the-Loops-of-Depression-a-System-Dynamics-Herrera/237e3156ff5e9fdf44608bd5a7e4a03f72464f2e l

Original article

Family Economic Burden Associated to Caring for Children with Cancer

Mercedes Rativa Velandia[1]
Sonia Patricia Carreño Moreno[2]

UNIVERSIDAD DE ANTIOQUIA
1803

Family Economic Burden Associated to Caring for Children with Cancer

Objective. This work sought to determine the family economic burden associated with caring for the child with cancer. **Methods.** Descriptive study with quantitative approach. The sample comprised 50 families of children with cancer attending a foundation in Bogotá (Colombia), which accompanies integrally children with lupus and cancer from a vulnerable population (providing food, psychological and spiritual advice, lodging, transportation and education). An identification file was employed to characterize the subjects and the Survey "Financial cost of caring for Chronic illness" by Montoya *et al*. The analysis was performed through the methodology "Economic burden attributable to caring for a person with chronic illness in Colombia" (CARACOL, for the term in Spanish), which quantifies the level of burden in sexagesimal degrees and the financial cost of the burden; a higher number of sexagesimal degrees indicate a higher level of economic burden. **Results.** Families of children with cancer have a high economic burden, in particular in transportation

1 Nurse, Masters. Instructor, Servicio Nacional de Aprendizaje (SENA, C.F.T.H.S), Bogotá (Colombia).
email: mrativav@unal.edu.co

2 Nurse, Ph.D. Professor, Universidad Nacional de Colombia, at Bogotá (Colombia).
email: spcarrenom@unal.edu.co

Conflicts of Interest: None.

Received: July 14th, 2017.

Accepted: November 14th, 2017.

How to cite this article: Rativa M, Carreño SP. Family Economic Burden Associated to Caring for Children with Cancer. Invest. Educ. Enferm. 2018; 36(1):e07.

DOI: 10.17533/udea.iee.v36n1e07

(28.5°), communications (26.3°), health (20.8°), housing (19.7°), and food (17.4°). **Conclusion.** The families have a high economic burden associated with caring for the child with cancer. It is necessary to implement social support strategies to these families to keep the economic burden from interfering with adherence to treatment and, hence, with the child's survival.

Descriptors: cost of illness; neoplasms; child.

Carga financiera familiar asociada al cuidado del niño con cáncer

Objetivo. Determinar la carga financiera familiar asociada al cuidado del niño con cáncer. **Métodos.** Estudio descriptivo con abordaje cuantitativo. La muestra estuvo constituida por 50 familias de niños con cáncer que están vinculadas a una fundación en Bogotá (Colombia) y que acompaña de forma integral (alimentación, asesoría psicológica y espiritual, hospedaje, transporte y educación) a niños de población vulnerable con diagnóstico de lupus y cáncer. Se empleó una ficha de identificación para caracterizar a los sujetos y la Encuesta "Costo financiero del cuidado de la Enfermedad crónica" de Mayorga *et al*. El análisis se realizó mediante la metodología "Carga financiera atribuible al cuidado familiar de una persona con enfermedad crónica en Colombia" –CARACOL- que cuantifica el nivel de la carga en grados sexagesimales y el costo financiero de la carga: a mayor número de grados sexagesimales es mayor el nivel de carga financiera. **Resultados.** Las familias de los niños con cáncer tienen una alta carga financiera, en particular en transporte (28.5°), comunicaciones (26.3°), salud (20.8°), vivienda (19.7°) y alimentación (17.4°). **Conclusión.** Las familias tienen una elevada carga financiera asociada al cuidado del niño con cáncer. Es necesario la implementación de estrategias sociales de apoyo a estas familias con el fin de evitar que la carga financiera interfiera con la adherencia al tratamiento y, por tanto, con la supervivencia del niño.

Descriptores: costo de enfermedad, neoplasias, niño.

Carga financeira familiar associada ao cuidado da criança com câncer

Objetivo. Determinar a carga financeira familiar associada ao cuidado da criança com câncer. **Métodos.** Estudo descritivo com a abordagem quantitativo. A amostra esteve constituída por 50 famílias de crianças com câncer que estão vinculadas a uma fundação em Bogotá (Colômbia) que acompanha de forma integral (alimentação, assessoria psicológica e espiritual, hospedagem, transporte e educação) a crianças de população vulnerável com diagnóstico de lúpus e câncer. Se empregou uma ficha de identificação para caracterizar aos sujeitos e a Enquete "Custo financeiro do cuidado da Doença crónica" de Mayorga *et al*. O análise se realizou através da metodologia "Carga financeira atribuível ao cuidado familiar de uma pessoa com doença crônica na Colômbia" –CARACOL- que quantifica o nível da carga em graus sexagesimais e o custo financeiro da carga; a maior número de graus sexagesimais é maior o nível de carga financeira. **Resultados.** As famílias das crianças com câncer tem uma alta carga financeira, em particular no transporte (28.5°), comunicações (26.3°), saúde (20.8°), vivenda (19.7°) e alimentação (17.4°). **Conclusão.** As famílias têm uma elevada carga financeira associada ao cuidado da criança com câncer. É necessário a implementação de estratégias sociais de apoio a estas famílias com o fim de evitar a carga financeira interfira com a aderência ao tratamento e, por tanto, com a supervivência da criança.

Descritores: efeitos psicossociais da doença; neoplasias; criança.

Introduction

Globally, between 2001 and 2010 there was a rate of cancer incidence of 140 cases per million children under 15 years of age, which corresponded to the diagnosis of nearly 300,000 new cases during that period,(1) with leukemia being the most common type of childhood cancer (rate of 46.4 per million), followed by tumors of the central nervous system (rate of 28.2 per million) and lymphomas (rate of 15.2 per million).(2) During the period from 2007 to 2011, it was estimated that for Colombia the annual incidence rate for all types of tumors, except skin, in the country was 11.4 per 100,000 in boys and 8.7 per 100,000 in girls.(3)

Childhood cancer affects families in several items of their lives, including the financial, a situation that can influence upon the late initiation of treatment, adherence, and remission to specialized levels of care, which may mean the difference between life and death.(4) Likewise, cancer treatment in its early stages is intense because complete remission is expected, needing frequent hospitalizations and the transfer of the child and the caregiver from the home to the hospital, which causes disorders in the family life routine,(2) in the role of each family member, in the schooling of the sick child and of other children.(5)

Within the financial affectation of childhood cancer in families, literature reports a change in the routines that affects the lives of the families, influencing not upon the unity, relationship, and emotional state of its components; it will also suffer at the work level due to the loss or abandonment of work, which has financial repercussions.(6) Upon the need for continuous companionship for the child during treatment and course of the illness, some parents must abandon or diminish their hours of work, a condition that brings as consequence a decrease in the family income.(7)

The burden of care is identified both in the principal caregiver as in the family group by the alteration in the family functionality and impact upon the financial, social, and personal spheres.(8) The family economic burden is defined as the added financial effort the family of a child with cancer must assume to provide the care needs.(9) The family financial affectation has been studied in families of people with chronic illness in Colombia(10,11) and Guatemala,(12) reporting that the greatest affectation takes place in the health area. In childhood cancer, the particularity of the experience and treatment suggests differentiating this phenomenon from general chronic illness, which is why the aim of this study was to determine the family economic burden associated with caring for the child with cancer.

Methods

This descriptive, cross-sectional study was conducted between 2015 and 2017. A convenience sampling was done of 50 families of children with cancer linked to a foundation in Cundinamarca (Colombia); this institution has a social responsibility program in which it offers comprehensive companionship to children from vulnerable population who are stricken with lupus or cancer during hospitalization or remission, so they can satisfactorily complete their health treatments in Bogotá. The foundation offers aid in the modalities of regular child and floating child; the first is the child who attends the institution regularly and receives weekly groceries and when in treatment receive a monthly hospitalization kit; the floater is the child forwarded from their city of origin for treatment in Bogotá, during that period the foundation offers them the same support offered to a regular child and, additionally, the floater children participate in the foundation's ludic, recreational, and spiritual events.

The study informant was the principal family caregiver of the child with confirmed diagnosis of childhood cancer and who was in the phase of treatment consolidation or maintenance. Inclusion criteria included being over 18 years of age and caring for the child for at least two months; the latter for the purpose of quantifying consumption before and after the cancer diagnosis.

To gather data, a questionnaire was used containing sociodemographic information of the child and the caregiver. To measure the additional family financial effort associated to caring for a child with cancer the study used the family survey "Financial cost of caring for chronic illness" by Montoya *et al.*,(11) which inquires on the actual effective consumption attributable to caring for individuals with chronic illness, the perception of burden associated to the financial cost, and – lastly – the observations related to the cost of caring. This survey has adequate facial and content validity criteria under criteria of clarity, sufficiency, coherence, and relevance. The survey quantifies family financial expenditure in Colombian pesos (COP) and has open response spaces that permit expanding on the causes of the increased expense.(11)

Understanding as economic burden the additional financial effort the family of a child with cancer must assume to meet the care needs,(9) and the level of burden as the relative weight of the financial cost in each of the items of the actual effective consumption attributable to caring for the child with cancer, which was obtained by calculating a quotient based on the amount of money that the family consumes in caring for the patient and the amount of money the family consumed before the illness, resulting in an independent proportion of the monetary value. The resulting quotient is converted into degrees of an angle through the tangent arc function, with higher number of degrees meaning a higher level of burden.(13)

The analysis of the economic burden was conducted through the methodology known as CARACOL (Economic burden attributable to caring for a person with chronic illness in Colombia), which has two facets: quantification of the level of burden and financial cost of the burden.(10) The first seeks to identify the level of the impact or relative weight of the financial cost in each of the items or grouping of these and the second is aimed at describing the peculiar attributes of consumption of the family group associated to caring for the patient with chronic illness. To specify the relative weight of the burden, the study determined the amount of money the family invested in caring for the child with cancer and this was contrasted with the amount of money the family spent prior to the onset of the illness in a given item of the household economy. The quotient of both amounts expressed the proportion of the consumption attributable to the illness with respect to the prior family consumption in the specific item, independent of the monetary value, which is represented in a snail emulous formed from the conversion of the quotient into sexagesimal angles that permit the representation of level of burden. To describe the peculiar attributes of consumption by the family group, the nominal and ordinal variables were analyzed through descriptive statistics determining the frequency and percentage. To analyze interval variables, descriptive statistics were used by means of distribution measures and central tendency. The study was carried out based on the ethical guidelines for research with humans, considering that its risk was minimum. Caregivers provided informed consent and the Ethics Committee from the Faculty of Nursing at Universidad Nacional de Colombia endorsed the study with authorization from the Foundation's directors.

Results

General characteristics of children with cancer and of their caregivers

Seventy percent of the children suffer from leukemia, with no gender tendency given that 50% were girls and 50% were boys of which 54% were out of school. It is relevant to note that in relation to the department from which the families of children with cancer came from 38% were from Bogotá, followed by 20% from Cundinamarca, but 56% lived in Bogotá and 26% in Cundinamarca, evidencing that some families have moved from their department of origin toward the capital or to more nearby places (Table 1).

Eighty-six percent of the family caregivers are women and 14% men, whose age range prevails between 31 and 45 years, 46% live in common-law union, and 82% are sole caregivers; with respect to the number of hours they dedicate daily to caring for the child with cancer, it is highlighted that 78% dedicate from 21 to 24 hours and only 6% less than 12 hours (Table 2).

With respect to food costs, an expense is evidenced associated to caring for the child with cancer by 32.4% due to the nutritional changes that must be accepted. In relation to the expense in rent, 74% spend a monthly average of $303,500 COP; from this expenditure, 30% corresponds to expenses associated to caring for the child due to having to move to another region and in other cases to the change of housing because of infrastructure. Public utilities, like electricity, gas, and water also show increased expenditure associated to care, which is at 38.5%, 37.4%, and 34%, respectively, this is due to the frequent preparation of foods and increased measures of personal and household hygiene.

In terms of health costs, 90% of the family caregivers do not assume said costs due to the child's illness, given that they are affiliated to a contributive or subsidized healthcare provider institution. None of the caregivers complements this service with pre-paid medicine. Family caregivers face increased expenses in elements for personal and household hygiene; on average, the monthly general expense is $152 120 COP of which an average of $60 100 COP is for caring for the child. This expense is increased by the consumption of special elements, like masks, soaps, frequent use of disinfectants and home cleaning elements.

With respect to the transportation expenses, monthly, the expense associated to care is 62.9%; the cause for this consumption is that the families see the need to travel by taxi, and others must do so on inter-municipal vehicles because they live in remote regions. Regarding communications, the families have an increase because the child is forced to miss school during treatments, with internet and television becoming sources of recreation and education for the children. The families have an average general monthly expense of $96 163 COP of which 50.9% is attributed to caring for the child, as illustrated in Table 3.

Degree of family economic burden associated with caring for the child with cancer

The children's families saw an increase in the actual effective consumption in each of the items, which is associated to the illness. The biggest burden is in transportation with an angle of 28.5°, explained because one in four families uses taxis as means of transportation and those living in remote regions seek inter-municipal vehicles for transportation. The second place is in the expense for communication with an angle of 26.3°, this consumption increased in the families because most of them acquired mobile telephones, internet, and cable television as means of recreation and education for the children when they could not go to school or to public settings due to the illness.

Table 1. General characteristics of the 50 children with cancer and sociodemographic characteristics of the family

Characteristic	*n*	%
Age in years		
1-5	15	30
6-10	16	32
11-14	19	38
Gender		
Female	25	50
Male	25	50
Studies		
Yes	18	36
No	27	54
N/A	5	10
Type of cancer		
Leukemia	35	70
Carcinoma	9	18
Sarcoma	6	12
Department of origin		
Bogotá	19	38
Cundinamarca	10	20
Remainder	21	42
Department of residence		
Bogotá	28	56
Cundinamarca	13	26
Remainder	9	18
Zone		
Urban	42	84
Rural	8	16
Socioeconomic level		
1	24	48
2	20	40
3	6	12
Typology of the child's family		
Single parent	4	8
Nuclear	21	42
Extended	25	50

The health item reported an angle of burden of 20.8°; this burden is mainly attributed to the expense in elements for personal and household hygiene, as well as to the expense in medications included in the Obligatory Health Plan and to additional costs not contemplated in said plan. In housing, the burden is of 19.7°, given that some families changed housing due to problems with the infrastructure and others moved from their department of origin to gain better access

Table 2. General characteristics of the 50 family caregivers of children with cancer

Characteristic	*n*	%
Gender		
Female	43	86
Male	7	14
Age in years		
18 - 30	12	24
31 - 45	24	48
46 - 60	12	24
61 and over	2	4
Marital status		
Separated	5	10
Single	9	18
Common-law	23	46
Widowed	1	2
Schooling		
Incomplete primary	13	26
Complete primary	7	14
Incomplete high school	7	14
Complete high school	18	36
Technical	3	6
Professional	2	4
Occupation		
Employee	5	10
Home	41	82
Independent worker	2	4
Other	2	4
Sole caregiver		
Yes	41	82
No	9	18
Time spent as caregiver		
3 to 11 months	11	22
1 - 5 years	36	72
6 years or more	3	6
Hours dedicated to caring for the child		
Less than 12	3	6
13 – 20	8	16
21 – 24	39	78

General expense and associated to caring for the child with cancer

to hospital centers. With respect to the actual effective food consumption, the angle of burden is 17.4°; families expressed that this increase is due to the child's change in diet (Figure 1).

Table 3. General monthly family expense per item and associated to caring for the child with cancer in Colombian pesos (COP)*

Area	General expense				Associated Expense				% del general expense in cuidado
	Median	Standard Deviation	Minimum	Maximum	Median	Standard Deviation	Minimum	Maximum	
Food	571 480	211 820	300 000	1 200 000	185 500	104 521	50 000	600 000	32.4
Rent	303 500	214 052	0	700 000	93 020	141 307	0	520 000	30
Electric	49 180	41 220	0	250 000	18 980	31 196	0	180 000	38.5
Gas	29 992	17 215	0	75 000	11 240	7 590	0	35 000	37.4
Water	68 926	50 516	0	250 000	23 440	29 162	0	150 000	34
Maid service	62 800	142 600	0	600 000	47 200	118 649	0	600 000	75
Attention to visits	16 760	27 104	0	120 000	13 940	22 210	0	90 000	83
Transportation	687 600	444 870	128 571	2 211 428	432 900	406 770	0	1 714 285	62.9
Landline	13 140	20 108	0	100 000	2 160	5 441	0	25 000	16
Mobile phone	46 500	32 567	0	150 000	29 260	25 806	0	100 000	62.9
Internet	17 673	26 938	0	125 000	10 220	18 494	0	60 000	57.8
Cable TV	18 850	13 392	0	50 000	7 340	12 650	0	40 000	38.9

*In 2016 one US Dollar = $2 880 COP

Consequences of the family economic burden associated with caring for the child with cancer

The financial wear associated to caring for the child with cancer has been cause for concern for all the caregivers (high 58%, medium 38%, and low 4%), creating conflicts in 92% of the families. The costs of caring for the child who is ill are assumed by various family members (36%); frequently, the incomes are not sufficient and families are obligated to go into debt or sell their goods.

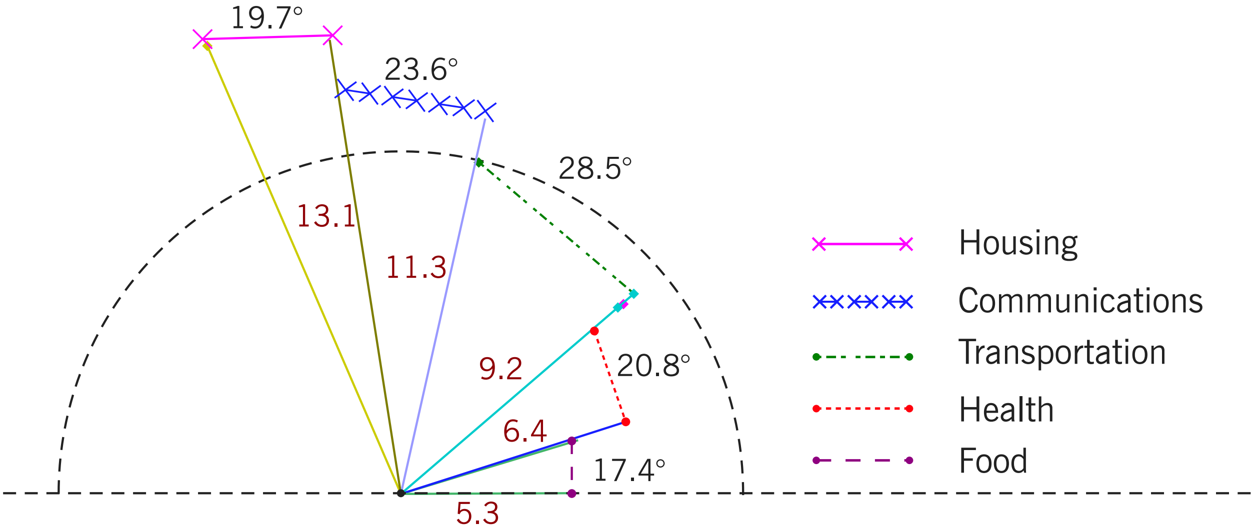

Figure 1. Family economic burden associated with caring for the child with cancer

Discussion

This study evidenced that families had to move from their place of residence to Bogotá to have access to the child's treatment. This finding is congruent with that reported in the literature, given that most pediatric cancer centers are in the principal cities, obligating a significant number of patients to travel long distances for the cancer treatment.(14) At the same time, this expense is one of the causes for abandoning treatments, given that accessibility to health services is hindered and some families decide to end this struggle prior to culminating the treatments,(2,8) which results in social financial difficulties.(14) Frequently, caregivers abandon their occupations to dedicate themselves to caring for the child. This possibly worsens the families' financial situation, inasmuch as it is clear that the success of the medical care of children with special needs not only depends on the professional services, but also on the time invested by the family, which affects their work status.(15) The aforementioned demonstrates that caring for the patient is a task of almost exclusive dedication by the caregiver,(16) especially by women, given that the study found that 86% of the caregivers are females, a situation evidencing the woman's role in providing care, in particular in situations of chronicity.(17)

With respect to the number of hours per day dedicated to caring, 78% of the family caregivers dedicate between 21 and 24 hours, which agrees with studies that justify this high dedication in multiple tasks performed by the caregivers, among which there are feeding, accompanying, bathing, dressing, carrying, transporting, administering medications, taking to the doctor, acquiring medicine, and scheduling medical appointments for the chronic patient.(7) Said dedication increases in children with cancer, who due to their condition and age must always be accompanied, needing a family caregiver continuously; more so during moments of hospitalization, which can last for days, weeks, and even months. This is when family caregivers are obligated to change their family and social routines to accept this new role.(18,19)

Families of children with cancer see increases in the different items of the family budget, consequential of the diverse experiences they endure. One of these is that the children are forced to miss school, which leads to the need to improve information technologies to provide the child some distraction while in the hospital and at home. Sánchez- Herrera et al. (10) indicate that families of chronic patients have seen increased payments in mobile phone services, internet, and television to meet the patient's needs for recreation and communication.

With respect to the sources of income, our study showed that families receive help from their relatives and from the Foundation, but – in spite this – they consider that expenses are higher. Added to this is the fact that many family caregivers have to leave their jobs; consequently, diminishing their income and obligating them in some cases to request loans, which agrees with that reported in the Colombian Andean region, where the families assumed debts to provide for the needs of those with chronic illness.(10)

Among the sources of support, the families share expenses with close relatives, which is beneficial because the parents are the principal source of caring. It is necessary for them to have a broad social network that provides them help to confront the shock of the diagnosis, the subsequent treatment, and its results.(20) In general, for families of children with cancer, economic and physical support from other relatives is very important, given that this facilitates complying with medical and chemotherapy appointments; this support usually comes from the solidarity of extended families. In addition, part of the financial wear due to caring for the child generates a high level of concern, given that conflicts arise within the family group related to how finances are managed, with the lack of sufficient money being one of the principal causes. In these cases, social life, recreation, and food habits are modified by the treatment for the child with cancer.(21)

Additionally, economic burden was noted related to food, where the families are not concerned with satisfying the food needs of all its members, given that their priority is the care process and caring for the child with cancer, leading to decisions, like providing the best food to the child. This agrees with the literature where it was found that the child's dependency on the family hinders the caregivers' feeding or, rather, it takes place under inappropriate conditions, whether in the hospital or the street, which could impact upon their health status.(22)

It was evident that the biggest burden for the families was transportation, with a weekly average of $160 440 COP of which 62.9% of the total expense is associated to care. Children with cancer could not be exposed to environments that caused them major discomfort, which is why their families had to change their usual means of mass transport for one that represented less risk to the children. Some families lived in rural zones and traveling to the hospital centers demanded an additional expense. Fluchel et al.,(14) found that the majority of pediatric cancer centers are in the principal cities and a significant number of patients travel long distances for cancer treatment. This expense forces many to abandon treatment; the long distances make it difficult to gain access to the health services and some families decide to end this struggle before culminating the treatments. Housing expenses were significant; some families moved from their place of residence to improve accessibility to health services; these findings are similar to those reported in the literature, which has found a surprisingly high percentage of families had moved from their homes due to their child's cancer. Given their considerable efforts, financial costs associated to the transfers and the fact that their children's lives are at risk because they live so far away, the families decide to move from their city of origin. Colombia's legislation 1388 of 2010 "for the right to life of children with cancer in Colombia", seeks to guarantee access to early diagnosis, treatment, follow up, and support, including financial; but in spite of this, for many families enduring the experience of childhood cancer continues being a struggle lacking sufficient financial support, which implies the prevalence of negative impacts on not adhering to treatments and the survival of children with cancer.

The conclusion in this study is that families of children with cancer bear a high economic burden, stated in order of importance with expenses in transportation, communications, health, housing, and food. This economic burden can interfere with adherence to treatment and, hence, with the child's survival. This research shows the need for the health staff to better understand the experiences of families of children with cancer in relation to the economic burden they must endure and recognize the families as principal caregivers who require support and more so during moments of hospitalization, to develop strategies that integrate care actions with actions at home to minimize readmissions of the children and improve the quality of life of the children and their families. The study also reveals the need to include in public health policies support for the families of children with cancer to avoid impoverishment, improve the quality of life of the families and the children, and avoid – in the long term – illnesses of family caregivers and family members related to the burden of care.

References

1. International Agency for Research on Cancer [Internet]. Latest data show a global increase of 13% in childhood cancer incidence over two decades. –Press release N° 251. Lyon, France: IARC; 2017 [cited 15 Apr 2017]. Available from: http://www.iarc.fr/en/media-centre/pr/2017/pdfs/pr251_E.pdf
2. American Cancer Society. Datos y estadísticas sobre el cáncer entre los hispanos/latinos 2012-2014 [Internet]. Atlanta: American Cancer Society; 2017 [cited 15 Nov 2017]. Available from: https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-facts-and-figures-for-hispanics-and-latinos/datos-y-estad%C3%ADsticas-sobre-el-c%C3%A1ncer-entre-los-hispanos-latinos-2012-2014.pdf
3. Pardo R, Cendales D. Incidencia, mortalidad y prevalencia de cáncer en Colombia 2007-2011 [Internet]. Bogotá: Instituto Nacional de Cancerología. Available from: http://www.cancer.gov.co/files/libros/archivos/incidencia1.pdf
4. Ireys HT, Chernoff R, De vet KA. Maternal Outcomes of a Randomized Controlled trial of a Community-Based Support Program for Families of Children with Chronic Illnesses. Arch. Pediatr. Adolesc. Med. 2001; 155(7):771-7.
5. Grau C. Impacto psicosocial del cáncer infantil en la familia. Educ. Desarr. Diversidad. 2002; 5(2):87-106.
6. Leal J, Luengo R, Sullivan R, Witjes J. Economic burden of cancer across the European Union: a population-based cost analysis. Eau.2013; 69:438-47.
7. Organización Panamericana de la Salud. Diagnóstico temprano de cáncer en la niñez [Internet]. Washington, D.C: OPS; 2015 [cited 15 Jan 2016]. Available from: http://www.paho.org/hq/index.php?option=com_content&view=article&id=10277%3A2014-publication-early-diagnosis-of-childhood-cancer&catid=5041%3Acancer-media-center&Itemid=42042&lang=es
8. Flury M, Caflish T, Ullmann-Bremi A, Spichiger E . Experiences of Parents with Caring for Their Child after a Cancer Diagnosis. J. Pediatr. Oncol. Nurs. 2011; 28(3):143-53.
9. Barrera L, Carrillo GM, Chaparro L, Sánchez B. Modelo para abordar la carga del cuidado de la enfermedad crónica en Colombia. Orinoquia. 2015; 19 (1): 89-99.
10. Sánchez-Herrera B, Gallardo-Solarte K, Montoya-Restrepo LA, Rojas-Martínez MV, Solano-Aguilar S, Vargas LD. Carga financiera del cuidado familiar del enfermo crónico en la Región Andina de Colombia. Rev. Cienc. Salud. 2016; 14(3): 341-52.
11. Montoya A, Montoya I, Ocampo JZ, Chaparro L, Sánchez B. Diseño y validación de la encuesta costo financiero del cuidado de la enfermedad crónica. Salud Uninorte; 2017 [cited 17 Nov 2017]: 33(3). Available from: http://rcientificas.uninorte.edu.co/index.php/salud/article/viewArticle/6561

12. Morales ON, Pinitu GA, Escobar CA. Carga financiera del cuidado del enfermo crónico en un grupo de familias en Guatemala. Rev. Duazary. 2016; 14(1): 45-53.
13. Mayorga JH, Montoya LA, Montoya I, Sánchez B, Sandoval N. Metodología para analizar la carga financiera del cuidado familiar de una persona con enfermedad crónica. Rev. Cienc. Biomed. 2015; 6(1):96–106.
14. Fluchel M, Kirchhoff A, Bodson J, Sweeney C, Edward S, Ding Q, et al., Geography and burden of care in pediatric cancers. Pediatr. Blood Cancer. 2014; 61(11):1918–924.
15. Miller JE, Nugent CN, Russell LB. Risk factors for family time burdens providing and arranging health care for children with special health care needs: Lessons from non-proportional odds models. Soc. Sci. Res. 2015; 52:602–14.
16. Castillo E, Chesla CA, Echeverry G, Tascón EC, Charry M, Chicangana JA, Pomar DM. Satisfacción de los familiares cuidadores con la atención en salud dada a adultos y niños con cáncer. Colombia Med (Cali).2007; 25(1):19–32.
17. Giraldo CI, Franco GM. Calidad de vida entre los cuidadores familiares. Aquichán. 2006; 6(1):38-53.
18. Bona K, Dussel V, Orellana L, Kang T, Geyer R, Feudtner C, et al., Economic Impact of Advanced Pediatric Cancer on Families. J. Pain Symptom Manag.2014; 47(3):594–603.
19. Rubira E, Munhoz M, Martinez M, Barbosa D, Silva A. Taking care of children with cancer: evaluation of the caregivers' burden and quality of life Cuidando del niño con cáncer: evaluación de la sobrecarga y calidad de vida de los cuidadores. Rev. Latino-Am. Enfermagem.2011; 19(3): 515-22.
20. Pozo C, Bretones A, Martos MJ, Morillejo E, Cid N, Pozo C, et al., Repercusiones psicosociales del cáncer infantil: apoyo social y salud en familias afectadas. Rev. Latinoam. Psicol. 2015; 47(2):93-101.
21. Zúñiga-serratos C, Loredo-Abdalá A, Trejo-Hernández J. Maltrato infantil: indicadores clínicos y sociales de maltrato físico en niños con cáncer. Acta Pediatr. Mex. 2007; 28(1): 15-20.
22. Ávila-Montiel D, Ortega-Martin V, Ruiz-Cano, Dorantes-Acosta E. Análisis de la alimentación de los cuidadores de pacientes pediátricos con cáncer en el Hospital Infantil de México Federico Gómez. Bol. Med. Hosp. Infant. Mex. 2013; 70(2): 159-65.

Quality of Nursing Care: Perception of Parents of Newborns Hospitalized in Neonatal Units

Lina Ximena Jaramillo Santiago[1]
Sandra Patricia Osorio Galeano[2]
Diego Alejandro Salazar Blandón[3]

Original article

UNIVERSIDAD
DE ANTIOQUIA
1803

Quality of Nursing Care: Perception of Parents of Newborns Hospitalized in Neonatal Units

Objective. This work sought to describe the quality of nursing care from the perceptions of parents of children hospitalized in a neonatal unit. **Methods.** Descriptive cross-sectional study conducted in an institution with tier III level of care in the city of Medellín (Colombia). Information was gathered by using the CARE-Q instrument, which was answered by the parents of newborns hospitalized in neonatal unit. The sampling was intentional. **Results.** The study had the participation of 121 individuals; 67.8% were women; mean age was 28 years and almost one in every two had secondary education or higher. Among the neonates, 66.9% were premature and 33.1% were to term, average weight was 2015 g (minimum 620 and maximum 4420). The general assessment of the parents on the quality of nursing care their children received in the neonatal unit, was on average 88 of 100 possible points. The scores obtained in the dimensions from highest to

1 Nurse, Masters. Professor, Universidad Pontificia Bolivariana, sede Medellín, Colombia.
email: ximena.jaramillo@upb.edu.co

2 Nurse, Masters. Professor, Universidad de Antioquia. Medellín, Colombia.
email: sandra.osorio@udea.edu.co

3 Mathematician, Masters. Professor, Universidad de Antioquia. Medellín, Colombia.
email: alejandro.salazar@udea.edu.co

Article linked to the research: Calidad del cuidado de enfermería: percepción de padres de recién nacidos hospitalizados en unidad neonatal, Medellín 2015.

Conflicts of Interest: None.

Received: April 19th, 2017.

Accepted: February 9th, 2018.

How to cite this article: Jaramillo LX, Osorio SP, Salazar DA. Quality of Nursing Care: Perception of Parents of Newborns Hospitalized in Neonatal Units. Invest. Educ. Enferm. 2018; 36(1):e08.

DOI: 10.17533/udea.iee.v36n1e08

lowest were: *Monitors and follows through* (95.2), *Accessibility* (90.8), *Maintains a relationship of trust* (88.6), *Comforts* (87.2), *Explains and facilitates* (86.3), *and Anticipates* (86.0). **Conclusion.** Parents perceive as positive the nursing care their children receive in the neonatal unit. However, in the analysis by dimensions, it is possible to establish the need to strengthen aspects, like interpersonal relations and communication processes, which are part of the dimensions: Explains and facilitates and Anticipates. The findings permit guiding specific actions to improve quality in neonatal care.

Descriptors: intensive care units; nursing care; perception; quality of health care; infant, newborn.

Calidad del cuidado de enfermería: percepción de padres de recién nacidos hospitalizados en unidad neonatal

Objetivo. Describir la calidad del cuidado de enfermería a partir de la percepción de los padres de niños hospitalizados en una unidad neonatal. **Métodos.** Estudio descriptivo de corte transversal realizado en una institución de tercer nivel de atención de la ciudad de Medellín (Colombia). Para la recolección de la información se utilizó el CARE-Q el cual contestaron los padres de los recién nacidos hospitalizados en unidad neonatal. El muestreo fue intencional. **Resultados.** Participaron 121 personas, de las cuales el 67.8% eran mujeres. La edad promedio fue 28 años y casi uno de cada dos tenían estudios secundarios o mayores. Entre los neonatos, 66.9% fueron prematuros y 33.1% a término. El peso promedio fue de 2 015 gramos (mínimo 620 y máximo de 4 420). La valoración general de los padres sobre la calidad del cuidado de enfermería que sus hijos recibieron en la unidad neonatal fue en promedio de 88 de 100 posibles. Los puntajes obtenidos en las dimensiones de mayor a menor fueron: *Monitorea y hace seguimiento* (95.2), *Accesibilidad* (90.8), *Mantiene relación de confianza* (88.6), *Conforta* (87.2), *Explica y facilita* (86.3), y *Se anticipa* (86.0). **Conclusión.** Los padres perciben de manera positiva el cuidado de enfermería que sus hijos reciben en la unidad neonatal. Sin embargo, en el análisis por dimensiones es posible establecer la necesidad de fortalecer aspectos como las relaciones interpersonales y los procesos de comunicación, que hacen parte de las dimensiones: Explica y facilita y Se anticipa. Los hallazgos permiten orientar acciones concretas de mejoramiento de la calidad en el cuidado neonatal.

Descriptores: unidades de cuidados intensivos; cuidado de enfermería; percepción; calidad de la atención de salud; recién nacido.

Qualidade do cuidado de enfermagem: percepção de pais de recém-nascidos hospitalizados na unidade neonatal

Objetivo. Descrever a qualidade do cuidado de enfermagem a partir da percepção dos pais de crianças hospitalizadas numa unidade neonatal. **Métodos.** Estudo descritivo de corte transversal realizado numa instituição de terceiro nível de atenção da cidade de Medellín (Colômbia). Para a recolhimento da informação se utilizou o CARE-Q que foi contestado pelos pais dos recém-nascidos hospitalizados na unidade neonatal. A amostragem foi intencional. **Resultados.** Participaram 121 pessoas, 67.8% foram mulheres, a idade média foi de 28 anos e quase um de cada dois tinham estudos secundários ou maiores. Entre os neonatos, 66.9% foram prematuros e 33.1% a término, o peso médio foi de 2.015 gramas (mínimo 620 e máximo de 4.420). A valorização geral dos pais sobre da qualidade do cuidado de enfermagem que seus filhos receberam na unidade neonatal, foi na média de 88 de 100 possíveis. As pontuações obtidas nas dimensões de maior a menor foram: *Monitoração e fazer seguimento* (95.2), *Acessibilidade* (90.8), *Mantém relação de confiança* (88.6), *Conforta* (87.2), *Explica e facilita* (86.3), e *Se antecipa* (86.0). **Conclusão.** Os padres percebem de maneira positiva o cuidado de enfermagem que seus filhos recebem na unidade neonatal. Porém, na análise por dimensões, é possível estabelecer a necessidade de fortalecer aspectos como as relações interpessoais e os processos de comunicação, que fazem parte das dimensões: Explica e facilita e Se antecipa. As descobertas permitem orientar ações concretas de melhoramento da qualidade no cuidado neonatal

Descritores: unidades de terapia intensiva; cuidados de enfermagem; qualidade da assistência à saúde; percepção; recém-nascido.

Introduction

Quality of care is a theme of great interest and relevance for the nursing discipline. It is, in turn, a broad concept that involves elements related with infrastructure, process, and results of care.(1) Improving the quality of nursing care is a constant goal for the discipline and the first challenge to achieve it is to develop skills to evaluate and analyze the quality of care offered. In recent years, new elements have been included within the framework analyzing the quality of health care, guiding it toward the need to involve in this process the staff, providers, patients, and families.(2) Precisely, the voices of users, their expectations and needs, have been gaining strength as a guiding element of processes to improve the quality of health care.(3) In fact, the perception of patients and their families on the quality of nursing care has been explored in diverse studies, countries and contexts, manifesting that the quality of care is largely conditioned by the communication and interpersonal skills of the professionals.(4,5)

Said skills have a disciplinary support in Jean Watson's theory of human caring, which highlights the importance of interpersonal and transpersonal attributes of coherence, empathy, and warmth in caring, which supports the need to approach the human component of care quality, from the patients' perceptions.(6) With neonates, the parents account for the quality of care their children receive in the neonatal units and – in this sense – it is important to recognize that they face a complex emotional moment in which their expectations regarding care, as well as their perception of said care, can be conditioned by their child's health status and by their own needs.(7) Hence, it is necessary to know the parents' perceptions on the nursing care offered to their children to implement improvement processes and/or validate the nursing practice in caring for neonates, a task in which it is useful to apply instruments that permit approaching objectively the needs of the parents and neonates.

The design and validation of instruments to measure the perception of the quality of care is a strategy that has permitted identifying voids in care and improving care processes; however, said instruments have been scarcely applied within the context of neonatal care and although some instruments have been used in the area,(8,9) it is still necessary to broaden the analysis framework from the constructs and dimensions proposed by the different measurement scales available in nursing. The Caring Assessment Instrument (CARE-Q) was created by Larson in 1984 to determine the aspects patients consider relevant in their interaction with the nursing actions that are important for them.(10) This instrument has been used in diverse care contexts nationally and internationally,(11-14) being – according to the findings – a reliable instrument to know of the quality of nursing care. In Colombia, said instrument was validated in 2008,(11) where it obtained a Cronbach's alpha of 0.88, after extracting four items from initial 50 in the original scale. Since then, this scale has been used in diverse hospital settings with adult patients;(13-16) however, no results were found to account for the application of the CARE-Q instrument in el context of neonatal care. This study sought to identify the perceptions of parents of neonates hospitalized regarding the quality of nursing care through the CARE-Q instrument.

Methods

This was a descriptive cross-sectional study, conducted in a neonatal unit of a private tier III health care institution in the city of Medellín (Colombia), serving as maternal and child care reference institution. The information was gathered from January to March 2015. The study included the parents of all the newborns admitted to the neonatal intensive care unit (NICU) and intermediate neonatal care unit (INCU), hoping that with a cross-sectional measurement during the fourth part of the year this would yield an adequate representation of what occurs with the study variables. During the three months 137 neonates were admitted and for a total participation of 121 parents. Sixteen parents, who fulfilled the inclusion criteria, did not participate in the study due to reasons, like death of the neonate, quick referral, among others.

The study included both parents of the newborns, who had accompanied their child for at least 12 h within the neonatal intensive care or intermediate care settings, whether continuous or not. Given that these are open-door units, the parents can enter during the schedule they wish during the 24 hours and the periods of accompaniment tend to be alternated with rest periods in their homes. El minimum time of hospitalization was confirmed with the date of admission, information from the staff, and information from the parents. No maximum hospital stay was established. The exclusion criterion considered parents with cognitive deficit. The parents were contacted in the unit by the principal investigator. With prior information of the study objectives and after signing the informed consent, the participants answered the instrument's questions by their filling out the questionnaire; only in the case of illiteracy by the parent were the questions read. In all cases, the parents filled out the instrument in the neonatal unit, during a moment that did not interfere with care moments and while their child was asleep and tranquil. The questionnaire filled out was composed of three parts: i) sociodemographic aspects, ii) clinical information of the neonate (gestational age, weight, and days of hospital stay in NICU or INCU) and admission diagnosis), and iii) the CARE-Q instrument.

This instrument, validated for Colombia, is integrated by 46 items divided into six dimensions:(11) *accessible* (5 items) refers to behaviors of caring that are essential in the support relationship and help administered in timely manner, like "approaching the patient by dedicating time"; *explains and facilitates* (5 items) are the behaviors related with caring to explain aspects that are unknown or difficult to understand, in this case for the parents, related with the disease, treatment, or recovery of their children; *comforts* (9 items) has to do with the care offered for the patient and parents to feel comfortable, infusing encouragement and vigor; *anticipates* (10 items) evaluates care planned beforehand, bearing in mind the needs of the user to prevent complications; *maintains a relationship of trust* (9 items) involves care that generates empathy, including closeness and physical presence; and, lastly, *monitors and follows through* (8 items) refers to care that implies knowledge of each patient and domain of the technical scientific and procedural. To apply the scale, in all cases, the original question was made aimed at the parents' perception of the care their children were receiving.

The statistical analysis was conducted with the SPSS software v. 23; absolute and relative frequencies were calculated for each of the items of the scale and central tendency and dispersion measurements were made for the total and the dimensions. To calculate the total scale score, the scores of the items were added and this was divided by the sum of the maximum score, this result was multiplied by 100. The same procedure was conducted for each dimension. For the total score and by dimensions, of the lost data were replaced by the average evaluation of the items that make up the dimension. It was considered that a higher score indicates better perception of the quality of nursing care provided. Additionally, Cronbach's alpha of 0.96 for the scale total was calculated as internal consistency indicator, and per dimensions the scores were: *accessible* $\alpha = 0.72$, *explains and facilitates* $\alpha = 0.69$, *comforts* $\alpha = 0.81$, *anticipates* $\alpha = 0.86$, *maintains a relationship of trust* $\alpha = 0.82$, *monitors and follows through* $\alpha = 0.79$.

The following ethical aspects were considered: i) authorization was obtained from the instrument's author and from the researcher who validated said instrument in Colombia. Likewise, they were consulted on the pertinence of its use in the population of interest in the present study; ii) approval was obtained from the Bioethics Committees from the University institution and from the health care institution; iii) participation in the study was voluntary and each participant signed the informed consent; and, iv) the ethical principles were protected and respected in keeping with Resolution 008430 of October 1993 by the Colombian Ministry of Health, according to which this research was classified as minimum risk.

Results

The study secured the participation of 121 parents of 97 neonates hospitalized in neonatal intensive and intermediate care. Prevailing sociodemographic characteristics: 67.8% were female, the mean age of the men was 28±6.9 years (minimum of 15 and maximum of 53) and the women were 26±6.2 years (minimum of 15 years and maximum of 43). Regarding the educational level, 47.9% of the participants had secondary studies, 28.1% university, and only 0.8% were illiterate. In terms of occupation, 37 mothers (30.6%) were housewives, 5 (4.1%) were students, and the rest (65.3%) held different jobs and were on maternity leave. In terms of the hours spent by the parents within the unit when filling out the instrument, it was found that 43% of the parents had spent over 48 h and the 57% remaining between 12 and 48 h.

As per the characteristics of the neonates, 52.9% were in NICU and 47.1% in INCU. Gestational age upon admission indicated that 66.9% were premature and 33.1% to term. In terms of weight, 56.2% weighed less than 2500 g, with an average weight of 2162±848 g (minimum 620 and maximum 4420). Prematurity was the principal admission diagnosis (50.4%), followed by perinatal asphyxia (8.3%) and respiratory distress syndrome (7.4%).

According to the data obtained by applying the CARE-Q instrument (Table 1), the parents perceived as positive the quality of nursing care in the neonatal unit with a global evaluation of 88.9 over 100 possible points, observing that the highest score averages were in the dimensions *Monitors and follows through* (95.2), *Accessibility* (90.8), and *Maintains a relationship of trust* (88.6), with the three other dimensions scoring above 85.

Table 2 shows the frequency of the nurse's care actions, contemplated in the CARE-Q, according to the dimensions and responses of the parents

Table 1. Descriptive statistics of the scores per dimension and total of the CARE-Q instrument

Dimension	Mean	Typical deviation	Minimum	Maximum
Accessibility	90.8	11.4	40.0	100
Explains and facilitates	86.3	13.8	45.0	100
Comforts	87.2	11.3	38.9	100
Anticipates	86.0	13.8	37.5	100
Maintains a relationship of trust	88.6	11.8	38.9	100
Monitors and follows through	95.2	7.5	62.5	100
Total	88.9	10.1	47.3	100

who participated in the study. In the *Accessibility* dimension, the responses were predominantly in the categories always and almost always. The item best evaluated by the parents was *if the nurse approaches your child to offer measures to relieve pain or to perform procedures* (always = 81%). In the *Explains and facilitates* dimension, the item *The nurse is honest with you regarding your child's medical condition* obtained the best evaluation (always = 98.3%), while the lowest items were *the nurse suggests questions you could ask the doctor* when needed (always = 40.5%) followed by *the nurse teaches you how to care for your child* (always = 66.1%) *and told you about support groups available in the health care institution to learn how to care for your child* (always = 66.1%).

In the *Comforts* dimension, 88.4% states that *the nurse is always kind with their child in spite of having difficult situations.* It is striking that only 22.3% of the parents expressed that the staff always *sits with them to start a conversation.* In the *Anticipates* dimension, the lowest percentages in the always item, were for the item *when you feel overwhelmed by your child's illness, the nurse agrees with you on a new intervention plan* (42.1%) and *the nurse helps you to establish reasonable goals* (47.1%). In the *Maintains a relationship of trust dimension*, the items with the highest scores were: *the nurse maintain respectful contact with your child* (always = 91.7%) and *the nurse identifies and introduces him/herself to you* (always = 81.6%). The lowest evaluation was given to the item *the nurse encourages you to ask the doctor questions related with your child's health situation* (always = 38.8%). Lastly, the *Monitors and follows through* dimension highlights that 90.1% of the parents indicated always in the item *the nurse is organized in doing his/her work*, while only 67.8% indicate that the nurse makes sure you know how to care for your child.

Table 2. Perceptions of parents of children hospitalized in a neonatal unit of the frequency of the nurse's care actions according to item

Domain / question	Never		Sometimes		Almost always		Always	
	n	%	*n*	%	*n*	%	*n*	%
Accessibility								
The nurse approaches your child to offer measures that relive pain or to perform procedures	0	0.0	3	2.5	20	16.5	98	81.0
The nurse administers medications and performs procedures on time for your child	0	0.0	3	2.5	21	17.4	97	80.2
The nurse visits your child at the bedside frequently to watch over his/her health status	0	0.0	6	5.0	39	32.2	76	62.8
The nurse responds quickly to your child's cries or to your calling as parent	1	0.8	6	5.0	31	25.6	83	68.6
The nurse asks you to call her if you feel your child is not well	12	9.9	11	9.1	14	11.6	84	69.4
Explains and facilitates								
The nurse tells you about support groups for the control and follow up of your child's care	9	7.4	11	9.1	21	17.4	80	66.1
The nurse provides clear and precise information on the health situation of your child	0	0.0	6	5.0	26	21.5	89	73.6
The nurse teaches you how to care for your child	6	5.0	10	8.3	25	20.7	80	66.1
The nurse suggests questions you can ask the doctor when needed	21	17.4	25	20.7	26	21.5	49	40.5
The nurse is honest with you regarding your child's medical condition	0	0.0	2	1.7	17	14.0	102	84.3

Table 2. Perceptions of parents of children hospitalized in a neonatal unit of the frequency of the nurse's care actions according to item. (Cont.)

Domain / question	Never		Sometimes		Almost always		Always	
	n	%	*n*	%	*n*	%	*n*	%
Comforts								
The nurse makes an effort for your child to rest comfortably	0	0.0	3	2.5	16	13.2	102	84.3
The nurse encourages you to identify the positive elements of your child's treatment	6	5.0	2	1.7	33	27.3	80	66.1
The nurse is kind to your child in spite of having difficult situations	1	0.8	3	2.5	10	8.3	107	88.4
The nurse is joyful	1	0.8	10	8.3	44	36.4	66	54.5
The nurse sits with you to start a conversation	31	25.6	30	24.8	33	27.3	27	22.3
The nurse establishes physical contact with your child when he/she needs consolation	7	5.8	19	15.7	39	32.2	56	46.3
The nurse listens to you with attention	1	0.8	3	2.5	18	14.9	99	81.8
The nurse speaks to you kindly	0	0.0	4	3.3	18	14.9	99	81.8
The nurse involves you in caring for your child	3	2.5	13	10.7	22	18.2	83	68.6
Anticipates								
The nurse pays more attention to your child during the night	1	1.0	7	7.2	28	28.8	61	62.8*
The nurse looks for the most adequate opportunity to talk to you about your child's health situation	3	2.5	13	10.7	33	27.3	72	59.5
When you feel overwhelmed by your child's illness, the nurse agrees with you on a new intervention plan	19	15.7	22	18.2	29	24.0	51	42.1
The nurse is aware of your child's needs to prevent possible alterations in their health status	0	0.0	1	0.8	19	15.7	101	83.5
The nurse understands that this experience is difficult for you and pays special attention to you during this time	5	4.1	17	14.0	27	22.3	72	59.5
When the nurse is performing some procedure on your child, he/she is solely and exclusively concentrated on your child	0	0.0	4	3.3	10	8.3	107	88.4
The nurse continues showing interest for your child although having gone through a crisis or critical phase	1	0.8	7	5.8	25	20.7	88	72.7
The nurse helps you to establish reasonable goals	14	11.6	16	13.2	34	28.1	57	47.1
The nurse looks for the best opportunity to talk to you about changes in your child's health situation	3	2.5	9	7.4	25	20.7	84	69.4
The nurse conciliates with you before starting a procedure or intervention with your child	12	9.9	11	9.1	30	24.8	68	56.2
Maintains a relationship of trust								
The nurse helps you to clear doubts in relation to your child's situation	1	0.8	3	2.5	24	19.8	93	76.9
The nurse accepts that you know your child best and includes you whenever possible in planning and managing his/her care	8	6.6	14	11.6	32	26.4	67	55.4
The nurse encourages you to ask the doctor questions related with your child's health situation	18	14.9	19	15.7	37	30.6	47	38.8
The nurse places your child in first place no matter what else happens	7	5.8	15	12.4	30	24.8	69	57.0
The nurse is friendly and pleasant with you	1	0.8	9	7.4	21	17.4	90	74.4
The nurse lets you fully express your feelings about your child's illness and treatment	3	2.5	6	5.0	30	24.8	82	67.8
The nurse maintains respectful contact with your child	0	0.0	1	0.8	9	7.4	111	91.7
The nurse identifies and treats your child as an individual person	1	0.8	5	4.1	19	15.7	96	79.3
The nurse identifies and introduces him/herself to you	4	3.3	4	3.3	13	10.7	100	82.6

Table 2. Perceptions of parents of children hospitalized in a neonatal unit of the frequency of the nurse's care actions according to item. (Cont.)

Domain / question	Never		Sometimes		Almost always		Always	
	n	%	*n*	%	*n*	%	*n*	%
Monitors and follows through								
The uniform and name tag worn by the nurse identifies him/her as such	0	0.0	0	0.0	10	8.3	111	91.7
The nurse makes sure of the hour established for special procedures and verifies its compliance	1	0.8	2	1.7	24	19.8	94	77.7
The nurse is organized in doing her work	0	0.0	1	0.8	11	9.1	109	90.1
The nurse performs procedures safely	0	0.0	2	1.7	13	10.7	106	87.6
The nurse is calm	0	0.0	1	0.8	14	11.6	106	87.6
The nurse provides good physical care to your child	0	0.0	2	1.7	14	11.6	105	86.8
The nurse makes sure you know how to care for your child	3	2.5	8	6.6	28	23.1	82	67.8
The nurse identifies when it is necessary to call the physician	1	0.8	5	4.1	14	11.6	101	83.5

*In this item, the response total was 97 because 27 parents did not respond, given that they were not present during the night accompanying their children.

Discussion

The CARE-Q instrument in this research obtained a general Cronbach's alpha of 0.955, indicating that its application is highly reliable in the study population.(17) This is an aspect of interest, given that other experiences were not found of the application of this instrument in the context of neonatal care. Studies with other populations in which the same instrument was applied(11-15) obtained Cronbach's alpha >0.7, but are not comparable with that obtained in this study applied to the parents of the neonates and not directly to the patient object of the care.

Regarding the sociodemographic variables, the study population was predominantly young adult parents, with mean age at 26 years and medium educational and socioeconomic levels. These findings, in general, coincide with those found in populations from other studies conducted in Latin America.(18,19) Furthermore, in terms of the variables of the neonate's health status, prematurity was the first cause of admission and weight was <2 500 g, findings coherent with the local, national, and international context, where prematurity and low weight are the first causes of admission to the neonatal unit.(19,20) From a general perspective, the quality of nursing care perceived by the parents of the neonates evaluated with the CARE-Q is high. Studies with other populations conducted with this instrument are coherent from the general perception point of view, given that high evaluations were also found in the care actions during hospitalization.(14-16)

In the analysis by dimensions, *Explains and facilitates* and *anticipates* obtained high scores, but with broad standard deviations, which suggests a low score in some of its items, being an aspect of interest and analysis. As per the dimension *Explains and facilitates*, which refers to the information the nursing staff offers the parents about difficult or unknown aspects,(11) other studies carried out in the country, also obtained high evaluations,(15,16) but in this study, differences exist in the analysis of the items. A particular finding has to do with the items with lower evaluation being related with communication processes with the parents and with the health staff. Communication is, among others, a fundamental element to provide education and teach the parents how to care for their children, with this being a continuous task of the nursing staff in the neonatal units throughout the hospitalization process.(21) In this regard, Swanson's(6) theory defines care as an educational way of relating with a loved one towards whom one feels a commitment and personal responsibility. In this sense, we should consider the importance of strengthening educational processes for the parents as an element of the quality of nursing care for neonates.

In addition, the dimension *Anticipates* was generally well evaluated, a finding contrary to that of another study conducted in the country with the same instrument, where this dimension was perceived with a lower level of quality.(22) *Anticipates* is a dimension that refers to the nursing staff's capacity of preventing complications and preempting the satisfaction of the patient's needs, an aspect Kristen Swanson reaffirms in her theory.(6) When the care subjects are neonates and their families, anticipating is an aspect that gains especial importance, given that the emotional needs of the parents within the neonatal context are common and, in many cases, predictable.(21)

In this dimension, the items having to do with parent participation in establishing reasonable goals and proposals of new care intervention plans obtained low scores. This element proposes the importance of generating actions that favor parent participation to achieve greater empowerment during the care process, (23) which is a very important goal for parents to gain confidence in caring for their children.

The dimension *Monitors and follows through* received the highest evaluation in this study. This finding is interesting because it asks about the domain of the technical scientific and procedural. Neonatal care demands developing specific practical skills, given the neonate's vulnerability(24) and the findings herein show a positive panorama on the quality of care perceived by the parents in this sense. In the other dimensions, the analysis according to the items proposes aspects of interest, among which are highlighted that in the dimension of *Accessibility*, the item best evaluated by the parents has to do with the role of the nursing staff in relieving their children's pain, which indicates that the nurse prioritizes this need in neonates, an aspect of great importance within this care environment.(25)

Similarly, in the *Comforts* dimension, it is noted that the parents had a low evaluation regarding the possibility of the nursing staff to sit and start a conversation with them, but evaluated positively the nurse always being kind with their child in spite of having difficult situations. This finding makes sense, in that it shows that nurses can implement interpersonal and therapeutic communication; however, establishing a transpersonal relationship(9) can be complicated in neonatal units where the burden of excessive work and concern for the development of techniques displaces the recognition of the place occupied by significant human relations.(26) Lastly, in the dimension *maintains relations* of trust the results indicate that parents perceive that the nursing staff encourage them to ask the physician questions about their child's health, which indicates that it is necessary to strengthen communication not only in direction of the families,(27,28) but also among the health staff.

In conclusion, from a general point of view, parents have a positive perception of the nursing care their children receive in the neonatal unit. However, in the analysis by dimensions, the need exists to strengthen aspects mainly related to: *Explains and facilitates* and *Anticipates*, among which interpersonal relations and communication processes with the families and the health staff are highlighted.

The results guide toward the need to propose actions aimed at establishing settings and communication channels for the parents and health staff to enhance the creation of clearly defined and individualized care plans, involving the family as a subject of care. Likewise, it is important for the communication processes to favor the education provided to the parents for the care of their children and to involve them early on in said care, given that this aspect is determinant in the parents' trust and capacity of caring. The type of sampling is recognized as a study limitation, which for this study was not probabilistic, given that the dynamics of the unit has low rotation due to the prolonged hospitalizations of patients derived from their high complexity.

References

1. Sobel HL, Huntington D, Temmerman M. Quality at the centre of universal health care. Health Policy Plan. 2016; 30(4):547–9.
2. Almeida Santos de R, Bourliataux-Lajoinie S, Martins M. Satisfaction measurement instruments for healthcare service users: a systematic review. Cad. Saúde Pública. 2015; 31(1):11-25.
3. Fernandes Martins P, Galan Perroca M. Care necessities: the view of the patient and nursing team. Rev. Bras. Enferm. 2017; 70(5):1026-32.
4. Papastavrou E, Andreou P, Tsangari H, Merkouris A. Linking patient satisfaction with nursing care: the case of care rationing: a correlational study. BMC Nurs. 2014; 13(1):26.
5. Müggenburg C, Riveros-Rosas A, Juárez-García F. Entrenamiento en habilidades de comunicación en enfermeras y percepción del paciente que recibe su cuidado. Enferm. Univ. 2016; 13(4):201-7.
6. Alligood MR. Modelos y teorías en enfermería. 8th Ed. Barcelona: Elsevier- Mosby; 2014. p.78-96.
7. Jefferies AL, Canadian Paediatric Society, Fetus and Newborn Committee. Going home: facilitating discharge of the preterm infant. Paediatr. Child Health. 2014; 19(1):31-42.
8. Cantillo EM. Percepción de enfermería de los comportamientos de cuidado en las unidades de cuidado intensivo neonatal del distrito de Barranquilla [Internet]. Bogotá: Universidad Nacional de Colombia; 2015 [cited 12 Dec 2017]. Available from: http://www.bdigital.unal.edu.co/51270/1/32752241.2015.pdf
9. Ramírez CA, Parra M. Evaluación de la calidad del cuidado de enfermería en la unidad de cuidados. Rev. Av. Enferm.2011; 4(1):97-108.
10. Larson P. Important nurse caring behaviors perceived by patients with cancer. Oncol. Nurs. Forum.1984; 11(6):46-50.
11. Sepúlveda CG, Rojas CL, Cárdenas JO, Guevara RE, Castro HA. Estudio piloto de la validación del cuestionario CARE–Q en versión al español en población colombiana. Rev. Colomb. Enferm. 2009; 4(4):1-17.
12. Van der Elst E, Dierckx de Casterlé B, Biets R. et al. Oncology patients' perceptions of "the good nurse": a descriptive study in Flanders, Belgium. Med. Health Care Philos. 2013; 16:719-29.
13. Gonzales ML. Satisfacción del cuidado de enfermería en gestantes hospitalizadas por preeclampsia. [Internet]. Bogotá: Universidad Nacional de Colombia; 2015 [cited 12 Dec 2017]. Available from: http://www.bdigital.unal.edu.co/40150/1/539794.2014.pdf
14. Bautista LM. Percepción de la calidad del cuidado de enfermería en la ESE Francisco de Paula Santander. Aquichan. 2008; 8(1):74-84.
15. Rojas MW, Barajas LM. Percepción de la calidad del cuidado de enfermería en el servicio de urgencias. Rev. Cienc. Cuid. 2012; 9(1):13-23.
16. Guzmán de Melo MP. Percepción del cuidado de enfermería en un servicio de atención prenatal [Internet]. Bogotá: Universidad Nacional de Colombia; 2013 [cited 12 Dec 2017]. Available from: http://www.bdigital.unal.edu.co/43080/1/51555566-2013.pdf
17. Tavakol M, Dennick R. Making sense of Cronbach's alpha. Int. J. Med. Educ. 2011; 2:53–5.
18. Donoso E, Carvajal J.A, Vera C, Poblete J.A. Women age as a risk factor for maternal, fetal, neonatal and infant mortality. Rev. Méd Chile. 2014; 142(2):168-74.
19. Bernal CD, Cardona RD. Caracterización de la mortalidad perinatal en Manizales, Colombia. Hacia Promoc. Salud. 2014; 19(2):66-8.
20. Kayode GA, Ansah E, Agyepong IA, Amoakoh-Coleman M, Grobbee DE, Klipstein-Grobusch K. Individual and community determinants of neonatal mortality in Ghana: a multilevel analysis. BMC Pregnancy Childbirth. 2014; 14:165.
21. Ingram JC, Powell JE, Blair PS, Pontin D, Redshaw M, Manns S. Does family-centred neonatal discharge planning reduce healthcare usage? A before and after study in South West England. BMJ Open. 2016; 6:e010752.
22. Molina EM. Evaluación de la calidad del cuidado de enfermería en un servicio de hospitalización domiciliaria en Bogotá [Internet]. Bogotá: Universidad Nacional de Colombia; 2011 [cited 12 Dec 2017]. Available from: [http://www.bdigital.unal.edu.co/6471/

23. Daza R, Torres AM, Prieto GI. Análisis crítico del cuidado de enfermería: Interacción, participación y afecto. Index Enferm. 2005; 4 (48-49):18-22.
24. Camelo S. Competencias profesionales de los enfermeros para trabajar en Unidades de Cuidados Intensivos: una revisión integradora. Rev. Latino-Am. Enfermagem. 2012; 20(1):192-200.
25. Sposito NPB, Rossato LM, Bueno M, Kimura AF, Costa T, Guedes DMB. Assessment and management of pain in newborns hospitalized in a Neonatal Intensive Care Unit: a cross-sectional study. Rev. Latino-Am. Enfermagem. 2017; 25:e2931.
26. Ramírez P, Müggenburg C. Relaciones personales entre la enfermera y el paciente. Enferm. Univ. 2015; 12:134-43.
27. Wigert H, Blom Dellenmark M, Bry K. Strengths and weaknesses of parent–staff communication in the NICU: a survey assessment. BMC Pediatrics. 2013; 13:71.
28. Achury D, Pinilla M, Alvarado H.Aspects that facilitate or interfere in the communication process between nursing professionals and patients in critical state. Invest. Educ. Enferm. 2015; 33(1):102-11.

Original article

Promoting Preventive Behaviors of Nosocomial Infections in Nurses: The Effect of an Educational program based on Health Belief Model

Ali Khani Jeihooni[1]
Seyyed Hannan Kashfi[2]
Mina Bahmandost[3]
Pooyan Afzali Harsini[4]

Promoting Preventive Behaviors of Nosocomial Infections in Nurses: The Effect of an Educational program based on Health Belief Model

Objective. To determine the effect of educational program based on Health Belief Model (HBM) on promoting preventive behaviors of nosocomial infections in nurses. **Methods.** In this randomized controlled trial study, 120 nurses working in a hospital in Fasa City, Fars (Iran). Intervention group (n=60) received an educational program based on HBM while control group (n=60) did not received it. A questionnaire consisting of demographic information, HBM constructs (knowledge, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, performance and cues to action) was used to measure changes toward the prevention of nosocomial infections before, immediately after intervention and four months later (of the end of the intervention). **Results.** Immediately and four months after the intervention, the intervention group showed a

1 Health Education and Health Promotion, Ph.D. Assistant Professor, Department of Public Health, School of Health, Fasa University of Medical Sciences, Iran.
email: khani_1512@yahoo.com

2 Teaching in English, M.Sc. Departament of Nursing, School of Nursing, Larestan University of Medical Sciences, Iran.
email: Hannankashfi@yahoo.com

3 Public Health, B.Sc. Department of Public Health, School of Health, Fasa University of Medical Sciences, Iran.
email: minabahmandoost@gmail.com

4 Public Health, B.Sc. Kermanshah University of Medical Sciences, Kermanshah, Iran.
email: pooyanafzali@gmail.com

Conflicts of interest: None.

Received: October 10th, 2017.

Accepted: November 23rd, 2017.

How to cite this article: Jeihooni AK, Kashfi SH, Bahmandost M, Harsini PA. Promoting Preventive Behaviors of Nosocomial Infections in Nurses: The Effect of an Educational program based on Health Belief Model. Invest. Educ. Enferm. 2018; 36(1):e09.

DOI: 10.17533/udea.iee.v36n1e09

significant increase in the knowledge, perceived susceptibility, perceived severity, perceived benefits, Self-efficacy, cues to action and performance compared to the control group. **Conclusion.** This study in nurses showed that the effectiveness of the Educational program based on HBM on promoting preventive behaviors of nosocomial infections. Hence, this model can act as a framework for designing and implementing educational interventions for the prevention of nosocomial infections.

Descriptors: cross infection; control groups; perception; surveys and questionnaires; nurses.

Promoción en las enfermeras de comportamientos para la prevención de las infecciones nosocomiales. Efecto de un programa educativo basado en el Modelo de Creencias de Salud

Objetivo. Determinar el efecto del programa educativo basado en el modelo de creencias de salud (en inglés: Health Belief Model –HBM-) en la promoción en las enfermeras de comportamientos para la prevención de infecciones nosocomiales. **Métodos**. E|fn este ensayo controlado aleatorizado participaron 120 enfermeras quienes trabajaban en un hospital de la ciudad de Fasa, Fars (Irán). El grupo de intervención (n=60) recibió un programa educativo basado en HBM mientras que el grupo control (n=60) no lo recibió. Para medir el cambio en la percepción de los comportamientos para la prevención de infecciones nosocomiales se aplicó antes, al finalizar y a los cuatro meses después de la intervención se utilizó un cuestionario con información de los constructos del HBM (susceptibilidad percibida, gravedad percibida, beneficios percibidos, barreras percibidas, autoeficacia, desempeño y claves de acción). **Resultados.** Al finalizar el programa educativo y cuatro meses después de iniciado el mismo, el grupo de intervención mostró un aumento significativo en: conocimiento, susceptibilidad percibida, gravedad percibida, beneficios percibidos, autoeficacia, claves de acción y desempeño, en comparación con el grupo de control. **Conclusión.** Este estudio en enfermeras mostró la efectividad del programa educativo basado en la adopción del HBM para la promoción de comportamientos de prevención de infecciones nosocomiales. Por lo tanto, este modelo puede actuar como un marco de referencia para el diseño e implementación de intervenciones educativas para la prevención de este tipo de infecciones.

Descriptores: infección hospitalaria; grupos control; percepción; encuestas y cuestionarios; enfermeros.

Promoção em enfermeiras de comportamentos para a prevenção das infeções nosocomiais. Efeito de um programa educativo baseado no Modelo de Crenças de Saúde

Objetivo. Determinar o efeito do programa educativo baseado no modelo de crenças de saúde (em inglês: Health Belief Model –HBM-) na promoção das enfermeiras de comportamentos para a prevenção de infecções nosocomiais. **Métodos.** Neste ensaio controlado aleatorizado participaram 120 enfermeiras que trabalhavam num hospital da cidade de Fasa, Fars (Irão). O grupo de intervenção (n=60) recebeu um programa educativo baseado em HBM enquanto que o grupo controle (n=60) não o recebeu. Para medir a mudança na percepção dos comportamentos para a prevenção de infecções nosocomiais se aplicou antes, ao finalizar e aos quatro meses depois da intervenção se utilizou um questionário que com informação dos constructos do HBM (susceptibilidade percebida, gravidade percebida, benefícios percebidos, barreiras percebidas, auto-eficácia, desempenho e chaves de ação). **Resultados.** Ao finalizar o programa educativo e quatro meses depois de iniciado o mesmo, o grupo de intervenção mostrou um aumento significativo em: conhecimento, susceptibilidade percebida, gravidade percebida, benefícios percebidos, auto-eficácia, chaves de ação e desempenho, em comparação com o grupo de controle. **Conclusão.** Este estudo em enfermeiras mostrou a efetividade do programa educativo baseado em HBM na adoção para a promoção de comportamentos de prevenção de infecções nosocomiais. Por tanto, este modelo pode atuar como um marco de referência para o desenho e implementação de intervenções educativas para a prevenção deste tipo de infecções.

Descritores: infecção hospitalar; grupos controle; percepção; inquéritos e questionários; enfermeiros

Introduction

Nosocomial Infections (NIs) are considered as one of the most important problems of health centers around the world, especially in developing countries. They have been associated with consequences such as increased length of hospitalization and increased health care costs(1) and are considered a threat as they increase the spread of infection in the community.(2) A reduction in NIs incidence can help retrieve patient health and improve economic efficiency.(3) These infections are a major cause of mortality and increased complications among hospitalized patients. Reports show two million NIs resulting in 19 000 deaths among patients and each year.(4) According to the World Health Organization, 7.1 million cases of NIs occur annually and 1 out of every 20 people is infected in hospital leading to the death of 99 thousand people and imposing about 32-26 million dollars on societies.(5) Studies in the East Mediterranean and Southeast Asian regions showed that 11.8 percent of hospitalized patients were affected by NIs.(6) The main objective is to reduce the risk of acquiring NIs by patients, hospital staff, and patients' companions, and preventing transmission of infection by hospital staff and the patients' companions. Nurses play a crucial role in the control and prevention of NIs because they have the highest contribution to the treatment and care of the patient.(7)

Nurses can take appropriate measures in this regard such as disinfecting the skin, wearing gloves and masks, changing infusion sets, using caution measures, separating patients, using standard precautions, observing hand hygiene, preventing inadvertent contact with the needle sticks, avoiding exposure to infected respiratory secretions, and applying the principles of infection prevention in hospitalized patients.(8) Findings by Ghadamgahi *et al.*(3) suggest that many nurses do not have enough knowledge about controlling NIs. Therefore, continuous education is needed to raise nurses' awareness about NIs that can help reduce such infections.(9) Any training program designed to improve performance of nurses with the purpose of reducing NIs would be counterproductive without their awareness about their own practices and attitudes towards NIs control.(10) In order to achieve this goal, it will be necessary to identify factors influencing behavior.

Researchers use behavioral models to identify factors associated with behavior.(11) Theories can guide the performance of health educators and can be used during various stages of planning, implementation, and evaluation of a program.(12) Since the 1950s to the present, the Health Belief Model (HBM) has been widely used as a conceptual framework in studies related to health behavior to explain change or maintenance of health-related behaviors and also to guide the interventions related to health behaviors.(13) According to this model, a person adopts preventive health behavior under the influence of factors such as perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and efficacy.(14) In this model, perceived susceptibility, i.e. attitudes regarding their vulnerability and exposure to the risk of acquiring NIs, as well as Perceived severity, i.e. attitude about the severity and complications of NIs, are measured. The sum of these two factors is the nurses' perceived threat of NIs. Besides perceived threat, the perceived benefits and barriers, i.e. the analysis of the benefits of adopting preventive behaviors against NIs, analysis of potential barriers to appropriate preventive measures, and nurses' perceived capabilities for doing preventive behaviors; as well as cues to action, i.e. doctors and health workers, educational materials, and television and radio, help guide nurses to preventive practices against NIs. Zeigheimat showed the effectiveness of health belief model-based education on healthcare behaviors of nursing staff in controlling NIs.(15) Since preventing NIs is a global priority and training members of the health team, especially nurses, can play a significant role in the prevention and control of NIs, this study aimed to determine the effect of education based on Health Belief Model on promoting nurses' preventive behaviors about NIs.

Methods

This randomized controlled trial study was conducted on 120 nurses working in Vali-e-Asr hospital, Fasa City, Fars (Iran) in 2016. Sample size was estimated based on a previous study by Zigheimat *et al.*(15) in the intervention group, the mean and standard deviation of practice before and after the study were 37.88 ± 5.78 and 41.9 ± 5.42 in the study groups. Then, based on the mentioned study and considering $\beta = 0.90$, $\alpha = 0.05$, $S1 = 5.78$, $S2 = 5.42$, $\mu 1 = 37.88$, and $\mu 2 = 41.9$, 55 the number a subjects were estimated to be needed in each group. Therefore 60 subjects were recruited in each group to compensate the possible attrition.

After obtaining written consent from the university authorities, the researcher obtained the consent of hospital officials as well. Random allocation of the intervention method was used to select 120 nurses who were assigned to intervention ($n=60$) and control groups ($n=60$). Figure 1 presents the study flow diagram.

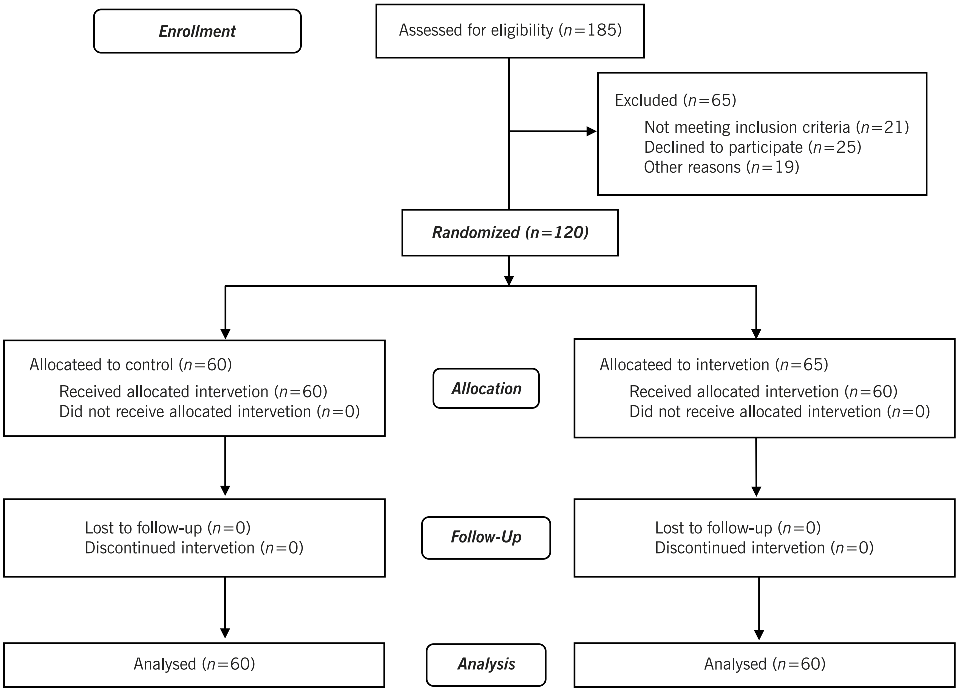

Figure 1. Flow chart of study

At the beginning of the study, one of the researchers introduced himself to the participants and explained the objectives of the study for them. The pre-test questionnaire was administered to both groups. Inclusion criteria were: having at least a diploma in nursing, consent to participate in the study, and work experience for at least three months in the ward. Exclusion criteria encompassed refusing to continue participation in the study and lack of cooperation due to illness and leave.

Educational intervention for the intervention group consisted of eight training sessions of 55-60 minutes including lecture, group discussion, questions and answers, as well as posters, pamphlets, videos, and PowerPoint presentations. Focus of the sessions were: first and second: introduction to NIs and symptoms and complications of infections; third and fourth: the principles of proper sterilization of hands, use of gloves and masks, isolation of patients, hand hygiene, hospital waste disposal, and prevention of contact with contaminated respiratory secretions; fifth and sixth: benefits and barriers to the use of standard precautions; seventh: the role of the self-efficacy, standard precautions, and adoption of preventive behaviors against NIs were discussed; and, eighth: the past materials were reviewed, and some manuals were distributed among the participants, and educational resources were introduced to them. Training sessions were held in the hospital's conference room and were planned in a way that did not interfere with their schedules. Immediately after the intervention, both intervention and control groups completed the questionnaire. To protect and promote the efforts of individuals in the intervention group, a training SMS (Short Message Sevice) about NIs was sent to each participant in the intervention group on a weekly basis. They also participated in a monthly training session held for retraining and follow-up activities. Four months later, both groups (intervention and control) completed the questionnaire.

The questionnaire was developed based on Health Belief Model and included: Knowledge, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, performance checklist, and demographic information. The performance of nurses regarding the adoption of preventive behaviors against NIs based on standard precautions was examined. The questionnaire was developed based on other studies and sources,(3,8,15) the Iranian National Nosocomial Infections Surveillance (NNIS), and also a survey of 15 experienced professors and faculty members in the field. In this regard, the panel of experts was asked to evaluate the clarity, simplicity, and relatedness of all items. Based on their comments, come items were excluded and some were modified. The content validity of the instrument was confirmed and the CVI was 85 percent for susceptibility, 87 percent for perceived severity, 81 percent for perceived benefits, 81 percent for perceived barriers, 89 percent for cues to action, 84 percent for perceived self-efficacy, and 92 percent for performance. The reliability of the questionnaire was also measured and the Cronbach's alpha coefficient was higher than 7.0 in all areas of the questionnaire. The high internal consistency of constructs was also confirmed (perceived susceptibility = 0.82, perceived severity =0.78, perceived benefits =0.8, perceived barriers = 0.79, perceived self-efficacy = 0.81, cues to action =0.83, and performance =0.84).Test-retest method was used to examine the reliability for stability of the instrument. To this end, first, the questionnaire was administered twice to 10 subjects with a 10-day interval. Then, the correlation between the two sets of test scores was calculated the Intra class Correlation Coefficient (ICC) = 0.80 for perceived susceptibility, ICC=0.75 perceived severity, ICC=0.82 for perceived benefits, ICC=0.81 for perceived barriers, ICC=0.82 for cues to action, ICC=0.80 for perceived self-efficacy, and ICC=0.83 for performance.

Besides the HBM constructs, the questionnaire collected demographic data on age, sex, education, work history, and workplace of subjects. The items included: 10 items on awareness (True=1 and False=0); 5 items on perceived susceptibility, 5 items on perceived severity, 5 items on perceived self-efficacy, 5 items on perceived benefits, 5 items on perceived barriers, and 5 items on cues to action (a five-point Likert scale from strongly agree to strongly disagree). The performance checklist included 17 items (Yes=1 and No=0, for a total score of 0-17).

For ethical considerations, the approval of the Fasa University of Medical Sciences and the consent of all nurses participating in the study were obtained. The participants were assured that their information would remain confidential. After the study, some educational booklets on preventive behaviors against NIs were distributed among the nurses.The collected data were coded and analyzed via SPSS version 22 using Chi-square, independent samples t-test, Mann-Whitney, Wilcoxon, and Repeated Measures ANOVA at a significance level of 0.5.

Results

The mean age of subjects was 27.8±5.5 in the intervention group and 28.12±5.3 years in the control group. The mean work experience period was 10.1±5.2 years in the intervention group and 9.9±5.6 years in the control group. The independent t-test showed no significant difference between the two groups. Table 1 shows the demographic data including sex, education level, employment status, marital status, and place of work. The predominant charachteristics of the groups were: married women, with Bachelor's education, with contractual employment, and they work principally in emergency and medical-surgical services. Based on chi-square test there was no significant difference between the two groups.

The results showed no significant differences between the intervention and control groups before the intervention in terms of level of knowledge, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, performance and cues to action. However, immediately after the intervention and four months after the intervention, the intervention group showed a significant improvement compared to the control group in each of these areas except perceived barriers. The perceived barriers component significantly decreased for the intervention group compared to the control group (compare the difference between the mean score of the groups) (Table 2).

Discussion

Reducing incompliance with hygiene guidelines is considered as the end goal of health education. The Health Belief Model used in this study as the theoretical framework, is an applied model, which has been widely used by various scholars for planning and evaluating interventions aimed at behavior change.(16) The results of the present study, which was carried out to evaluate the effect of HBM-based education on nurses' preventive behaviors against NIs, confirm the efficiency of this model in changing the nurses' behavior. The findings showed a significant increase in nurses' awareness four months after the educational intervention, while no significant change was observed in control group in this area. This finding of this study is consistent with the results of other studies, such as Zigheimat,(15) Suchitra,(17) and Ghaffari.(18)

In a study conducted in India by Sabane(19) on 108 nursing students, the subjects' awareness increased significantly after the intervention. The increase in intervention group's awareness after educational intervention shows the effects of the training sessions on the nurses. Training and awareness raising are among the most effective methods of combating NIs. Obviously, continuous awareness alongside effective methods of disinfection and sterilization can decrease infections. The mean scores of the intervention group on perceived susceptibility and perceived severity (perceived threat) after educational intervention showed a significant increase compared to before the intervention, but did not change in the control group. Zigheimat's study showed that in order to strengthen the health beliefs of nurses, one of the fundamental steps would be to create a sense of vulnerability to NIs among them.(15) The results of this study are consistent with theory-based studies by Gorman

Table 1. Demographic data of intervention and control groups

Variable	Intervention group (n=60)		Control group (n=60)		p-value
	Number	Percent	Number	Percent	
Sex					
Male	10	16.7	12	20	0.621
Female	50	83.3	48	80	
Education					
Diploma	5	8.3	6	10	0.769
Bachelor's	52	88.3	54	90	
Master's	2	3.3	0	0	
Employment status					
Project based	8	13.3	7	11.7	0.315
Contractual	40	66.7	46	7.6	
Permanent	12	20	10	16.7	
Marital Status					
Single	14	23.3	12	20	0.515
Married	46	76.7	48	80	
Place of work					
Emergency service	12	20	10	16.7	0.371
Medical-Surgical	16	26.7	18	30	
Gynecology and maternity	11	18.3	12	20	
Operating Room	4	6.7	5	8.3	
Dialysis and ICU	6	10	7	11.7	
Pediatrics	8	13.3	7	11.7	
Nursing Station	3	5	1	1.7	

et al.(20) and Tehrani *et al*.(21) Health Belief Model is a useful model to interpret communities' responses to infectious disease.(22) Highlighting the severity of a condition (disease) in the community can cause people to see themselves at a higher risk and probably to take a series of health-related measures. The results of this study showed that the intervention group's scores on the perceived benefits in the post-test increased significantly compared to the control group, but their score on the perceived barriers decreased. Since the nursing staff are at a risk due to the nature of their job, which requires dealing with patients and doing risky behaviors, one of the fundamental steps in order to create a positive attitude among them and strengthen their health beliefs is to create a sense of being vulnerable to such infections among them and to highlight the benefits of such an attitude for nurses and the reduced costs for patients and hospitals. In addition, the nurses' perceived barriers should be reduced by regular interventions. Zigheimat *et al*. found that the perceived benefits of nurses increased after the educational intervention, but their perceived barriers declined.(15) Noruzi *et al*.(23) showed that the perceived benefits of nurses were mostly about their own and their families' health interests as well as the treatment of the patients. Shalanski's study(24) showed that perceived barriers were the most important obstacle for adopting new behaviors.

Ghadamgahi *et al*.(3) and Ghanbari *et al*.(25) evaluated the perceived benefits and perceived barriers of nurses and found that they were at an acceptable level. The results of this study showed

Table 2. Comparison between the mean scores of participants' knowledge, HBM components, and performance

Variable	Intervention (*n* =60)			Control (*n* =60)			*p*-value2
	Mean	SD	*p*-value1	Mean	SD	*p*-value1	
Knowledge							
Pre- intervention	4.7	2.4		4.1	2.6		0.258
Post- intervention	8.8	1.3	<0.001	4.7	2.5	0.082	<0.001
Four months later	9.3	1.3	<0.001	5.2	2.6	0.074	<0.001
Perceived Susceptibility							
Pre- intervention	12.8	2.3		11.1	1.8		0.624
Post- intervention	20.5	2.7	<0.001	10.7	1.7	<0.061	<0.001
Four months later	22.8	2.1	<0.001	11.8	1.8	<0.100	<0.001
Perceived Severity							
Pre- intervention	9.7	2.3		9.2	1.9		0.096
Post- intervention	13.3	3.5	<0.001	9.8	1.9	0.211	<0.001
Four months later	19.9	2.3	<0.001	10.1	1.1	0.181	<0.001
Perceived Benefit							
Pre- intervention	13.5	2.8		13.3	3.0		0.714
Post- intervention	18.7	2.7	<0.001	12.2	2.9	0.614	<0.001
Four months later	21.6	2.0	<0.001	13.0	2.0	0.213	<0.001
Perceived Barrier							
Pre- intervention	20.5	2.0		20.7	2.3		0.192
Post- intervention	18.2	2.0	<0.001	18.6	2.4	0.621	<0.001
Four months later	10.2	2.0	<0.001	18.8	2.5	0.001	<0.001
Performance							
Pre- intervention	7.1	1.8		7.3	1.3		0.660
Post- intervention	10.9	3.0	<0.001	8.1	1.1	0.241	<0.001
Four months later	14.3	1.5	<0.001	8.8	1.5	0.301	<0.001
Self-efficacy							
Pre- intervention	7.7	1.9		7.7	1.2		0.165
Post- intervention	10.9	2.4	<0.001	8.8	1.2	0.072	<0.001
Four months later	16.9	2.6	<0.001	9.1	1.5	0.084	<0.001
Cues to Action							
Pre- intervention	7.6	1.9		7.9	1.7		0.161
Post- intervention	12.2	1.9	<0.001	7.4	1.7	0.211	<0.001
Four months later	18.3	1.5	<0.001	7.4	1.6	0.182	<0.001

(1) Comparison with first evaluation (RM ANOVA); (2) Comparison between experimental and control group (t test for evaluation).

that the self-efficacy of nurses in the intervention group enhanced after educational interventions. Pike recommended that self-efficacy could be used in the clinical environment for stimulating and motivating nursing students for professional development.(26) In another study, self-efficacy was mentioned as an important factor in academic nursing education.(27) Results of the study by Zigheimat *et al*.(15) showed an increase in self-efficacy of nurses in the intervention group in controlling NIs after educational intervention compared to the control group. The results of this study in this regard are consistent with other studies.(21,28,29) The mean score of the intervention group on cues to action showed a significant increase after educational intervention compared to the control group. Zigheimat *et al*.(15) also found that cues to action mean score increased after educational intervention. In studies by Masood Hussain(30) and Boyce(31) training seminars were found to be the most important cues to action. Ghanbari(25) found that workshops were the most important cues to action.(25) Jeihooni *et al*.(32) found an increase in the mean scores on cues to action after the educational intervention.

In this study, the mean score of the intervention group on preventive behaviors against NIs increased after the intervention. In the same line, Suchitra *et al*.(17) concluded in their study that education had a positive impact on performance of health care workers regarding NIs. They also pointed to the need to develop a system of continuing education for health care workers (17). Zigheimat *et al*.(15) suggested that nurses' performance in controlling NIs increased after the intervention in the intervention group compared to the control group. Studies by Kaewchana(33) and Fazrzan(34) showed that training improved the subjects' hand washing performance. Javaheri Tehrani(21) showed that training based on HBM enhanced women's performance regarding the urinary tract infection.

The results of this study show the effectiveness of the intervention program and the need for educational interventions on preventive behaviors against NIs. As a result of the HBM-based education, the intervention group's scores on the components improved significantly leading to better NIs preventive behaviors. Given the importance of NIs, the need for fundamental solutions and proper planning to prevent them is felt. Educational programs for nurses, doctors and other health care personnel as well as educational programs on radio and television are essential. Therefore, educational interventions should improve the perceived susceptibility and severity of people about compliance with NIs control standards. Analyzing the benefits associated with infection control standards, removing barriers, and increasing self-efficacy and cues to action among nurses can help them change their behavior in controlling NIs. Periodic and in-service training should also be held for nurses based on the HBM and other health training and promotion models. One of the limitations of this study was self-reporting of performance on NIs control by nurses.

Acknowledgments: This study is part of the approved projects by Research Council of Fasa University of Medical Sciences under number 93218. The researchers appreciate the Research Deputy of Fasa University of Medical Sciences as well as nurses, who participated in this study.

References

1. Kostakoğlu U, Saylan S, Karataş M, İskender S, Aksoy F, Yılmaz G.Cost Analysis And Evaluation Of Nosocomial Infections In Intensive Care Units. Turk. J. Med. Sci. 2016; 46(5):1385-92.
2. Dawczynski K, Schleußner E, Dobermann H, Proquitté H. Infection Prevention in Premature Infants and Newborns in Thuringia: Implementation of Recommendation of the Commission for Hospital Hygiene and Infection Prevention (KRINKO). Z Geburtshilfe Neonatol. 2017; 221(1):30-8. [German]
3. Ghadamgahi F, Zighaimat F, Ebadi A, Houshmand A. Knowledge, attitude and self-efficacy of nursing staffs in hospital infections control. Iran. J. Mil. Med. 2011; 13(3):162-72. [Persian]
4. Petty WC. PACU-why hand washing is vital!. J. Perianesth. Nurs. 2009; 24(4):250-3.
5. Cardo D, Dennehy PH, Halverson P, Fishman N, Kohn M, Murphy CL, et al. Moving toward elimination of healthcare-associated infections: a call to action. Infect. Control Hosp. Epidemiol. 2010; 31(11):1101-5.
6. Lee MK, Chiu CS, Chow VC, Lam RK, Lai RW. Prevalence of hospital infection and antibiotic use at a university medical center in Hong Kong. J. Hosp. Infect. 2007; 65(4):341-7.
7. Luo Y, He GP, Zhou JW, Luo Y. Factors impacting compliance with standard precautions in nursing, China. Int. J. Infect. Dis. 2010; 14(12):e1106-14.
8. Stone PW, Hasan S, Quiros D, Larson EL. Effect of guideline implementation on costs of hand hygiene. Nurs. Econ. 2007; 25(5):279-84.
9. White A. Clinical decision making among fourth year nursing students: An interpretive study. J. Nurs. Educ. 2003; 42(3):113-20.
10. Bird A, Wallis M. Nursing knowledge and assessment skills in the management of patient receiving analgesia via epidural infusion. J. Adv. Nurs. 2002; 40(5):522-31.
11. Erasmus V, Brouwer W, van Beeck EF, Oenema A, Daha TJ, Richardus JH, et al. A qualitative exploration of reasons for poor hand hygiene among hospital workers: lack of positive role models and of convincing evidence that hand hygiene prevents cross-infection. Infect. Control Hosp. Epidemiol. 2009; 30(5):415-9.
12. Van Rensburg GH, Botma Y. Bridging the gap between self-directed learning of nurse educators and effective student support. Curationis. 2015; 38(2):1503.
13. Glanz K, Rimer B, Viswanath K. Health Behavior and Health Education: Theory, Research and Practice. 4th ed. San Francisco: Jossey-Bass; 2008.
14. Jeihooni AK, Hidarnia A, Kaveh MH, Hajizadeh E, Askari A. Effects of an Osteoporosis Prevention Program Based on Health Belief Model Among Females. Nurs. Midwifery Stud. 2015; 4(3):e26731.
15. Zeigheimat F, Ebadi A, Rahmati-Najarkolaei F, Ghadamgahi F. An investigation into the effect of health belief model-based education on healthcare behaviors of nursing staff in controlling nosocomial infections. J. Educ. Health Promot. 2016; 5:23.
16. Hazavehei SM, Khani Jeihooni A, Hasanzadeh A, Amini S. The effect of educational program based on BASNEF model for eye care in non-insulin dependent diabetic patients. J. Res. Health Sci. 2010; 10(2):81-90.
17. Suchitra JB, Lakshmi Devi N. Impact of education on knowledge, attitudes and practices among various categories of health care workers on nosocomial infections. Indian J. Med. Microbiol. 2007; 25:181–7.
18. Ghaffari M, Tavassoli E, Esmaillzadeh A, Hassanzadeh A. Effect of Health Belief Model based intervention on promoting nutritional behaviors about osteoporosis prevention among students of female middle schools in Isfahan, Iran. J. Educ. Health Promot. 2012; 1:14.
19. Sabane HH, Dixit RR, Durge P. Impact of knowledge about Post exposure prophylaxis among nursing students-A cross sectional study. Healthline. 2011; 2(1):27-30.
20. Gorman JR, Brewer NT, Wang JB, Chambers CD. Theory-based predictors of influenza vaccination among pregnant women. Vaccine. 2012; 31:213–8.
21. Javaheri Tehrani F, Nikpour S, Haji Kazemi EA, Sanaie N, Shariat Panahi SA. The effect of education based on health belief model on health beliefs of women with urinary tract infection. Int. J. Community Based Nurs. Midwifery. 2014; 2(1):2-11.

22. Jeong HS, Lee DW, Youn CH, Lee MK, Lee SJ, Suh YS, et al. Perception and Performance of Preventive Behaviors for the Pandemic Influenza in Hospital Employees and Outpatients. Yonsei Med. J. 2011;52:181–7.
23. Noruzi T, Rassouli M, Khanali Mojen L, Khodakarim S, Torabi F. Factors associated with nosocomial infection control behavior of nurses working in nursery & NICU based on Health Belief Model. J. Health Promot. Manag. 2015; 4(3):1-11.
24. George J, Shalansky SJ. Predictors of refill non-adherence in patients with heart failure. Br. J. Clin. Pharmacol. 2007; 63(4):488-93.
25. Ghanbari M K, Farazi AA, Shamsi M, Khorsandi M, Esharti B. Measurement of the Health Belief Model (HBM) in Nurses Hand Hygiene among the Hospitals. World Appl. Sci. J. 2014; 31(5):811-8.
26. Pike T, O'Donnell V. The impact of clinical simulation on learner self-efficacy in pre-registration nursing education. Nurse Educ. Today 2010; 30(5):405-10.
27. Kowitlawakul Y, Brenkus R, Dugan N.Predictors for success for first semester, second-degree Bachelor of Science in Nursing students. Int. J. Nurs. Pract. 2013;19(Suppl 1):38-43.
28. Khani Jeihooni A, Hidarnia A, Kaveh MH, Hajizadeh E. The Effect of a Prevention Program Based On Health Belief Model on Osteoporosis. J. Res. Health Sci. 2015; 15(1):47-53.
29. Chariyeva Z, Golin CE, Earp JA, Suchindran C. Does motivational interviewing counseling time influence HIV-positive persons' self-efficacy to practice safer sex?. Patient Educ. Couns. 2012; 87(1):101-7.
30. Masood Hussain Rao. Assessment of Knowledge, Attitude and Practices Pattern of Hand Washing in Some Major Public Sector Hospitals of Pakistan (A Multi-Center Study). Pak. J. Med. Res. 2012; 51(3):76-82.
31. Boyce JM, Pittet D; Healthcare Infection Control Practices Advisory Committee. Society for Healthcare Epidemiology of America. Association for Professionals in Infection Control. Infectious Diseases Society of America. Hand Hygiene Task Force. Infect. Control Hosp. Epidemiol. 2002; 23(12 Suppl):S3-40.
32. Jeihooni AK, Hidarnia A, Kaveh MH, Hajizadeh E, Askari A. The Effect of an Educational Program Based on Health Belief Model on Preventing Osteoporosis in Women. Int. J. Prev. Med. 2015; 6:115.
33. Kaewchana S, Simmerman M, Somrongthong R, Suntarattiwong P, Lertmaharit S, Chotipitayasunondh T. Effect of intensive hand washing education on hand washing behaviors in thai households with an influenza-positive child in urban Thailand. Asia Pac. J. Public Health. 2012; 24(4):577-85.
34. Farzan M, Zerin I, Kabir M, Pavel M, Hossain M. Health Education Intervention on Hand Washing in a selected Primary School Children. Bangladesh J. Dental Res. Educ. 2012; 2:7–11.

Original article

UNIVERSIDAD
DE ANTIOQUIA
1803

Indian nurses' Knowledge, Attitude and Practice towards use of physical restraints in psychiatric patients

Sailaxmi Gandhi[1]
Vijayalakshmi Poreddi[2]
Nagarajaiah[3]
Marimutthu Palaniappan[4]
S. Sai Nikhil Reddy[5]
Suresh BadaMath[6]

Indian nurses' Knowledge, Attitude and Practice towards use of physical restraints in psychiatric patients

Objective. To assess nurses' knowledge, attitude and practice towards using physical restraints among psychiatric patients. **Methods.** A descriptive cross sectional survey was carried out among conveniently selected sample of nurses working in psychiatry departments at a tertiary care center. The data was collected using self reported questionnaires of Suen. **Results.** The findings revealed that nurses had good knowledge (7.2 ± 1.7, maximum posible=11), favorable attitudes 30.8 ± 3.3 (maximum posible=48) and good practice 31.2 ± 6.2 (maximun posible=42) about use of physical restraints in psychiatric patients. Females had better knowledge ($p<0.001$), attitudes ($p<0.05$) than males towards use of physical restraints. Nurses those had more than ten years of experience found to have more favorable attitudes towards using physical restraints than nurses with less experience ($p<0.05$) and nurses with higher education

---

[1] Ph.D. Additional Professor, Department of Nursing National Institute of Mental Health and Neuro Sciences, (Institute of National Importance), Bangalore (India).
email: sailaxmi63@yahoo.com

[2] RN, RM, BSN, MSN. College of Nursing, National Institute of Mental Health and Neuro Sciences, (Institute of National Importance), Bangalore (India).
email: pvijayalakshmireddy@gmail.com

[3] PhD, Former Additional Professor, Department of Nursing National Institute of Mental Health and Neuro Sciences, (Institute of National Importance), Bangalore (India).
email: dr.nagarajaiah@gmail.com

[4] PhD, Additional Professor, Department of Bio-Statistics, National Institute of Mental Health and Neuro Sciences, (Institute of National Importance), Bangalore (India).
email: p_marimuthu@hotmail.com

[5] Second year MBBS. Bangalore Medical College and Research Institute, Bangalore (India).
email: saithereddy@gmail.com

[6] MD, Psychiatry. Professor, Department of Psychiatry National Institute of Mental Health and Neuro Sciences, (Institute of National Importance), Bangalore (India).
email: nimhans@gmail.com

Conflicts of interest: None.

Received: June 8th, 2017.

Acepted: November 24th, 2017.

How to cite this article: Gandhi S, Vijayalakshmi P, Nagarajaiah, Marimuthu P, Reddy SSN, Suresh BM. Indian nurses' Knowledge, Attitude and Practice towards use of physical restraints in psychiatric patients. Invest. Educ. Enferm. 2018; 36(1):e10.

DOI: 10.17533/udea.iee.v36n1e10

Investigación y Educación en
Enfermería
–Nursing Research and Education–
UNIVERSIDAD DE ANTIOQUIA 1803
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

differed significantly on practice score than nurses with basic education in nursing ($p<0.05$). **Conclusion.** This study revealed good knowledge, positive attitudes and good practices among nurses about using physical restraints in mental health services. However there is need to improve even more nurses practice through continuing education programs on this topic.

Descriptors: cross-sectional studies; health knowledge, attitudes, practice; restraint, physical; psychiatric nursing.

Conocimientos, actitudes y prácticas de las enfermeras hindúes sobre el uso de restricciones físicas en pacientes psiquiátricos

Objetivo. Evaluar los conocimientos, las actitudes y las prácticas de las enfermeras hacia el uso de restricciones físicas en los pacientes psiquiátricos. **Métodos.** Se realizó un estudio descriptivo de corte transversal en una muestra por conveniencia de enfermeras que laboraban en departamentos de psiquiatría de un hospital de atención terciaria al sur de la India. Los datos se recolectaron utilizando el cuestionario de Suen, el cual fue contestado por autorreporte. **Resultados.** Los hallazgos revelaron que en cuanto al uso de restricciones físicas en pacientes psiquiátricos las enfermeras tenían buen conocimiento (media =7.2±1.7, máximo posible=11), actitudes favorables (media=30.8±3.3, máximo posible=48) y buenas prácticas (media=31.2 ± 6.2, máximo posible=42). Las mujeres tenían mejores conocimientos ($p<0.001$) y actitudes ($p<0.05$) que los varones hacia el uso de restricciones físicas. Las enfermeras con más de diez años de experiencia tuvieron actitudes más favorables hacia el uso de estas restricciones que las de menor experiencia ($p<0.05$) y las enfermeras con educación superior difirieron significativamente en el puntaje de la práctica comparadas con aquellas con educación básica en enfermería ($p<0.05$). **Conclusión.** Este estudio reveló buenos conocimientos, actitudes positivas y buenas prácticas de las enfermeras sobre el uso de restricciones físicas en los servicios de salud mental. Sin embargo, es necesario mejorar aún más las prácticas de las enfermeras a partir de programas de educación continua sobre este tema

Descriptores: estudios transversales; conocimientos, actitudes y práctica en salud; restricción física; enfermería psiquiátrica.

Conhecimentos, atitudes e práticas das enfermeiras hindus sobre o uso de restrições físicas em pacientes psiquiátricos

Objetivo. Avaliar os conhecimentos, as atitudes e as práticas das enfermeiras para o uso de restrições físicas nos pacientes psiquiátricos. **Métodos.** Se realizou um estudo descritivo de corte transversal numa amostra por conveniência de enfermeiras que trabalhavam em departamentos de psiquiatria de um hospital de atenção terciaria no sul da Índia. Os dados foram recolhidos utilizando o questionário de Suen, o qual foi contestado por auto-reporte. **Resultados.** As descobertas revelaram que em quanto ao uso de restrições físicas em pacientes psiquiátricos as enfermeiras tinham bom conhecimento (media =7.2±1.7, máximo possível=11), atitudes favoráveis (media=30.8±3.3, máximo possível=48) e boas práticas (média=31.2 ± 6.2, máximo possíveis=42). As mulheres tinham melhores conhecimentos ($p<0.001$) e atitudes ($p<0.05$) que os homens para o uso de restrições físicas. As enfermeiras com mais de dez anos de experiência tiveram atitudes mais favoráveis para o uso destas restrições que as de menor experiência ($p<0.05$) e as enfermeiras com educação superior deferiram significativamente na pontuação da prática comparadas com aquelas com educação básica na enfermagem ($p<0.05$). **Conclusão.** Este estudo revelou bons conhecimentos, atitudes positivas e boas práticas das enfermeiras sobre o uso de restrições físicas nos serviços de saúde mental. Embora, seja necessário melhorar ainda mais as práticas das enfermeiras através de programas de educação continua sobre este assunto.

Descritores: estudos transversais; conhecimentos, atitudes e prática em saúde; restrição física; enfermagem psiquiátrica.

Introduction

The use of Physical Restraints (PR) within the psychiatric services is a common practice worldwide. Physical restraints refer to any physical methods of restricting a person's freedom of movement, physical activity or normal access to his or her body.(1) Use of restraints in mental health care setting perceived differently as some people view restraint of psychiatric patients as a violation of basic human rights, others as a necessity to reduce the risk of harm among psychiatric patients whether it is directed toward self or toward others (2) and others as a therapeutic modality. However, throughout history the practice of restraint has been associated with punishment, custodial care, institutional abuse and neglect.(3) On the other hand, using of physical restraints among psychiatric patients raises a range of ethical, legal, and clinical questions.(4,5) Psychiatric management in India often includes the practice of physical restraints to control aggressive patients not only in psychiatric hospitals and also in places of traditional healing.(6) For example, the Erwadi tragedy, which was a fire accident, occurred on August 06, 2001 and 28 psychiatric patients died at Moideen Badhusha Mental Home, because they had been fettered and could not escape. Today, nine years later, and despite the existence of laws against such practices, nothing has changed.(7) Drew et al also reported that mental health policies and laws in low- and middle-income countries failed to incorporate international human rights and best practice standards to prevent violation of human rights. India was not an exception. The new Mental Health Care Bill 2016 focused on a rights-based protection of persons with mental illness and guidelines for using seclusion and restraints.(8)

Earlier studies report that elderly and persons with mental illness have a higher rate of physical restraint use worldwide.(9) Nurses are ethically obligated to ensure the patient's basic rights and restraints must not be used for coercion, punishment, discipline, or staff convenience.(10) Further, nurses are the health care providers who initiate restraint use and attribute its use to ensuring the safety of the restrained and the others.(11) Their role starts with the selection of appropriate restraint device to ending with modifying the patient care plan based on an hourly assessment of the patient's response and physical condition.(12) The nurses' positive attitudes towards physical restraints may influence their practice in general.(13) A recent study among psychiatric nurses showed ambivalent attitudes towards use of physical restraints among mental health consumers.(14) Further, it was argued that nurses' views and attitudes toward the use of physical restraints may create conflicts with patients' rights, including their autonomy in making decisions for their own care.(15) In a recent cross sectional surveys from India and Australia, most psychiatrists opined that coercion violates the patients' integrity and may harm therapeutic relationships.(16) Since nurses' knowledge and attitude towards physical restraints is closely related to their practice, it is critical to assess nurses' knowledge, attitude and practice towards use of physical restraints to develop standardized guidelines in mental health care settings. Further, there were no formal studies on this issue from India. Hence, the present study was aimed to assess knowledge, attitude and practice towards use of physical restraints among nurses those working in psychiatric health care settings.

Methods

The present study was carried out among nurses working at a tertiary care center in South India in the month of November 2015. Descriptive design was adopted for the present study. The study sample was selected through convenient sampling technique. The inclusion criteria for this study as follows; a) both gender, b) nurses those were working in different psychiatric units with minimum one year of experience. A total of 140 nurses were eligible to participate in the study. However, six of the participants were absent during data collection, four of them refused to participate and two of the incomplete questionnaires were discarded. Hence, the final sample consisted of 128 nurses with 86% response rate.

Data were collected through self administered questionnaire which comprised of 4 parts: *1- Socio demographic profile:* included background information of the participants such as age, gender, experience and education; *2- Knowledge questionnaire about the use of physical restraints:* used to assess nurses knowledge, towards using the Physical Restraints in psychiatric patients(17) and consisted of 11 items with closed ended responses such as 'true' or false. The correct responses were given a score of '1'and incorrect responses a score of '0'. Thus a score of 11 represented 100% correct responses; *3- Attitudes toward the use of physical restraints:* This was a four point Likert scale with 12 items (4 negatively worded items) used to assess nurses' attitudes towards use of physical restraints.(17) The responses were scored with a four for "strongly agree", to a one for "strongly disagree". Thus high scores reflected positive attitudes and low scores reflected negative attitudes. Items 4, 9, 10 and 12 were negative and their scores were reversed. Thus, high scores with cutoff point >24 reflected positive attitudes and low scores with cutoff ≤24 reflected negative attitudes (potential range: 12–48); *4- Nurses' practice towards use of physical restraints:* This part addresses nurses' practice about use of physical restraints in mental health care settings. The participants were asked to respond to a three-point Likert scale ranged from 'always' (3) to never (1). Item no 10 was a negative item and the responses need to be reversed. Thus a score of 14 indicates the most undesirable practice and a score of 42 the best practice in terms of restraint use. The reliability coefficients for the knowledge, attitudes and practice scales were 0.65, 0.61 and 0.94 respectively.(17)

The questionnaire was piloted among 15 of participants and found that the study was feasible. Hence no necessary modifications were made. The lead researcher approached the nurses various departments of psychiatry units and the objective and procedure of the study were explained to potential participants. After obtaining permission from the administrators of the hospital, researchers met the participants individually at their workplaces and explained the purpose of the research data that would be collected from the nurses who were willing to participate in the study. Participants were reminded that they could withdraw from the study at any time and confidentiality of the data was assured. After obtaining written informed consent, the self-reported questionnaires were distributed to participants. For the Statistical analysis, negatively worded items were reverse coded and the data were analyzed using 'R' statistical software. The results were presented in narratives and tables. The t-test was used to determine whether significant differences existed between the participants regarding mean knowledge, attitude and practice scores. Statistical significance was assumed at $p<0.05$.

Results

This study represents 79% of the nurses working at a Psychiatric hospital in South India. Among 128 respondents, a majority were females (77.3%). The mean age of the nurses was 36.9±8.66 (range 24-59 yrs, M±SD) and 50% of them were below 35 years of age. More number of them were experienced more than 11yrs (55.5%) and Diploma (GNM) holders (57.8%).

Table 1. Characteristics of the participants (*n*=128)

Variable	Group	Frequency	Percentage
Age	<25	3	2.3
	26-35	64	50
	36-45	38	29.7
	46-55	19	14.8
	>55	4	3.1
Gender	Male	29	22.7
	Female	99	77.3
Experience	≤10yrs	57	44.5
	≥11yrs	71	55.5
Education	GNM	74	57.8
	BSN	43	33.6
	Others	11	8.6

With regard to participants responses to knowledge about use of restraints, a majority of them agreed that 'physical restraints are safety garments designed to prevent injury' (78.1%), 'restraints should be released every 2 hours' (79.7%), and 'when patient is restrained skin breakdown may increase' (79.7%). While 39.1% agreed, a majority (60.9%) disapproved to the item 'restraints should be used when one cannot watch the patient closely'. Most of the participants answered correctly to the items related to the rights of the patients i.e. 'patients are allowed to refuse to be placed in a restraint' (61.7%) and 'physical restraints require a consent form from the family member' (74.2%). However, the mean score on knowledge scale was above average of 7.2±1.7 (maximum possible= 11), that indicates good knowledge about use of restraints among the participants (Table 2).

Table 2. Participants' knowledge towards use of physical restraints

Item	Agree		Disagree	
	f	%	f	%
1. Physical restraints are safety, garments designed to prevent injury.	100*	78.1	28	21.9
2. Restraints should be used when one cannot watch the patient closely	50	39.1	78*	60.9
3. Patients are allowed to refuse to be placed in a restraint	79*	61.7	49	38.3
4. A physical restraint (safety, vest, garment) requires a consent form from the family member	95*	74.2	32	25
5. A restraint should be released every 2 hours, if the patient is awake	102*	79.7	26	20.3
6 Restraints should be put on snugly so that there is no space between the restraint and the patients skin	42	32.8	86*	67.2
7. When a patient is restrained skin breakdown may increase.	102*	79.7	26	20.3
8. When a patient is restrained in bed, the restraint should not be attached to the side rail	79*	61.7	49	38.3
9. A patient should never be restrained while lying flat in bed because of the danger of choking	78*	60.9	50	39.1
10. Good alternatives to restraints do not exist	40	31.3	88*	68.8
11. Deaths have been linked to the use of vest restraints	32*	25	96	75

(*) Correct responses

Table 3 depicts the participants' attitudes towards use of physical restraints among psychiatric patients. A majority of the participants hold positive attitudes towards rights of the participants as they agreed with 1 and 2 items i.e. 'I feel that family members have the right to refuse the use of restraints' (78.9%) and 'If I were the patient, I feel I should have the right to refuse or resist when restraints are placed on me' (75.8%). Unfortunately, nearly half of the participants (*n*=61, 47.6%) disapproved that 'patient suffers a loss of dignity when placed in restraints'. While 40.6% of the participants felt guilty, majority of them disagreed for placing a patient in restraints. Similarly, nearly three fourth of the participants did not feel embarrassed when the family enters the room of a patient who is restrained. However, more than 56% of the participants felt bad if the patients got upset or become more disoriented after the restraints have been applied. It was disappointing to note that 45.3% of the participants opined that 'applying restraints assures legal protection to his/her self and his/her hospital'. The mean score on this section was 30.8± 3.3 (ranged from 24 to 45) of a maximum possible of 48 and suggest favorable attitudes among the participants towards use of physical restraints among persons with mental illness.

Table 3. Participants' responses to Attitude towards physical restraints questionnaire

Item	A/SA		DA/SDA	
	f	%	f	%
1. I feel that family members have the right to refuse the use of restraints	101	78.9	27	21.1
2. If I were the patient, I feel I should have the right to refuse or resist when restraints are placed on me	97	75.8	31	24.2
3. I feel guilty placing a patient in restraints	52	40.6	76	59.4
4. I feel that the main reason that restraints are used is that the hospital is short staffed	27	21.1	101	78.9
5. I feel embarrassed when the family enters the room of a patient who is restrained.	33	25.8	95	74.2
6. It makes me feel bad if the patients get more upset after restraints are applied.	73	57.1	55	43
7. It makes me feel bad when patients become more disoriented after the restraints have been applied.	72	56.2	56	43.8
8. A patient suffers a loss of dignity when placed in restraints	67	52.4	61	47.6
9. It is important to apply restraints to assure legal Protection for myself and my hospital	58	45.3	70	54.7
10. I feel that placing a patient in restraints can decrease nursing care time	29	22.6	99	77.4
11. I believe that restraints increase the risk of strangulation	51	39.9	77	60.1
12. I believe that restraints decrease the number of patients to fall	82	64.1	46	35.9

Table 4 addresses the nurses practices with regard to use of physical restraints in psychiatric patients. A majority (93%) of the nurses agreed that they always/sometimes try alternative nursing measures before restraining the patient. More number of the participants stated that they sometimes than always restraints the patients only with physicians' order and they suggest the doctor when they feel that patient doesn't need to be restrained. Majority of the participants expressed that they check the restraint every two hours to make sure they are in position and inspect the skin of the patient for abrasions or skin tears. Unfortunately, 79.7% opined that more patients are restrained when there is short of staff. Similarly, more number of the nurses felt sometimes than always work together to discover ways to control patients' behavior than use of restraints and assesses if the restraint to be removed. The mean score of nurses' practice related to use of restraints in psychiatric patients was 31.2±6.2 (range 15-42) of maximum possible of 42. These findings indicate good practice related to use of physical restraints among nurses.

Table 4. Nurses' practice towards using of physical restraints in Psychiatric patients

Items	Always		Sometimes		Never	
	f	%	f	%	f	%
1. I try alternative nursing measures before restraining the patient	58	45.3	61	47.7	9	7
2. When I restrain a patient, I make this decision only with a physician's order	50	39.1	61	47.7	17	13.3
3. When I feel that the patient does not need to be restrained. I make this suggestion to the doctor	41	32	66	51.6	21	16.4
4. I answer the call for the patient who is restrained as soon as possible	57	44.5	56	43.8	15	11.7
5. I check the restraint every two hours to make sure they are in the proper position	71	55.5	44	34.4	13	10.2
6. I inspect the skin of the patient for abrasions or skin tears if I bath the Patient who is restrained	66	51.6	45	35.2	17	13.3
7. I tell family members why the patient is being restrained	63	49.2	45	35.2	20	15.6
8. I explain to the patient why the restraint is being applied	74	57.8	42	32.8	12	9.4
9. I tell the patient when the restraints will be removed	54	42.2	52	40.6	22	17.2
10. More patients are restrained when we are short of staff than when we are fully staffed	102	79.7	18	14.1	8	6.3
11. In our hospital staff members work together to discover ways to control patients behavior other than use of physical restraints	33	25.8	74	57.8	21	16.4
12. I frequently assess if the restraint should be removed	34	26.6	77	60.2	17	13.3
13. When physical restraint is applied. I record on the nursing charts the type of restraint used, the reason for adopting it, the time when the application commences, and the related nursing care required	62	48.4	54	42.2	12	9.4
14. I frequently evaluate and record the effect of physical restraint when it is applied to a patient	56	43.8	57	44.5	15	11.7

On correlation analysis, it was revealed statistically significant association between gender with knowledge (r=0.30, $p<0.001$) and attitude (r=0.21, $p<0.05$) of the participants. Females had better knowledge, attitudes than males towards use of physical restraints. However there was no significant difference between gender and practice of the nurses with related use of physical restraints. Nurses those had more than ten years of experience found to be favorable attitudes than nurses with less experience (r=0.17, $p<0.05$). On one way analysis, nurses with higher education differed significantly on practice score than nurses with basic education in nursing ($p<0.05$). A significant correlation was found between nurses' total scores of knowledge ($p<0.01$), attitude ($p<0.001$) with their practice of using physical restraints.

Discussion

This was a first cross sectional survey that assessed nurses' knowledge, attitude and practice towards physical restraints in psychiatric patients. The findings reveled that nurses had better knowledge and favorable attitudes as reflected in good practice of using physical restraints in psychiatric patients. There were significant association between gender with knowledge and attitude of the participants towards use of the physical restraints. However, a positive significant correlation was found between knowledge, attitude and practice scores of the participants.

In the present study, majority (79%) of the nurses agreed that skin breakdown may increase when patients are restrained. These findings were in line with earlier studies that found 'dehydration, choking, circulatory and skin problems, loss of muscle strength and mobility, pressure sores, incontinence and injury from associated physical/mechanical restraint, injury from other patients, increased psychological distress and, in rare circumstances, death were the adverse events associated with use of physical restraints among patients.(18) Although, nurses in the current study, endorsed good knowledge and positive attitudes towards rights of patients, nearly one quarter of nurses disagreed that 'family members have the right to refuse the use of Physical restraints'. These findings were in consistent with earlier studies conducted among Psychiatric nurses(14) and ICU nurses.(19) These findings suggest need to improve nurses' knowledge on patients' rights and ethical issues related to use of physical restraints.(14)

In supporting the previous studies,(19) nearly half the participants in this study disapproved with the statement "A patient suffers a loss of dignity when placed in restraints". It is unfortunate to note the nurses' unawareness about the feelings of the psychiatric patients when they were restrained and this negative attitude also increases the use of physical restraints. Published evidence report that patients as a result of being restrained reported that they felt angry, helpless, sad, and powerless, punished, embarrassed, and that their right to autonomy and privacy has been violated, in addition to a feeling of loss of self worth, degradation, demoralization and humiliation while they are restrained.(20) Further, recent studies in India report that most of the psychiatrists' had negative attitudes towards coercion among psychiatric patients as it violates the integrity of the patients.(21) Earlier research report array of emotional reactions among nurses while restraining the patients such as anxiety, anger, feeling bored or distressed, crying, inadequacy, hopelessness, frustration, fear, guilt, dissatisfaction, isolation, being overwhelmed, feeling drained, vengeance and repugnance.(22) In line with these findings, the present study also showed guilty and disagreement among the participants to place patients on restraints.

In the current study, nearly three fourths of the participants did not feel embarrassed when the family enters the room of a patient who is restrained and support the earlier evidence.(19) Further nearly 43% of the participants did not feel bad if the patients got upset or become more disoriented after the restraints have been applied. Earlier studies also indicate no emotional reaction among nurses.(22) These findings could be attributed to the fact the practice of physical restraints had become so ritualized that it does not provoke any reaction among nurses.(23)

A vast majority of the nurses in this study agreed that they would try alternative nursing measures before restraining the patients. These results were in concordance with previous research among nurses that found several alternative methods that could be used before applying Physical Restraints such as providing companionship and supervision, offering physical and diversional activities, playing soft music, manipulating environments.(14) Interestingly, merely 9.4% of the nurses in this study agreed that they never record on the nursing charts about the type and the reason for applying restraints. These findings were inconsistent with earlier studies that indicate less than half of the nurses do not record data about PR use in patient's chart.(14) However, majority (79.7%) of the nurses felt that more patients are restrained when they are short of staff. These findings were inconsistent with other studies(19) and suggest the need for creating awareness among nurses regarding the reasons for applying the restraints.

The result of the current study is consistent with earlier studies (19) found that more than 50% of the patients were restrained physically and removed without written medical orders. However, this number is lesser than the present study where 39% of the nurses restrain the patients with doctors' order. In line with previous findings,(14) in the present study nurses those had more than ten years of experience found to be favorable attitudes than nurses with less experience. These findings suggest that better experience improves nurses' decision making about proper use of physical restraints. In the current study, female nurses with higher education had better knowledge and positive attitudes towards use of physical restraints and these findings were in support of the earlier evidence.(24) In addition, nurses' knowledge, attitude and practice scores towards use of physical restraints were positively correlated. These findings were in agreement with other studies.(19)

The present study has certain limitations such as cross sectional survey, small and convenient sampling and the data was collected from a single setting. Hence, it is difficult to generalise the findings. However, the study contributes to the literature by assessing nurses' knowledge, attitudes and practices towards use of physical restraints in mental health care settings which is a common practice in India. The findings may be helpful to nursing administrators to develop standardized protocols about using of physical restraints among psychiatric patients.

Conclusion

This study revealed good knowledge, positive attitudes and good practices among nurses about using physical restraints in mental health services. Further, in line with earlier findings,(6) out study also showed that nurses with higher education had good practice related to use of physical restraints. These findings indicate the need for continuing education about use of physical restraints among nurses may help to protect human rights of patients with mental illness.

References

1. Martin B. Restraint use in acute and critical care settings: changing practice. AACN clinical issues. 2002; 13(2):294-306.
2. Gelkopf M, Roffe Z, Behrbalk P, Melamed Y, Werbloff N, Bleich A. Attitudes, opinions, behaviors, and emotions of the nursing staff toward patient restraint. Issues Ment. Health Nurs. 2009; 30(12):758-63.
3. Moosa MYH, Jeenah FY. The Use of Restraints in Psychiatric Patients. S. Afr. J. Psychiatr. 2009; 15(3):72-5.
4. Mohr WK. Restraints and the code of ethics: An uneasy fit. Arch. Psychiatr. Nurs. 2010; 24(1):3-14.
5. Steinert T, Lepping P, Bernhardsgrütter R, Conca A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. Soc. Psychiatry Psychiatr. Epidemiol. 2010; 45(9):889-97.
6. Khandelwal S, Deb K, Krishnan V. Restraint and seclusion in India. Indian J. Soc. Psychiatry. 2015; 31(2):141-7.
7. Ghanashyam B, Nagarathinam S. India is failing the mentally ill as abuses continue. Lancet. 2010 13; 376(9753):1633-4.
8. Antony JT. The mental health care bill 2013: A disaster in the offing? Indian J. Psychiatry. 2014; 56(1):3-7.
9. Lai CK, Chow SK, Suen LK, Wong IY. The effect of a restraint reduction program on physical restraint rates in rehabilitation settings in Hong Kong. Rehabil. Res. Pract. 2011; 2011:284604.
10. Springer G. When and how to use restraints. Am. Nurse Today. 2015; 10:1. Available from: https://www.americannursetoday.com/use-restraints/
11. Lai CKY. Nurses using physical restraints: Are the accused also the victims? – A study using focus group interviews. BMC Nurs. 2007; 6:5.
12. De Jonghe B, Constantin J-M, Chanques G, Capdevila X, Lefrant J-Y, Outin H, et al. Physical restraint in mechanically ventilated ICU patients: a survey of French practice. Intensive Care Med. 2013; 39(1):31-7.
13. Wynn R. Staff's attitudes to the use of restraint and seclusion in a Norwegian university psychiatric hospital. Nord J. Psychiatry. 2003; 57(6):453-9.
14. Mahmoud AS. Psychiatric Nurses' Attitude and Practice toward Physical Restraint. Arch. Psychiatr. Nurs. 2017; 31(1):2-7.
15. Al-Khaled T, Zahran E, El-Soussi A. Nurses' related factors influencing the use of physical restraint in critical care units. J. Am. Sci. 2011; 7(8):13-22.
16. Kinner SA, Harvey C, Hamilton B, Brophy L, Roper C, McSherry B, et al. Attitudes towards seclusion and restraint in mental health settings: findings from a large, community-based survey of consumers, carers and mental health professionals. Epidemiol. Psychiatr. Sci. 2016; 12:1-10.
17. Suen K. Knowledge, attitude and practice of nursing home staff towards physical restraints in Hong Kong nursing homes. Asian J. Nurs. Stud. 1999; 5(2):73-86.
18. Barnett R, Stirling C, Pandyan AD. A review of the scientific literature related to the adverse impact of physical restraint: gaining a clearer understanding of the physiological factors involved in cases of restraint-related death. Med. Sci. Law. 2012; 52(3):137-42.
19. Azab S, Abu Negm L. Use of physical restraint in intensive care units (ICUs) at Ain Shams University hospitals, Cairo. J. Am. Sci. 2013; 9(4):230-40.
20. Elgamal M. Patients and staff attitudes toward physical restraint. Current Psychiatry. 2006; 13(3):474.
21. Gowda GS, Noorthoorn EO, Kumar CN, Nanjegowda RB, Math SB. Clinical correlates and predictors of perceived coercion among psychiatric inpatients: A prospective pilot study. Asian J. Psychiatry. 2016; 22:34-40.
22. Kamel NMF, Maximos MHF, Gaafar MM. Reactions of Patients and Psychiatric Hospital Staff About Physical Restraint. Alexandria Sci. Nurs. J. 2007; 6(2):1-22.
23. Sequeira H, Halstead S. The psychological effects on nursing staff of administering physical restraint in a secure psychiatric hospital: 'When I go home, it's then that I think about it'. Br. J. Forensic Pract. 2004; 6(1):3-15.
24. Chien W-T, Lee IY. Psychiatric nurses' knowledge and attitudes toward the use of physical restraint on older patients in psychiatric wards. Int.J Mult. Res. Approaches. 2007; 1(1):52-71.

Original article

Use of Hydrocolloid Dressings in Preventing Pressure Ulcers in High-risk Patients: a Retrospective Cohort

Olga Lucía Cortés[1]
Luz Dary Salazar-Beltrán[2]
Yudi Andrea Rojas-Castañeda[3]
Paula Andrea Alvarado-Muriel[4]
Aracelly Serna-Restrepo[5]
Doris Grinspun[6]

Use of Hydrocolloid Dressings in Preventing Pressure Ulcers in High-risk Patients: a Retrospective Cohort

Objective. This work sought to evaluate the association between using preventive hydrocolloid dressings and the onset of pressure ulcers in hospitalized patients. **Methods.** Retrospective cohort study that included adult patients with high risk of pressure ulcers (PU) evaluated according to the Braden scale and who had been admitted with preventive purposes to a skin care program. The preventive care prescribed by the nursing staff included using hydrocolloid dressing plus conventional care (HD+CC) or only conventional care (CC), in a tier IV hospital in Bogotá, Colombia. Information was obtained from the clinical records of the demographic variables, health, and complications during hospitalization. **Results.** One-hundred seventy subjects were included in the study (23 in HD+CC and 147 in CC). In all, 30.4% of the patients in the HD+CC group and 17% in the CC group had PU during follow up (p=0.15). The ratio between the type of

---

[1] Nurse, Ph.D. Fundación Cardioinfantil - Instituto de Cardiología, Bogotá, Colombia.
email: olgacortesf@gmail.com

[2] Nurse, Specialist. Fundación Cardioinfantil - Instituto de Cardiología, Bogotá, Colombia.
email: lsalazar@cardioinfantil.org

[3] Nurse, Specialist. Fundación Cardioinfantil - Instituto de Cardiología, Bogotá, Colombia.
email: jrojasc@cardioinfantil.org

[4] Nurse, Fundación Cardioinfantil - Instituto de Cardiología, Bogotá, Colombia.
email: paulaalvarado0225@gmail.com

[5] Nurse, Specialist. Fundación Cardioinfantil - Instituto de Cardiología, Bogotá, Colombia.
email: aserna@cardioinfantil.org

[6] Nurse, Ph.D. Executive Director, Registered Nurses´ Association of Ontario, Toronto, Canada.
email: DGrinspun@rnao.org

Article linked to research: PENFUP: Evaluation of the impact of using skin protectors versus conventional care with skin lubrication in preventing pressure ulcers in high- and very high-risk patients admitted to all the medical-surgical care services: multi-centric clinical trial.

Funding: Programa Nacional de Ciencia Tecnología e Innovación en Salud, Colciencias. Contract 277865740699.

Conflict of interest: None.

Received: September 19th, 2017

Accepted: December 11th, 2017

How to cite this article: Cortés OL, Salazar-Beltrán LD, Rojas-Castañeda YA, Alvarado-Muriel PA, Serna-Restrepo A, Grinspun D. Use of Hydrocolloid Dressings in Preventing Pressure Ulcers in High-risk Patients: a Retrospective Cohort. Invest. Educ. Enferm. 2018; 36(1):e11.

DOI: 10.17533/udea.iee.v36n1e11

preventive treatment received and the development of PU obtained a raw Hazzard ratio (HR) of 1.35 ($CI_{95\%}$: 0.58-3.14; p=0.48) and HR adjusted for confounding variables of 1.06 ($CI_{95\%}$: 0.29-3.84 p=0.92). **Conclusion.** Our results showed no superiority of HD+CC against CC in preventing PU in adult patients with high risk according to the Braden scale. The cohort study did not reveal significant differences between both interventions. It is necessary to promote and develop clinical trials to evaluate the effectiveness of using dressings and other conventional care in high-risk patients for this type of event.

Descriptors: adult; bandages, hydrocolloid; hospitalization; pressure ulcer; retrospective studies; skin care.

Uso de apósitos hidrocoloides en la prevención de úlceras por presión en pacientes de alto riesgo: una cohorte retrospectiva

Objetivo. Evaluar la asociación entre el uso de apósitos hidrocoloides preventivos y la aparición de úlceras por presión en pacientes hospitalizados. **Métodos.** Estudio de cohorte retrospectivo que incluyó pacientes adultos con alto riesgo de úlceras por presión (UPP) evaluados según escala Braden y que habían sido admitidos con fines preventivos en un programa de cuidado de la piel, en un hospital de cuarto nivel de atención, en Bogotá, Colombia. Los cuidados preventivos prescritos por el personal de enfermería incluyeron el uso de apósito hidrocoloide más cuidado convencional (AH+CC) o solo cuidado convencional (CC). Se obtuvo información de las historias clínicas de las variables demográficas, de salud y complicaciones durante hospitalización. **Resultados.** Se incluyeron en el estudio un total de 170 pacientes (23 de AH+CC y 147de CC). El 30.4% en el grupo AH+CC y el 17% de CC presentó UPP durante el seguimiento (p=0.15). La relación entre el tipo de tratamiento preventivo recibido y el desarrollo de UPP obtuvo un HR crudo de 1.35 ($IC_{95\%}$: 0.58-3.14; p=0.48) y un HR ajustado por factores de confusión de 1.06 ($IC_{95\%}$: 0.29-3.84 p=0.92). **Conclusión.** Nuestros resultados mostraron no superioridad de AH+CC frente al CC enfermero en la prevención de UPP en pacientes adultos con alto riesgo según Braden. El estudio de la cohorte no reveló diferencias significativas entre las dos intervenciones. Se hace necesario la promoción y desarrollo de ensayos clínicos que evalúen la efectividad del uso de los apósitos y otros cuidados convencionales en pacientes de alto riesgo para este tipo de evento.

Descriptores: adulto; vendas hidrocoloidales; hospitalización; úlcera por presión; estudios retrospectivos; cuidados de la piel.

Uso de curativos hidrocoloides na prevenção de úlceras por pressão em pacientes de alto risco: uma coorte retrospectiva

Objetivo. Avaliar a associação entre o uso de curativos hidrocoloides preventivos e a aparição de úlceras por pressão em pacientes hospitalizados. **Métodos.** Estudo de coorte retrospectivo que incluiu pacientes adultos com alto risco de úlceras por pressão (UPP) avaliados segundo escala Braden e que haviam sido admitidos com fins preventivos num programa de cuidado da pele, num hospital de quarto nível de atenção, em Bogotá, Colômbia. Os cuidados preventivos prescritos pelo pessoal de enfermagem incluíram o uso de curativo hidrocoloide mais cuidado convencional (AH+CC) ou só cuidado convencional (CC). Se obteve informação das histórias clínicas das variáveis demográficas, de saúde e complicações durante hospitalização. **Resultados.** Um total de 170 pacientes foram incluídos no estudo (23 de AH+CC e 147de CC). 30.4% no grupo AH+CC e 17% de CC apresentaram UPP durante o seguimento (p=0.15). A relação entre o tipo de tratamento preventivo recebido e o desenvolvimento de UPP obteve um HR cru de 1.35 ($IC_{95\%}$: 0.58-3.14; p=0.48) e um HR ajustado por fatores de confusão de 1.06 ($IC_{95\%}$: 0.29-3.84 p=0.92). **Conclusão.** Nossos resultados mostraram não superioridade de AH+CC frente a CC enfermeiro na prevenção de UPP em pacientes adultos com alto risco segundo Braden. O estudo da coorte não revelou diferencias significativas entre as duas intervenções. Se faz necessário a promoção e desenvolvimento de ensaios clínicos que avaliem a efetividade do uso dos curativos e outros cuidados convencionais em pacientes de alto risco para este tipo de evento.

Descritores: adulto; curativos hidrocoloides; hospitalização; lesão por pressão; estudos retrospectivos; higiene da pele.

Introduction

The onset of pressure ulcers (PU) is consequential of ischemic necrosis at skin level and subcutaneous tissue, produced by pressure exerted upon over a bony prominence.(1) Pressure ulcers are considered adverse events that further complicate the critical state of patients hospitalized with high-complexity problems, causing deaths associated to infection and sepsis. Studies of PU prevalence in hospitals in Europe, Canada, and the United States indicate a variation between 8.3% and 23%, with nearly two in every three a product of prolonged hospitalizations.(2,3) Studies of PU prevalence in hospitals in Colombia reveal a variation between 2.2% and 10%.(3)

Data indicate that 60% of ulcers are developed in intensive and chronic care units during the first two weeks of hospitalization and their risk increases by 74% when combined with the presence of factors, like immobility, alteration of the immune system and loss of body mass.(3-5) Other determining factors of the risk are humidity, excoriation, and capillary lesion of the skin.(6) Pressure on bony protrusions is the condition to produce these ulcers and among the sites of highest prevalence there are the heels, malleolus, trochanters, elbows, gluteus, and sacrum.(5-7) Death has been described associated to pressure ulcers when these lead to problems, like important sepsis related to infection of the lesion.(5,7)

The impact of the onset of PU not only affects the quality of life of the individuals and their families, but also the health systems. Costs in preventing and treating PU constitute a high burden for health systems throughout the world, so that the general cost of treating a PU is approximately US$70 000, with an estimated annual cost between 2.2 and 3.6 billion US dollars.(4-7) Prevention of the onset of PU means a priority in national and international public health, in terms of the patient's quality results.(8-10)

Recommendations based on evidence on interventions through conventional care and more specialized care, like using dressings in preventing PU, have been evaluated in the Clinical Practice Guides in Nursing by the Registered Nurses´ Association of Ontario (RNAO),(11) which are being implemented in our institution and show the best evidence available on all the interventions and care on PU prevention.(11) However, evidence on the effectiveness of other devices used in PU prevention is limited (low-moderate level of evidence), as is the case of using skin protectors, which have been the product of research aimed more toward healing PU, and have been progressively promoted for use in prevention.(12) Included among some of these products or devices, there are semipermeable skin protectors or dressings (polyurethane), padded dressings (hydrophobic, polyurethane), and hydrocolloid dressings (HD) (containing gelatin, pectin, carboxyl-methylcellulose).(13,14) A high degree of uncertainty exist on the preventive effectiveness of the dressings and their use associated to high costs per unit in health institutions for critical patients with prolonged hospital stay.(15)

Given that uncertainty prevails about the benefit of using skin dressings in preventing PU, the aim of our study was to estimate the association between exposure to using hydrocolloid dressings plus conventional care (HD+CC) compared to using only conventional care (CC) and PU incidence in adult patients, evaluated with high risk for pressure ulcer, included in the skin care program in a tier IV hospital through a retrospective study.

Methods

A retrospective cohort study was carried out. The study universe included adult patients with cardiovascular problems admitted to a private, high-complexity care foundation hospital in Bogotá D.C, Colombia. The population was comprised by 1461 clinical records from patients over 18 years of age admitted between June and December 2014; it was limited to patients admitted to hospitalization at risk of PU, but with intact skin, to any unit or care service during this period, and who had complete assessment record by the nursing staff from the Institutional Program on Prevention of Pressure Ulcers and Skin Care (PPCP, for the term in Spanish). This program seeks to administer preventive skin interventions on individuals at risk and conduct treatment in patients with wounds, ulcers, or other skin lesions. However, the preventive care strategies were begun within the program after the period of implementing the recommendations of a Clinical Practice Guide on the Prevention of Pressure Ulcers conducted between January and June 2014.(11)

The eligible population was made up of the clinical records from 170 patients over 18 years of age from both genders, who were hospitalized in any unit or intensive care service, with intact skin on admission to the PPCP, with a high or very high score of PU risk, according to the Braden scale (16) and who had been evaluated by the PPCP staff with a complete registry of the program variables, according to the clinical practice prevention guide.(11) These patients received the prescription of care prescribed in the clinical record based on the patient evaluation and according to the clinical decision made by the program's nursing staff along with each patient's treating physician. This prescription consisted in protecting at least one healthy area at risk with a) hydrocolloid dressing plus conventional care or b) only preventive conventional care (use of moisturizing lotion, changes of position, use of support surfaces or pressure regulating pillows, and anti-decubitus mattress).

The time during which the PU events stage I to stage IV (time to event) occurred was evaluated after admission to the PPCP. Both the confirmation of the ulcer and its degree of complication (Stage I to Stage IV, according to the National Pressure Ulcer Advisory Panel, NPUAP)(1) were identified through the note on the clinical record made by the expert from the PPCP, who reported if the lesion appeared in a protected zone through any of both treatments studied. Discharge information was included by the PPCP group, given by the date of death or from the hospital discharge.

To conduct this study, information consigned in the clinical record was obtained, which included socio-demographic variables (age, gender, educational level, type of occupation, and place of origin); related to the prior health status (antecedents, comorbidities, prior PU development); related to hospital admission and evolution of the health status (admission diagnosis, hospitalization service, areas of the skin at risk of PU, score on the Braden scale, complications, date of PU onset, stage of the ulcer, its location, time of hospital stay).

Bivariate analysis was performed to compare the basal characteristics between the treatment groups, using Student's t test for difference of means and the Chi squared test for difference of proportions. Incidence and behavior were estimated in function of the risk of PU onset in the study groups by using the Kaplan-Meier risk estimator. The association between the type of treatment and PU onset in the protected zones was estimated through Hazard Ratio with 95% confidence intervals, through raw estimation and a multivariate analysis with the Cox proportional risk model, adjusting for the co-variables identified as significant in the bivariate analysis ($p<0.05$), which were possible effect modifiers. This study was approved by the ethics committee in the participating hospital institution, as a preliminary phase included in the Pressure Ulcer Nursing Prevention study (PENFUP study).

Results

Of the total number of patients included ($n=170$), 23 received the HD+CC preventive treatment and 147 were administered only CC. The frequency of patients ≥ 65 years of age was significantly higher in the CC group compared to the HD+CC group (69.3 versus 39.1, $p<0.001$). It was generally observed that the groups were equal regarding the frequency distribution of participants in the variables for gender, educational level, place of origin, living with other people, and occupation between both groups. In relation to the evaluation of health antecedents, significant differences were also not observed related to prior PU presentation, or in terms of risk evaluated according to the Braden scale or according to the type of service to which the patients were admitted between both groups of care. Patients were hospitalized in a large proportion in an intensive care service in both groups without significant differences. Regarding health antecedents and comorbidities, a higher significant frequency was observed of patients with coronary disease in the group receiving care with HD+CC compared to the group with only CC, respectively (52.2% versus 31.3%, $p=0.01$) (Table 1).

In relation to the admission diagnosis and clinical evolution of the patients during hospitalization, a higher frequency was noted of patients admitted due to cardiovascular causes or alterations in the group receiving HD+CC compared to the CC group (34.8% versus 16.3, $p=0.04$). Likewise, HD+CC patients had greater hemodynamic complications (52.2% versus 34.0%, $p=0.02$) and were exposed to greater poly-medication (65.2% versus 39.5%, $p=0.02$) than the CC patients. Although no significant differences were present, a higher frequency was observed in the HD+CC group compared to the CC group in the variables of immobility (95.7% versus 85.7%) and incontinence (47.8 versus 29.3) (Table 2).

Although no statistical difference was found, the PU incidence was higher in the group receiving preventive treatment in the areas protected with HD+CC (30.4%) compared to the group with only CC (17%). In both groups, PU were evaluated as stage I or II, without difference in the proportion of contribution from each of them in each group. The average number of days of hospital stay was significantly higher in the group protected with HD+CC (38.2±32) versus the group protected with CC (23.1±23.3), with this difference being of 15.2 days. Although no significant differences were identified per zones of PU presentation, it was observed that PU incidence was higher in the sacrum, heels, and elbows in patients protected with HD+CC compared to those who received CC (Table 3).

Figure 1 shows the comparison of the Kaplan-Meier curves in function of time to the event due to PU, which are quite similar during the first 12 days in both treatment groups. This trend is reflected in the Kaplan-Meier survival analysis curves that are not statistically different through the Log-Rank test ($p=0.482$) (Figure 1).

To examine the association between using the preventive treatments studied and development of PU, the raw HR was compared to the adjusted HR, showing no significant difference between both. Additionally, the Cox multivariate proportional-hazards model revealed that the variables of age, poly-medication, and hemodynamic alterations were not effect modifiers (Table 4).

Table 1. Personal characteristics and antecedents according to PU preventive treatment group

Variables	Type of treatment		*p*-value
	HD + CC (*n* = 23)	CC (*n* = 147)	
Age, mean (SD)	**60.78 (17.7)**	**68.31 (19.0)**	**0.07**
Age ≥ 65 years, *n* (%)	**9 (39.1)**	**102 (69.3)**	**<0.001**
Gender, *n* (%)			**0.96**
Female	12 (52.2)	76 (51.7)	
Male	11 (47.8)	71 (48.3)	
Education level, *n* (%)			**0.10**
Primary	12 (52.0)	41 (27.80)	
High school	4 (17.4)	26 (17.7)	
Technical or university	2 (8.7)	16 (10.9)	
Admitted from home, *n* (%)	**19 (82.6)**	**85 (57.8)**	**0.23**
Lives with other people, *n* (%)	**19 (82.6)**	**95 (64.6)**	**0.40**
Occupation, *n* (%)			**0.65**
Employed	7 (30.0)	34 (13.6)	
Retired	6 (26.1)	47 (32.0)	
Unemployed	1 (4.3)	5 (3.4)	
Antecedent of PU	**2 (8.7)**	**11 (7.5)**	**0.65**
Health antecedents, *n* (%)*			
Coronary disease	12 (52.2)	46 (31.3)	0.01
Neurological alteration	9 (39.1)	68 (46.3)	0.75
Diabetes	8 (34.)	32 (21.8)	0.10
Kidney disease	5 (21.7)	26 (17.7)	0.52
Malnutrition	5 (21.7)	20 (13.6)	0.24
Cancer	1 (4.3)	35 (23.8)	0.07
Paraplegia, quadriplegia	1 (4.3)	11 (7.5)	1.00
Obesity	4 (17.4)	13 (8.8)	0.23
Dementia	3 (13.0)	19 (12.9)	0.72
Depression	3 (13.0)	7 (4.8)	0.09
Risk according to Braden scale, *n* (%)			
High	18 (81.8)	104 (75.2)	0.58
Very high	5 (21.2)	40 (27.2)	
Hospitalization service, *n* (%)			**0.26**
Intensive care	16 (69.6)	74 (50.3)	
Internal medicine	5 (21.7)	53 (36.1)	
Emergency	2 (80.7)	20 (13.6)	

(*) A patient may have more than one antecedent

Discussion

The findings from our study show no differences between using hydrocolloid dressings plus conventional care and using only conventional care in preventing the onset of pressure ulcers in adult patients hospitalized with high risk of developing these events. Given that no differences were observed in the benefit between one and the other

Table 2. Admission diagnosis and clinical evolution according to PU preventive treatment group

Variables	Type of treatment		*p* value
	HD + CC (*n* = 23)	CC (*n* = 147)	
Admission diagnosis, *n* (%)			
Cardiovascular alterations	8 (34.8)	24 (16.3)	0.04
Sepsis/Infection	6 (26.1)	37 (25.2)	1.00
Neurological alterations	4 (17.4)	34 (23.1)	0.78
Cancer	2 (8.7)	12 (8.2)	1.00
Major general surgery	1 (4.3)	16 (10.9)	0.47
Orthopedic surgery	1 (4.3)	5 (3.4)	0.58
Respiratory failure	1 (4.3)	14 (9.5)	0.69
Clinical problems, *n* (%)			
Immobility	22 (95.7)	126 (85.7)	0.13
Poly-medication	15 (65.2)	58 (39.5)	0.02
Incontinence	11 (47.8)	43 (29.3)	0.06
Dialysis	3 (13.0)	5 (3.4)	0.06
Complications, *n* (%)			
Hemodynamic alterations	12 (52.2)	50 (34.0)	0.02
Alteration of consciousness	11(47.8)	69(46.9)	0.93
Death	8 (34.8)	43 (29.3)	0.45

Table 3. Characteristics and incidence of PU according to preventive treatment group

Variables	Type of treatment		*p*-value
	HD + CC (*n*= 23)	CC (*n* = 147)	
Developed PU (event)	7 (30.4)	25 (17.0)	0.15
Stage I	4 (17.4)	15 (10.2)	
Stage II	3 (13.0)	10 (6.8)	
Zone of PU presentation			0.23
Sacrum	3 (13.0)	12 (8.2)	
Heel	2 (8.7)	2 (1.4)	
Elbows	1 (4.3)	5 (3.4)	
Malleolus	0	2 (1.4)	
Trochanter	0	1 (0.7)	
Others	1 (4.3)	3 (2.0)	
Days hospitalized, mean (SD)	38.3 (32.0)	23.1 (23.3)	0.03

preventive strategy, what the evidence shows is the promotion of higher-scale studies that permit evaluating their real impact in clinical care.

The presence of pressure ulcers can be explained by factors related to the patients' age and their physiopathological condition.(17) The results from our study are similar to the results described in other studies regarding the presence of factors related to PU, like age (elderly adults), coronary disease with possible alteration of consciousness

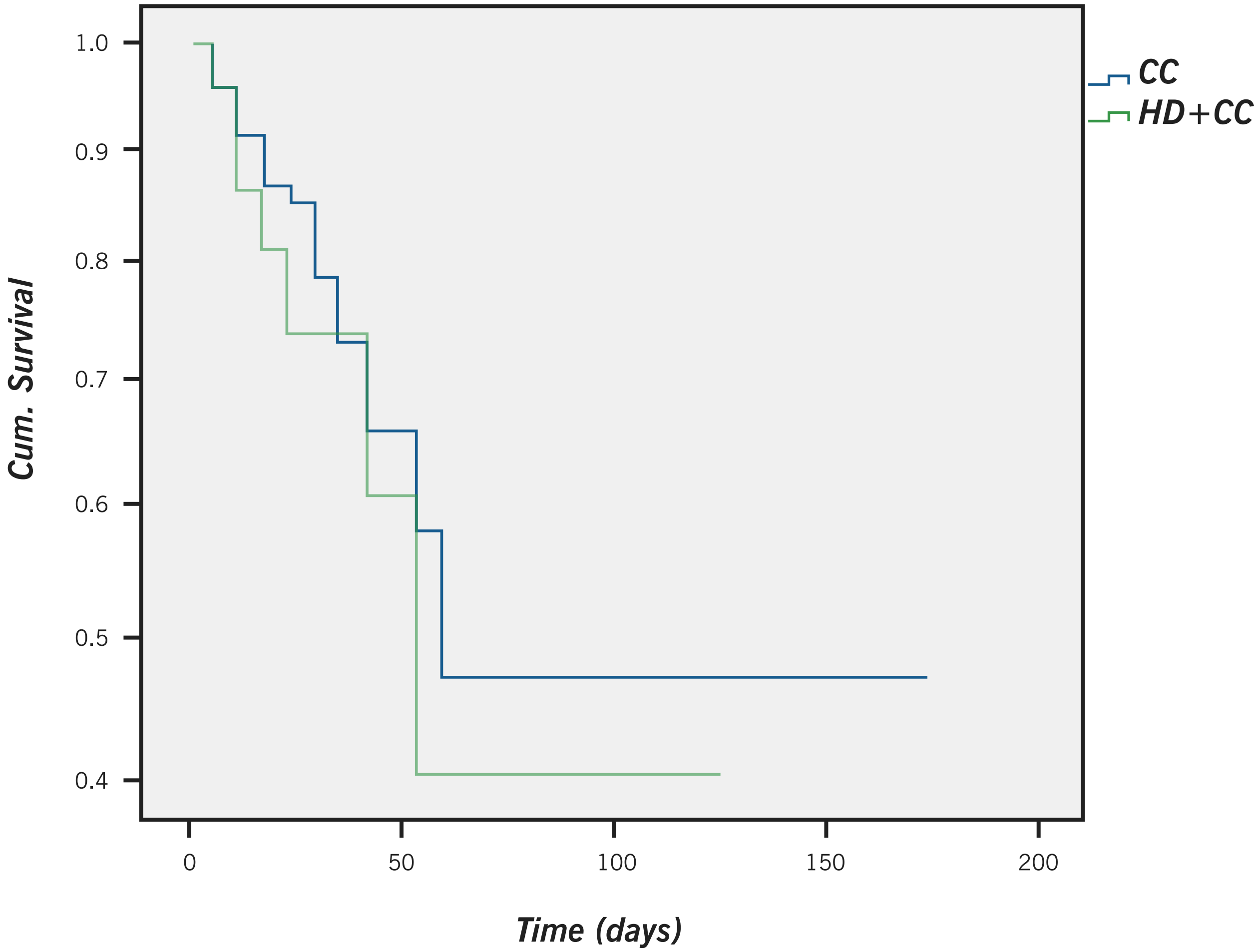

Figure 1. Kaplan-Meier estimations for the time in developing PU in patients, according to preventive treatment group

Table 4. Raw and adjusted hazard ratio of the association between the using hydrocolloid dressings with the onset of PU

Exposure	HR	Standard Error	CI95% HR	*p*-value
Use of hydrocolloid dressing + conventional care				
Estimated raw	1.4	0.4	0.6-3.1	0.48
Estimated adjusted	1.1	0.1	0.3-3.8	0.92
Age	**1.0**	**0.0**	**0.9-1.0**	**0.23**
Poly-medication	**1.0**	**0.5**	**0.4-2.5**	**0.96**
Hemodynamic alterations	**1.8**	**0.5**	**0.7-4.5**	**0.22**

associated to an alteration of the hemodynamic state, which also lead to immobility and limited tissue perfusion.(18) Patients described in the group of preventive care with dressings had significant differences related to antecedents of coronary disease and also had greater hemodynamic alterations and poly-medication, accounting for the severity of the patients in this group, which could lead to greater complications and to a prolongation of their hospital stay. Cardiovascular problems with hemodynamic alterations are characterized for having low cardiac output and consequently have hypo-perfusion in all bodily organs, including the skin. Additionally, medications that improve cardiac output do so at the expense of tissue vasoconstriction to improve it, producing peripheral hypoxia with repercussions on the skin.(17,19)

Hemodynamic problems may lead to an altered state of consciousness, as was the case of patients hospitalized in the HD+CC group, which led to two important problems related with PU onset: incontinence and immobility. In general, incontinence is managed by the nursing staff by using diapers that, if not controlled adequately, produce lesions associated to chronic moisture that can be confused for pressure ulcers.(12) Our study could not ensure existence of this confusion, given by the prevalence of stage I and stage II PU. The presence of pressure ulcers of a minor stage in our patients has been associated in our hospital to the implementation of the Clinical Practice Guide by the RNAO on PU prevention, which has permitted greater control of patients at risk through systemic evaluation by using the Braden scale, along with continuous evaluation of the record of events in all care services.(20) Another factor identified in our study, which requires a wake-up call is obesity; although it did not show significant differences, it was observed with higher frequency in patients receiving HD+CC compared to the group receiving only CC. This factor is important, given that it has been evidenced in literature that it can lead to greater complications and prolongation of the hospital stay, while becoming a challenge in terms of mobilization for health caregivers.(21)

Although using dressings in caring for wounds or ulcers already formed has proven its healing benefit, limited valid and reliable evidence exists with respect to their effectiveness or the conventional care measures to prevent pressure ulcers. Published data available from other research present serious limitations in the design and methods, thus, limiting their results from being the base to implement these prevention strategies.(14,22,23) Even so, some studies reveal results similar to ours, showing no differences between groups exposed to using HD compared to CC: Dutra et al.,(24) found that PU incidence was higher in the group using HD (15%) compared to the group receiving preventive care with another type of protection (8.7%). The study by Walker *et al.*,(15) reported no difference between using HD compared to CC (RR=0.73, $CI_{95\%}$ =0.18-3.05).

Given the need to reduce adverse events because they are associated to increased care costs and to complications in the patient's health,(25) it is necessary for the use of PU preventive measures to be based on scientific evidence that proves the real benefit. In the specific case of the HD, the Consensus of Wound Healing Societies(16) speaks of the uncertainty associated to the methodological limitations reported in studies with evidence in favor of hydrocolloid dressings, but – in turn – reflects the need to perform clinical trials to evaluate diverse preventive care strategies. Likewise, this Consensus recommends the continued use of conventional care strategies, like rotating patients per schedule and using support surfaces to reduce pressure on bony protuberances, friction and rubbing, and using moisturizing lotion without rubdowns.(12) These recommendations coincide with those provided by the Pressure Ulcer Prevention Guide, implemented in our institution, which describes effective interventions with only using gel dressings in patients during prolonged surgeries, as well as using specific mattresses for each type of risk according to the Braden scale, which are very costly strategies for our country(11) The use of conventional care preventive measures was implemented in our hospital since 2014 and these are combined with the use of hydrocolloid dressings as deemed by the nursing staff, in spite of the uncertainty about their effectiveness.

The limitations in this cohort study are given by the use of retrospective information obtained directly from the patient's clinical record, and although the group of nurses from the PPCP program is expert in skin wounds and lesions, it is not possible to establish the confirmation of the events investigated. Use of HD could have increased the confidence of the nursing staff in this intervention, keeping CC activities from being carried out, like mobilization and application of measure to reduce pressure with pillows. The conclusion in this study is that using HD+CC did not show superiority against CC in preventing PU in adult patients at high risk, according to the Braden scale. Our results show the need to perform well-designed clinical trials and of sufficient population size to evaluate the impact of using hydrocolloid dressings compared to conventional care in PU prevention.

References

1. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Hester (Ed). Cambridge Media: Perth, Australia; 2014.
2. Black J, Alves P, Brindle CT, Dealey C, Santamaria N, Call E, et al. Use of wound dressings to enhance prevention of pressure ulcers caused by medical devices. Int. Wound J. 2015; 12(3):322-27.
3. Black J, Clark M, Dealey C, Brindle CT, Alves P, Santamaria N, et al. Dressings as an adjunct to pressure ulcer prevention: consensus panel recommendations. Int. Wound J. 2015; 12(4): 484-88.
4. González-Consuegra RV, Cardona-Mazo DM, Murcia-Trujillo PA, Matiz-Vera GD. Estudio de prevalencia de úlceras por presión en Colombia: Informe preliminar. Rev. Fac. Med. 2014; 62(3):369-77.
5. Wang Y, Eldridge N, Metersky M, Verzier N, Meehan T, Pandolfi M, Foody J, et al. National Trends in Patient Safety for Four Common Conditions. N. Engl. J. Med. 2014; 370:341-51.
6. Lynch S, Vickery P. Steps to reducing hospital-acquired pressure ulcers. Nursing. 2010; 40:61–2.
7. VanGilder C, Amlung S, Harrison P, Meyer S. Results of the 2008-2009 International Pressure Ulcer Prevalence Survey and a 3-year, acute care, unit-specific analysis. Ostomy Wound Manage. 2009; 55:39–45.
8. Phillips L, Buttery J. Exploring pressure ulcer prevalence and preventative care. Nurs. Times. 2009; 105: 34–6.
9. Vanderwee K, Grypdonck M, Defloor T. Non-blanchable erythema as an indicator for the need for pressure ulcer prevention: A randomised controlled trial. J. Clin. Nur. 2007; 16(2): 325–35.
10. Woodbury M, Houghton P. Prevalence of pressure ulcers in Canadian Healthcare Settings. Ostomy Wound Manage. 2004; 50:22–4.
11. Registered Nurses' Association of Ontario. Risk assessment & prevention of pressure ulcers. (Revised 2011). Toronto, Canada: Registered Nurses' Association of Ontario; 2011 [cited 12 Dec 2017]. Available from: http://rnao.ca/sites/rnao-ca/files/Risk_Assessment_and_Prevention_of_Pressure_Ulcers.pdf
12. Black J, Fletcher J, Harding K, Moore Z, Ohura N, Romanelli M, et al. Consensus Document: Role of dressings in pressure ulcer prevention [Internet]. WUWHS; 2016 [cited 12 Dec 2017]. Available from: http://www.woundsinternational.com/wuwhs/view/consensus-document-role-of-dressings-in-pressure-ulcer-prevention
13. Moore Z, Cowman S. Pressure ulcer prevalence and prevention practices in care of the older person in the Republic of Ireland. J. Clin Nurs. 2012; 21:362–71.
14. Moore Z, Webster J. Dressings and topical agents for preventing pressure ulcers. Cochrane Database of Syst. Rev. 2013; (8): CD009362.
15. Walker R, Huxley L, Juttner M, Burmeister E, Scott J, Aitken LMA. Pilot Randomized Controlled Trial Using Prophylactic Dressings to Minimize Sacral Pressure Injuries in High-Risk Hospitalized Patients. Clin. Nur Research. 2017; 26(4):484-503.

16. Braden, BJ. Risk assessment in pressure ulcer prevention. In: Krasner D, Rodeheaver G, Sibbald RG (Eds.). Chronic wound care: A clinical source book for healthcare professionals. 3rd Ed. Wayne, PA: HMP Communications; 2015. p. 641-51.

17. Brindle CT, Wegelin JA. Prophylactic dressing application to reduce pressure ulcer formation in cardiac surgery patients. J. Wound Ostomy Continence Nurs. 2012; 39(2):133-42.

18. International Affairs & Best Practice Guidelines Transforming Nursing through Knowledge. Assessment and Management of Pressure Injuries for the Inter-professional Team [Internet]. 3rd Ed. IABGP; 2016 [cited 12 Dec 2017]. Available from: http://rnao.ca/bpg/guidelines/pressure-injuries.

19. Pellis T, Sanfilippo F, Ristagno G. The optimal hemodynamics management of post-cardiac arrest shock. Best Pract. Res. Clin. Anaesthesiol. 2015; 9(4):485-95.

20. Cortés OL, Serna-Restrepo A, Salazar-Beltrán LD, Rojas-Castañeda YA, Cabrera-González S, Arévalo-Sandoval I. Implementación de guías de práctica clínica de la Asociación de Enfermeras de Ontario-RNAO: Una experiencia de enfermería en un hospital colombiano. MedUNAB. 2016; 19(2):103-14.

21. Drake D, Swanson M, Baker G, Pokorny M, Rose MA, Clark-Reed L, et al. The association of BMI and Braden total score on the occurrence of pressure ulcers. J Wound Ostomy Continence Nurs. 2010; 37(4):367–71.

22. Weng MH. The effect of protective treatment in reducing pressure ulcers for non-invasive ventilation patients. Crit. Care Nurse. 2008; 24:295-9.

23. Santamaría N, Gerdtz M, Liu W, Rakis S, Sage S, Ng AW. Clinical effectiveness of a silicone foam dressing for the prevention of heel pressure ulcers in critically ill patients: Border II Trial. J. Wound Care. 2015; 24:340-5.

24. Dutra RA, Salomé GM, Alves JR, Pereira VO Miranda FD, Vallim VB, et al. Using transparent polyurethane film and hydrocolloid dressings to prevent pressure ulcers. J. Wound Care.2015; 24(6):268–75.

25. Ministerio de Salud y de la Protección Social. Prevención de Úlceras por Presión. Paquetes Instruccionales. Guía Técnica Buenas Prácticas para la Seguridad del Paciente en la Atención en Salud [Internet]. Bogotá: Minsalud; [cited 12 Dec 2017] 2015. Available from: https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/CA/prevenir-ulceras-por-presion.pdf

Original article

UNIVERSIDAD
DE ANTIOQUIA
1 8 0 3

Experiences Influencing upon the Significance of Obstetric Care in Mexican Nurses

Consuelo Martínez Villa[1]
Yesica Rangel Flores[2]

Experiences Influencing upon the Significance of Obstetric Care in Mexican Nurses

Objective. This work sought to learn which and how are the professional experiences that influence upon significance processes of obstetric care in nurses working in toco-surgery rooms. **Methods.** This was a qualitative study with grounded theory approach. Individual interviews were conducted with 16 nurses who work in two public hospitals in a border city in northern Mexico. Data analysis was performed according to that proposed by Strauss and Corbin. **Results.** Four categories were identified that explain the relationship established among the professional experiences and the significance processes of obstetric care; these are: *Dilution of borders and demand for interculturality, Modification in the scale of values associated to care, Institutional and public policy crises, and Violence endured within the work setting*. Obstetric care is signified within an imaginary that recognizes the existence of a globalized context, which requests problematizing the worldview not of the "other" but of "many others", and not merely from those receiving care, but also from other

---

[1] Nurse, Ph.D student. Professor, Universidad Autónoma de Chihuahua (México).
email: magdamarvi@hotmail.com

[2] Nurse, PhD. Professor, Universidad Autónoma de San Luis Potosí, San Luis Potosí (México).
email: yrangelmaestria@hotmail.com

Article linked to the research: Nurses, re-significance of care and their professional practice in caring for women during the delivery process.

Conflicts of interest: None.

Received: August 31st, 2017

Accepted: December 5th, 2017

How to cite this article: Martínez C, Rangel Y. Experiences Influencing upon the Significance of Obstetric Care in Mexican Nurses. Invest. Educ. Enferm. 2018; 36(1):e12.

DOI: 10.17533/udea.iee.v36n1e12

UNIVERSIDAD
DE ANTIOQUIA
1 8 0 3

Investigación y Educación en
Enfermería
–Nursing Research and Education–

Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

professionals who participate in institutional care. **Conclusion.** Significance processes analyzed show how the socio-historical situation and current policy require new attitudinal skills and knowledge for nursing to participate efficiently in obstetric care.

Descriptors: nursing; obstetrics; obstetric delivery; delivery rooms; experiences; qualitative research.

Experiencias que influyen en la significación del cuidado obstétrico en enfermeras mexicanas

Objetivo. Conocer cuáles y cómo son las experiencias profesionales que influyen en los procesos de significación del cuidado obstétrico en enfermeras que se desempeñan en salas de toco-cirugía. **Métodos.** Estudio cualitativo con enfoque en la teoría fundamentada. Se realizaron entrevistas individuales a 16 enfermeras quienes laboraban en dos hospitales públicos de una ciudad fronteriza en el norte de México. Se realizó el análisis de la información según lo propuesto por Strauss y Corbin. **Resultados.** Se identificaron cuatro categorías que explican la relación que se establece entre las experiencias profesionales y los procesos de significación del cuidado obstétrico, estas son: *Dilución de fronteras y exigencia de interculturalidad, Modificación en la escala de valores asociados al cuidado, Crisis institucional y de políticas públicas, y Violencia padecida dentro del espacio laboral*. El cuidado obstétrico es significado dentro de un imaginario que reconoce la existencia de un contexto globalizado que exige problematizar la cosmovisión ya no "del otro" sino de "muchos otros", y no sólo de quien recibe el cuidado sino también de otros profesionales que participan en la atención institucional. **Conclusión.** Los procesos de significación analizados muestran como la situación socio-histórica y la política actual exigen nuevas competencias actitudinales y de conocimiento para que enfermería participe de manera eficiente en el cuidado obstétrico.

Descriptores: enfermería; obstetricia, parto obstétrico; salas de parto; experiencias; investigación cualitativa.

Experiências que influem na significação do cuidado obstétrico em enfermeiras mexicanas

Objetivo. Conhecer quais e como são as experiências profissionais que influem nos processos de significação do cuidado obstétrico em enfermeiras que se desempenham em salas de toco-cirurgia. **Métodos.** Estudo qualitativo com enfoque na teoria fundamentada. Se realizaram entrevistas individuais a 16 enfermeiras que trabalham em dois hospitais públicos de uma cidade fronteiriça no norte de México. Se realizou a análise da informação segundo o proposto por Strauss e Corbin. **Resultados.** Se identificaram quatro categorias que explicam a relação que se estabelece entre as experiências profissionais e os processos de significação do cuidado obstétrico, estas são: *Diluição de fronteiras e exigência de inter-culturalidade, Modificação na escala de valores associados no cuidado, Crise institucional e de políticas públicas, e Violência padecida dentro do espaço laboral*. O cuidado obstétrico é significado dentro de um imaginário que reconhece a existência de um contexto globalizado, que exige problematizar a cosmovisão já não "do outro" senão de "muitos outros", e não só de quem recebe o cuidado senão também de outros profissionais que participam na atenção institucional. **Conclusão.** Os processos de significação analisados mostram como a situação sócio-histórica e a política atual, exigem novas competências atitudinais e de conhecimento para que a enfermagem participe de maneira eficiente no cuidado obstétrico.

Descritores: enfermagem; obstetrícia; nascimento; salas de parto; experiências; pesquisa qualitativa.

Introduction

Obstetric care has been conceptualized in different manners; one of the most accepted is that referring to it as a practical experience supported on a series of critical judgments necessary to provide humanized care to the mother-child binomial, whose final objective is for both to reintegrate the family nucleus under the best conditions of physical, psychological, and social health.(1) This care, like care in general, is a cultural and scientific practice that takes place in particular socio-historical contexts. Derived from the aforementioned, during the 21st century, obstetric care was dramatically reconfigured, becoming technological and associating invariably to higher maternal and perinatal survival. Modernization and technology also brought along socioeconomic changes that affected the transformation of society and generated direct impact on the professions, demanding the development of new skills and – even – a redefinition of the disciplinary roles.(2)

Within this context, obstetric care presented important transformations; from being a function recognized as appertaining to nurses and midwives, it passed on to being conceived as a branch associated to gynecology; from being a practice framed within principles of respect and mystique associated to being a woman, it passed on to being considered a pathological process and, in that sense, to being excessively medicalized. Stemming from this reconfiguration of obstetric care, the delivery wards are spaces to where attention has been recently drawn, indicating the existence of a social phenomenon called *obstetric violence*, a theoretical, conceptual, and legal construct that questions the pertinence of a series of health practices in violation of human, sexual, and reproductive rights, during the institutional care of pregnancies and deliveries.

Although a vast diversity of conceptualizations exists regarding what should be understood as "obstetric violence", for the purpose of this research, it is understood from the concept established by the Legislation on Access for Women for Life Free from Violence from the state of Chihuahua, Chih. Mexico:(3) "Any action or intentional omission by the health staff, which during the exercise of their profession or trade, harms, hurts or denigrates women during pregnancy, delivery. and puerperium, as well as negligence in their medical care and altering the natural process of low-risk delivery, through the use of acceleration techniques and practicing caesarean deliveries, when conditions exist for natural delivery, without obtaining voluntary, expressed, and informed consent from the woman". Social recognition of this type of violence, obligates reflecting on the sense of a series of practices that have been incorporated as part of the obstetric care provided by nursing in hospital institutions. Has modernity imposed violent actions against women during the implementation of care? Or has this always been so in reality, but there were no arguments to account for this? Which and how are the experiences that have influenced on the significance processes of obstetric care in nurses who currently work in toco-surgery rooms?

Although obstetric violence has been broadly documented, its approach has centered practically exclusively on the medical staff, associating abuse with the existence of a symbolic power exerted from the masculine toward the feminine, with sexist and androcentric profile.(4) Contrary to this, not many studies have addressed the role of nurses, even though some studies indicate that the nursing staff is identified with the greatest amount of abuse against users in the labor and delivery wards,(5) a situation that results contrary to the function of advocacy and defense of human rights that international organizations associate with nursing.(6) In that sense, the International Nurses Council establishes that it is their duty: "to actively preserve and promote the rights of all people, at all times and places … including the obligation of making sure that adequate care is provided, according to the resources available and in keeping with ethics … in cases in which nurses go into conflict between their duties and professional obligations with their employer or other authority, their primordial responsibility is with the people who need care".

The aim of this research was to learn which and how are the professional experiences that influence upon the significance processes of obstetric care in nurses who work in toco-surgery rooms. Said knowledge will permit identifying institutional and academic actions that can favor the significance of obstetric care closest to the humanism paradigm.

Methods

This was a qualitative study from grounded theory. The pertinence of conducting this study from the symbolic interactionism that supports grounded theory, stems from, for this school, that the significance things have for individuals is what determines action, which makes people respond one way or another against a specific phenomenon.(7). The study was conducted from November 2014 to November 2016, a period during which interviews were conducted with nurses who regularly work in toco-surgery rooms from two general hospitals in a border city in northern Mexico. The decision to carry out the research in these hospitals was made because these provide care to an open population, besides being supported by the Popular Insurance program, which makes them institutions with a high demand for delivery care, given that prenatal care and delivery have no cost.

The informants were 16 nurses selected through theoretical sampling,(8) understanding such as a data collection process to generate theory and which implied, on the one hand, inviting to participate nurses who were considered due to their experiences that they would contribute significantly to understanding the phenomenon of interest, while on the other hand obligating the researchers to select, encode, and analyze through constant comparison of the findings with the theory, to find sense of that communicated. The number of informants was defined in function of the criterion of theoretical saturation,(9) that is, information collection was stopped once no new data emerged, and when the relations among the categories were well established and validated to achieve understanding the internal logic. In all cases, enough information was produced during a single approach.

The interviews were held individually and carried out by the first author, who is a nurse and PhD candidate in Nursing Sciences. To conduct the interviews and perform their analysis, the interviewer was trained during 120 h on theoretical, methodological frameworks and techniques on qualitative research. A semi-structured guide was developed prior to conducting the interviews. As the interviews were administered, the guide was improved to explore the categories identified in the constant comparison process during analysis.

The participants were contacted initially within the toco-surgery services, where a first appointment was agreed on to explain thoroughly the nature of the study and collect the informed consent. All the meetings to hold the interviews were carried out in the homes of the informants or in the university library. During the research, the consistency value was sought through systematic comparison between the results and the theoretical frameworks identified as pertinent to interpret the findings; this theoretical construction process enabled the creation and consolidation of each of the categories developed.(10) The interviews were transcribed fully and upon completing the analysis these were eliminated to guarantee protection and confidentiality of the information provided.

The analysis was performed as proposed by Strauss and Corbin;(9) through participation from two researchers, open, axial, and selective coding was applied to the data. In the open coding, the interviews were revised several times and the data reduced to codes. The categories were obtained in traditional manner from the codes and notes on the conceptual and theoretical ideas that emerged during the course of the analysis. Through axial coding, the data were fractioned into new ways of making connections between categories and subcategories. Finally, selective coding identified a central category and its interrelations. During analysis, the note technique was used to propose the hypothesis of connections among categories and their properties to integrate these connections into other categories to generate the theory.(11)

The ethical principles contained in the Helsinki declaration and the General Health Legislation in México were considered to conduct this study, which was classified as "minimum risk" given that no techniques and methods were employed that would intentionally modify the physiological, psychological, and social variables of those participating. Their right to autonomy was respected at all times, written informed consent was requested, and identity confidentiality was guaranteed. The project was revised, approved, and supervised by the Ethics Committee of the Secretary of Health from a border city in northern Mexico (Reg. 000176).

Results

During the open coding stage, 698 codes emerged *in vivo* that after several re-readings were combined to arrive at the axial coding, where 17 subcategories emerged. In the selective encoding, similar codes or those with similar meanings and concepts were catalogued into four categories to proceed to the analysis. The categories presented ahead include narrations considered nutritious to enhance the categories developed.

Category 1: Dilution of borders and demand for interculturality

In Mexico, as in many Latin American countries, health, education, and employment services have centered in urban regions; likewise, health communication on issues of health prevention and promotion continues being conducted in Spanish, with little regard for the existence of Indigenous languages. The aforementioned implies for nurses an important challenge when providing care: *It is different when you have to care for the Tarahumara [women]; some will understand you and others will not, they hardly answer you and, well, you almost do not speak with them because that is how they are* (Nurse 11). The informants recognize that language and world vision differences place women at a disadvantage for care. The limitation lies on the fact that they cannot be understood, do not have the institutional resources to do so, or rather, the language and ethnic diversity is too broad to be addressed with the scarce resources in the institutions: *It is difficult and no way of talking to a translator; I think it's like seven different languages and they do not understand themselves, so with lots of work and you must deal with this* (Nurse 3). The high demand for care in populations from different ethnicities becomes a challenge for which the informants report not being prepared, given that they have not been trained for such and do not access refresher courses in interculturality: *Well, it is a bit more difficult because some do understand you and others do not; you do what you can, but nobody told us how …you have to guess …we do not know how* (Nurse 15).

Category 2: Modification in the scale of values associated to care

For nurses it is a complete challenge to live and work with professionals who, due to issues associated to generational evolution, apply and prioritize differently values associated to care. This difference regarding the prioritizing of values when providing care is associated to their training and to the care, as well as to the profile of the academic programs in which they have been prepared as human resources for health. In this sense, the informants underscore that the medical staff is trained from a biological, mechanized, highly technical, and not very reflexive approach from the paradigm of ethics and human rights: *There are many new people [interns and residents] that yes, are very biological, and not us, we see the sensations patients have … they tell the patient everything in medical terminology and make bad expressions, and I don't agree with that; I also don't agree with questioning the patient without the privacy they deserve, they do so in front of many people and even raise their voices* (Nurse 1).

Additionally, nurses attribute this lack of values necessary to provide obstetric care, associated to the social dynamics that prevail in the contexts in which the new generations of professionals work; which produces problematic discourses as in modern youth (denominated by sociology as millennials), a series of values associated to care are prioritized differently from how it had historically been done: *They [physicians and nurses in training] need to be aware that they have a commitment with society, the discipline and the objective of reestablishing the women's health. These generations have more disposition to social interaction, dancing, and parties and that takes away from their performance; they don't have enough rest, don't have enough studies, nor the initiative or disposition, or sufficient knowledge* (Nurse 5). Additionally, they point to the institutions that train human resources as co-responsible of this crisis of values, and indicate that it is necessary to readjust the programs to enhance the skills of the new generations for humane care: *Additionally, we must start at the schools; we must impact upon the youth because I sometimes see them lost regarding what caring for another is. There is not much love for what is done… it would be combining former training adjusting it to the new; I know times change, but care never changes, because we do not stop being people and train more students who advocate for those without a voice, who make themselves heard, who have autonomy and are not intimidated* (Nurse 10).

Category 3: Institutional and public policy crises

The informants refer to the lack of conditions of infrastructure, inputs and human resources to carry out public policies that aim for the humanization of delivery care: *Because more personnel is needed, it is stressful to not have supplies to work with and you complain; and you don't give quality to your work because something gets out of control and you are always running and nobody outside knows what is happening inside, and you are running and getting things. Look, you will say these are different things, but as a whole it affects how women are cared for* (Nurse 13). They reiterate in their narrations that federal and state policies do not agree with the needs of the public institutions where they work, the most mentioned was the policy on "*Zero Rejection*", which has to do with the obligation all public and private health institutions have on guaranteeing emergency care to pregnant women or women in labor, independent of their having or not having social security. Policies, like the aforementioned, represent – according to the informants – the pressure that, even with said units being saturated, they must continue caring for women without spaces, inputs, and resources to do so: *Because we cannot reject, we as an institution and the universalization of care to obstetric patients, given that we cannot reject no one, even if you have no beds or capacity, inputs, clothing, or anything* (Nurse 1).

Another policy that emerges as a challenge from the nurses' narrations has to do with the "*Federal strategy to strengthen post-obstetric event anticonception (APEO, for the term in Spanish)*", which demands complying with specific goals in terms of coverage of Family Planning Methods (FPM) upon discharge of the patient hospitalized due to obstetric event. This demand has obligated them to establish a type of imposition for FPM use, which they themselves identify as an attack from the framework of sexual and reproductive rights: and *the woman would say, I don't want! So... [Mentions the nurse with emphasis] Your patient must exit with a device! What do the girls do [nurses]? They start to pressure, but pressure steadily and they are not aware of the patient's culture!* (Nurse 2). In this sense, they manifest that even when they confront highly complex phenomena in their daily work, they continue focusing care on the physiological needs of the moment, omitting psycho-emotional and social needs highlighted by the clinical practice standards or guides.

The informants report that the care they provide in the institution becomes more complicated, within the framework of the Mexican health system that lacks a preventive approach and is weak in the first level of care, which has repercussions on the fact that women arriving at the institutions have a high incidence of complications and – worse – have no idea of how to participate in their deliveries: and *this should come from the prenatal consultation [psycho-prophylaxis], this should already have been asked and explained; it is a preparation, she [the woman in delivery] should already know the information, she should leave there [first level of care] informed because she did not go there [health center] once or twice, at least for the popular insurance to cover the delivery, there should five consultations* (Nurse 1).

Category 4: Violence endured within the work setting

Demystifying the image of nursing as exclusively involved with the physician's care practice has turned out to be a great challenge, according to that stated by the nurses. Although this image is being renewed, there is still a lack of openness by the medical staff to respect the professional proposals from nursing when providing care: *The interns and physicians sometimes do not want, that is, do not accept a proposal from us, I don't know, could it be because we are nurses? And they tell you, right in front of the people, so that everyone is aware that they know and we do not* (Nurse 5). The nurse-physician work relation is affected by hostile behaviors, which are manifested by intimidating and threatening actions and this, according to the informants, complicates care extremely and generates in them professional frustration: *When we are not on the same line [physician-nurse], situations arise when you remain quiet to avoid problems, but you know it is not okay, you get frustrated from seeing actions that have nothing to do with care and you have to stay quiet* (Nurse 4).

The fact that the nurses themselves experience violence and do not speak of it, report, or communicate such to their supervisors, permits accounting for the complexity in which is circumscribed their function in defense of the rights of patients. It is impossible for nurses who are not empowered to report their own experiences, denounce or advocate for the rights of the users to live their delivery processes free from actions that attempt against their rights: *The doctor treated me as he wished; that [being mistreated] affects me as a person and not only as a nurse, it frustrates me, gets me angry, stresses me, so it makes me feel like this [makes facial expression of displeasure] to care and perform my work* (Nurse 5).

Furthermore, the informants reported feeling violated when the physician boasts superiority over them; hence, they see themselves not only as witnesses to the violence, but also as victims, which affects them as persons and professionals, and is reflected on how they provide care to the women and on the relationships they keep with their colleagues: *Well, the doctors' tempers; if you say something, they scream at you in front of the patient and it is no longer the same, or some colleague having differences with you and you both get upset, it does affect, it affects because now you don't smile and you think they don't realize it* (Nurse 9).

Discussion

The objective of this research was to learn which and how are the professional experiences that influence upon processes of significance of obstetric care in nurses who work in toco-surgery rooms. The results evidence that obstetric care is signified through a series of experiences that take place within contexts which conjugate in complex manner the reality of globalization and migration, the modification in the scale of values of current society, institutional and public policies crises, and – finally – but not least important, the trend to increased violence and its recognition within institutional settings.

Nurses currently confront demands for intercultural care that they only confronted in the rural health units. This tendency to the complexity of care from migration and globalization has also been indicated by other researchers who contemplate in it a challenge for the discipline and for society.(12) The trend to increased population mobility demands development of interculturality skills in the nursing staff, given that it is necessary to recognize and respect the different cosmogonies to understand in their complex dimension the health-disease processes; without achieving this, it is impossible to speak of genuine interactions between professionals and users.(13) The aforementioned needs to be problematized in a Mexico in which most of the curricular plans for the formation of human resources in health lack assignments that prepare future professionals in interculturality skills.(14) Thereby, interculturality results in a desirable skill no merely from the ethical-legal framework, but also from the responsibility nursing has in promoting health and communicating risk. Other researchers have documented that the health staff tends to speculate on the motivations people have to position themselves one way or another with respect to health-disease processes, establishing value judgments supported on a series of social stereotypes and are not very concerned with understanding them from an intercultural paradigm.(15) The prior situation currently represents one of the most important communication barriers for the health staff and the user population.(16)

Nurses also identify that obstetric care becomes complex in function of the existence of two social generations that share space within the toco-surgery rooms, but which provide care from very different parameters of prioritizing values associated to care. Generational changes seem to impact upon the meaning of care and not only upon that, but – in general – on the operation of organizations. Currently, Mexico faces significant changes with respect to pension and retirement policies, which has brought along that within health services professionals coexist from social generations with different perspectives on what care is and on the values upon which it must be framed. The aforementioned complicates intergenerational coexistence processes within organizations, and with it, impacts on the dynamic in which obstetric care is practiced within the maternity wards.(17)

For older nurses, the problem of inadequate care in obstetrics wards is related to personality characteristics in the current generation (millennials), which has been associated to the search for continuous satisfaction of the "ego", leaving aside contact with others and which hinders their establishing relationships of commitment with those they are in charge of, given that they relate best with technology and/or through it.(18) In turn, younger nurses report feeling frustrated upon the demand to insert themselves and adapt to professional contexts in which an institutional medical culture prevails that privileges the biomedical approach to care, after recognizing that they were educated within a nurse culture, which is less biologist and more holistic.(19)

Obstetric care was identified also associated in its meaning with the existence of a series of public policies that in discourse tend toward the humanization of the delivery, but which are implemented within contexts that in crisis do not have the necessary element to carry them out. In this sense, public policy not only creates false expectations among users, but also frustration among those who provide care, given that they do not have the necessary resources to offer that which users expect and which the State "demands", the quotations are added, given that the very State recognizes that what is proposed in public policy has no conditions to be exercised.(20) Finally, the findings herein support the evidence from other studies, which have indicated the prevalence of violent contexts in delivery wards,(21,22) however, requiring – unlike these studies – this work views that violence is not aimed specifically upon the users, but it is also aimed at the nurses, from both the medical staff and among colleagues.

The conclusion in this study is that the meaning upon which nursing care is based within the maternity wards is dynamic and is readjusted according to what has been evidenced in this study in function of the economic, social, political, and cultural changes that prevail in each context in particular. Nurses identified as the principal experiences contributing to the re-significance of nursing care, globalization and the dilution of borders, restructuring in prioritizing personal and professional values, institutional and public policy crises, and – lastly – although not least important, the violent context experienced within the very institutions, not only against the population of users, but against the nurses themselves or their colleagues. States and their institutions – particularly health institutions and those in charge of training human resources in health – must consider that to fully comply with the expectation of avoiding incidences related to the violation of rights in maternity wards. Although it is necessary to train and sensitize the staff with respect to the theme, it is also mandatory to seek harmonious institutional environments that enable full personal and professional development; only under these conditions will it be feasible to speak of hospital environments free from violence.

References

1. Bernal ML, Sánchez LE. Significado del cuidado obstétrico desde el cotidiano del estudiante de enfermería. Enferm. Univ. 2014; 11(3):81-6.
2. Germán CB, Hueso NF, Huercanos EI. El cuidado en peligro de la sociedad global. Enferm. Glob. 2011 jul 12; 10(23):221-32.
3. Ley Estatal del derecho de las mujeres a una vida libre de violencia del Estado de Chihuahua [Intenet]. Periódico Oficial del Estado 2014 ene 24 [cited Dec 22, 2016]. Available from: www.ordenjuridico.gob.mx/Documentos/Estatal/Chihuahua/wo22549.doc
4. Castro R. Génesis y práctica del habitus médico autoritario en México. Rev. Mex. Sociol. 2014; 76(2):167-97.
5. Valdez R, Hidalgo E, Mojarro M, Arenas LM. Nueva evidencia a un viejo problema: el abuso de las mujeres en las salas de parto. Rev. CONAMED. 2013; 18(1):14-20.
6. Consejo Internacional de Enfermeras. Código deontológico del CIE para la profesión de enfermería [Internet]. 2005 [cited Jun 20, 2017] Available from: http://www.gestiondeenfermeria.com/acerca-de/codigo-deontologico/cod-cie/#sthash.wOHoEVQg.dpbs
7. Wuest J, Merrit M. Feminist Grounded Theory, revisited: Practical Issues and new Understandings. In: Schreiber RS, Phillis NS, editors. Using Grounded Theory in nursing. New York: Springer; 2001. P. 159-76
8. Glasser BG, Strauss AL. The discovery of grounded theory: strategies for qualitative research. 7th ed. New Jersey: New Jersey; 2012.
9. Strauss A, Corbin J. Bases de la investigación cualitativa, técnicas y procedimientos para desarrollar la teoría fundamentada. Bogotá: Editorial Universidad de Antioquia; 2002.
10. Hernández RM. La investigación cualitativa a través de entrevistas: su análisis mediante la teoría fundamentada Cuestiones Pedagógicas. 2014; 23(11):187-210.
11. De la Cuesta C. Decisiones y elecciones: El diseño de la investigación cualitativa. Cult. Cuid. 2015; 19(43):9-11.
12. Checa JC, Arjona A. Los imigrantes vistos por los españoles: entre la amenaza y la competencia (1997-2007). Rev. Estud. Soc. 2013; 47:118-32.
13. Menéndez LE. Aproximación crítica al desarrollo de la antropología médica en América Latina. Rev. Nueva Antropol.1985; 7(28):11-2.

14. Rifá R, Costa L, Espinosa C. Influencia de la formacion y competencia cultural sobre la actitud frente a la imigracion de los estudiantes de tercero de enfermeria. Rev. Fundacion Educ. Med. 2013;16: 105-10.
15. Vargas SG, Berúmen LVB, Arias I, Mejía YM, Realivázquez LP, Portillo RS. Determinantes sociales de la atencion comunitaria: percepciones de la enfermera e indigena raramurí. Cult. Cient. Tecnol. 2015; 12(57):310-8.
16. Castrillón E. La enfermera transcultural y el desarrollo de la competencia cultural. Cult. Cuid. 2015; 19(42):128-36.
17. Martino FMG. The information and communication technologies and the psychological well-being in the Net generation. Hamut'ay. 2014; 1(1):39-51.
18. Bongiovanni NC, Soler CE. Caracteristicas y expectativas laborales de la generación Y. Rev. ADENAG. 2016; 6:15-21.
19. Moya JLM, Backes VMS, Prado ML, Sandin MP. La enfermería como grupo oprimido: las voces de las protagonistas. Texto Contexto-Enferm. 2010; 19(4):609-17.
20. Egaña R. La construcción de políticas públicas en tiempos de crisis. Rev. CLAD Reforma y democracia [Internet]. 2011; 49 [cited Nov 5, 2017]. Available from: http://old.clad.org/portal/publicaciones-del-clad/revista-clad-reforma-democracia/articulos/049-febrero-2011/Egana.pdf
21. Castellón AMD. Occupational violence in nursing: explanations and coping strategies. Rev. Latino-Am. Enfermagem. 2011; 19(1): 156-63.
22. Moreno LM, Quezada H, Guevara ES, Ibarra N, Martínez NL, Pedraza R. Las relaciones de género y el maltrato en las escuelas de medicina: una agenda pendiente en México y el mundo. Gac. Med Mex. 2016;152:812-8.
23. Moreno LM, Quezada H, Guevara ES, Ibarra N, Martínez NL, Pedraza R. Las relaciones de género y el maltrato en las escuelas de medicina: una agenda pendiente en México y el mundo. Gac. Med Mex. 2016;152:812-8.

Effects of a peer- led group education on fear, anxiety and depression levels of patients undergoing coronary angiography

Zahra Molazem[1]
Zahra Shahabfard[2]
Alireza Askari[3]
Majid Najafi Kalyani[4]

Original article

Effects of a peer- led group education on fear, anxiety and depression levels of patients undergoing coronary angiography

Objective. To investigate the effect of the peer group education on the fear, anxiety and depression levels of the patients undergoing angiography. **Methods.** In this clinical trial, 70 patients referred to Vali-E-Asr clinic of Fasa (Iran) for undergoing coronary angiography were selected by random sampling and divided into experimental and control groups. The experimental group (*n*=35) received the necessary instructions about coronary angiography by those in a trained peer group (Two former patients, having experienced in the procedure), while in the control group (*n*=35) the routine instructions were presented by the department's nurses. The levels of fear, anxiety and depression of the patients were measured both before and after conducting this intervention. **Results.** The mean score of the patients' fear and anxiety after the intervention of the peers in the experimental group was reduced compared to that of the control group ($p<0.05$). But

1 Nurse, Ph.D. Associate Professor, Community Based Nursing and Midwifery Research Center, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.
email: molazem@sums.ac.ir

2 Nurse, M.Sc. Researcher, Student Research Committee, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.
email: shahabfard59@gmail.com

3 Physician, M.D. Assistant Professor, Faculty of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran.
email: aaskari60@yahoo.com

4 Nurse, Ph.D. Assistant Professor, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.
email: majidnajafi5@yahoo.com.

Corresponding author.

Received: August 31st, 2017.
Accepted: February 9th, 2018.
How to cite this article: Molazem Z, Shahabfard Z, Askari A, Kalyani MN. : Effects of a peer-led group education on fear, anxiety and depression levels of patients undergoing coronary angiography. Invest. Educ. Enferm. 2018; 36(1):e13.
DOI: 10.17533/udea.iee.v36n1e13

Investigación y Educación en
Enfermería
–Nursing Research and Education–
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

for the mean of the score of the depression test, no statistically significant differences were found between the two groups after the intervention. **Conclusion**. The results of this study showed that utilizing the peer group education is effective for reducing the fear and anxiety of patients undergoing coronary angiography.

Descriptors: coronary angiography; control groups; peer group; anxiety; depression; fear.

Efectos de la educación grupal realizada por pares sobre los niveles de miedo, ansiedad y depresión de los pacientes sometidos a angiografía coronaria

Objetivo. Investigar el efecto de la educación grupal realizada por pares sobre los niveles de miedo, ansiedad y depresión de los pacientes sometidos a angiografía. **Métodos.** En este ensayo clínico, 70 pacientes remitidos a la clínica Vali-E-Asr de Fasa (Irán) para someterse a una angiografía coronaria se seleccionaron por muestreo aleatorio y divididos en dos grupos. El grupo experimental (n=35) recibió las instrucciones sobre la angiografía coronaria por parte de pares (dos pacientes que habían sido sometidos previamente a angiografía), mientras que al grupo de control (n=35) las enfermeras del departamento les brindaron la instrucción de rutina. Los niveles de miedo, ansiedad y depresión de los pacientes se midieron antes y después de realizar esta intervención. **Resultados.** La puntuación media del miedo y la ansiedad de los pacientes después de la educación grupal efectuada por los pares en el grupo experimental fue menor en comparación con la del grupo control ($p<0.05$), pero para la media del puntaje de la prueba de depresión no se encontraron diferencias estadísticamente significativas entre los dos grupos. Conclusión. Los resultados de este estudio mostraron que la utilización de los pares para la educación grupal de los pacientes que serán sometidos a angiografía coronaria es efectiva para reducir el miedo y la ansiedad.

Descriptores: angiografía coronaria; grupos control; grupo paritario; ansiedad; depresión; miedo.

Efeitos da educação grupal realizada por pares sobre os níveis de medo, ansiedade e depressão dos pacientes submetidos a angiografia coronária

Objetivo. Investigar o efeito da educação grupal realizada por pares sobre os níveis de medo, ansiedade e depressão dos pacientes submetidos a angiografia. **Métodos.** Neste ensaio clínico, 70 pacientes remitidos à clínica Vali-E-Asr de Fasa (Irão) para submeter-se a uma angiografia coronária foram selecionados por amostragem aleatório e divididos em dois grupos. O grupo experimental (n=35) recebeu as instruções sobre a angiografia coronária por parte de pares (dois pacientes que haviam sido submetidos previamente a angiografia), enquanto que ao grupo de controle (n=35) as enfermeiras do departamento lhes brindaram a instrução de rotina. Os níveis de medo, ansiedade e depressão dos pacientes se mediram antes e depois de realizar esta intervenção. **Resultados.** A pontuação média do medo e a ansiedade dos pacientes depois da educação grupal efetuada pelos pares no grupo experimental foi menor em comparação com a do grupo de controle (p<0.05), mas para a média da pontuação da prova de depressão, não se encontraram diferenças estatisticamente significativas entre os dois grupos. **Conclusão.** Os resultados deste estudo mostraram que a utilização dos pares para a educação grupal dos pacientes que serão submetidos a angiografia coronária é efetiva para reduzir o medo e a ansiedade.

Descritores: angiografia coronária; grupos controle; grupo asociado; ansiedade; depressão; medo.

Introduction

The cardiovascular diseases are a wide range of disorders, among which the coronary artery disease is the most common cause of death.(1) The spread of cardiovascular diseases, especially the coronary artery disease, is growing strongly, and they account for 40 percent of deaths in the Middle East.(2) According to the World Health Organization's report, the leading cause of death in our country is related to the cardiovascular diseases, which accounts for over 45% of all deaths caused by the coronary artery disease.(3) Many invasive and non-invasive methods are being used to determine the severity and extent of coronary artery blockage, among which the coronary angiography is considered to be the golden standard for diagnosis. In the United States of America, annually, about two million cardiac patients undergo coronary angiography, and due to the credibility and the accuracy of this diagnosis method, its use is increasing.(4,5) Using the angiography technique to detect coronary artery disease has increased in the Western countries, and it is 7 times higher than ten years ago.(6) Also in Iran, the majority of treatment centers utilize the same techniques to diagnose the coronary artery disease.(7)

Despite the important role of coronary angiography in the diagnosis of the coronary artery disease, this method causes physical and psychological problems such as fear and anxiety for the patients so that it affects the admission and selection of this diagnostic test significantly.(1,4) Before and during angiography, many patients experience fear and anxiety so that for some, chest pain, nausea, sweating and for some other mouth drying occur.(1) In a study carried out by Gallagher et al, many of patients experienced moderate anxiety before the coronary angiography.(8) The researches indicate that the lack of awareness and unfamiliarity with diagnostic procedures are the greatest causes for fear and anxiety in patients before the procedure, and they affect the satisfaction level and intensity of fear and anxiety in the patients.(1,8)

Various methods are being used to reduce the patients' psychological problems before invasive procedures, being divided into two medicinal and none-medicinal groups.(1,4,7) One of the appropriate non-medicinal methods for reducing the psychological problems of patients before the surgery is to provide the patient with training and adequate information about the disease, how to control it and pursue the treatment plan, through the informed people who are involved with the disease and are known as the peer group.(9) Training through peer people is a method including the exchange of information, attitude and behavior by those who have not specialized in the topic but have had similar experiences themselves. Since they can share their weaknesses, strengths and experiences at the lowest cost, the peer group's members can establish a better relationship with their peers (patients), and help and encourage them to show better behaviors.(10) The review of the literature suggests that training through peers is a cost-effective way to educate patients in different occasions.(10,11)

Having in mind the shortage of nurses, and the review of the literature that clearly indicates the absence of studies on the impact of the utilizing peer group on the fear, anxiety and depression levels of angiography patients, And also the invasive nature of coronary angiography and the little time of hospitalization, neglecting to instruct the patients, and no study having been done about the peer education approach, further studies to control the fear, anxiety and depression in patients using a non-medicinal and easy way seem to be necessary. The current study aimed at investigating the effects of utilizing the peer group on fear, anxiety and depression levels in patients undergoing coronary angiography.

Methods

This study is a clinical trial conducted between October 2015-April 2016 on volunteer patients referred to Fasa city's Vali-E-Asr Hospital (Iran) for coronary angiography. Using the previous studies,(1) the sample size was determined with a safety coefficient of 95% and a test power of 80% for every 28-patient groups, and considering the probable loss, 35 participants in each group was considered. The examination samples were selected through random sampling and according to the acceptance criteria, including the absence of angiography history for the patient, an age range of 30 and 70 years, no history of using psychoactive drugs, and no detection of mental disorders such as depression, anxiety and physical and cognitive disorders. After the selection of eligible samples, the patients were randomly divided into two experimental and control groups. After explaining the purpose and the method of study to the patients, the researcher obtained written consent.

Before the procedure, the patients filled out a questionnaire about demographic variables and information to determine the levels of fear, anxiety and depression. Then, in addition to routine oral instructions about the coronary angiography, the patients received trainings through the peer group. In order to select the peer group, the list of the patients who had undergone angiography during the recent months was taken from the hospital and examined. Then, some peers with the following conditions were selected: willingness to voluntarily participate in the research; education level of at least Diploma; at least three months after their angiography; having appropriate knowledge; powerful communications; Being interested in training, and being trainable and willing to be trained. Two former patients, having experienced angiography, came to the hospital in the morning of the angiography procedure as the peer group, and provided and exchanged information with patients undergoing angiography in a quiet place, and answered their questions. The training was conducted as presentations, questions and answers and group discussions, being controlled by the researcher. The training was carried out in groups. Thus, each peer was instructing a group of patients while the second group was instructed by the other peer. The trainings were presented through a single session lasting 30 to 45 minutes and about 3 hours before the angiography. The peer group's educational package for the angiography included the pre-angiography preparations, during-angiography and post-angiography cares as well as instructions for after discharge from the hospital. The patients in the control group received the hospital's routine verbal instructions presented by the nurses. These instructions included the entering place of the catheter and how the entrance was going to be made, and the need to be fasting for 8 hours prior to angiography, and to stop using anticoagulant drugs. After the instructions of the peer group and before the patient entered the angiography room, another questionnaire, for measuring fear, anxiety and depression, was filled out by the researcher about the patients.

The data for this study were collected through three questionnaires including: 1- the individual characteristics questionnaire, 2- the patient's angiography fear scale, and 3- the hospitalization anxiety and depression scale (HADS). The visual analog scale was used to assess the patient's fear. This scale consists of 20 expressions, marked from zero to ten by the patient. Zero represents the least amount of fear and the score representing the greatest fear is ten. This scale was designed by

Heikkila *et al.*(12) In order to measure the content validity, the scale was given to 10 expert professors and after obtaining their opinions and content approval, the final version of the scale was used. In order to assess the reliability of the scale, it was firstly performed on 10 angiography patients and according to the Cronbach's alpha, an Interclass correlation coefficient of 0.88 was computed for the scale. Additionally, the reliability of the scale was also evaluated using the parallel method, and in the simultaneous use of the scale with the hospital anxiety and depression questionnaire, a correlation of 0.94 was obtained. The hospitalization anxiety and depression HADS questionnaire has fourteen questions about the two anxiety and depression scales. Of all the questions, seven are related to the levels of anxiety and the other seven are about the depression level. The research of Kaviani et al.(13) also verifies the validity of the questionnaire with the Alpha of 70 percent in the sub-scale of depression, the Alpha of 85 percent in sub-scale of anxiety, and the reliability obtained by the retesting method (r=0.77, p<0.001) in the sub-scale of depression and also in anxiety sub-scale (r=0.81, p<0.001). The obtained data were analyzed through SPSS vr.19 software, using descriptive statistics, Chi2 test and both the independent and paired t-tests. An alpha level of 0.05 was considered as the significance level.

Results

The mean age of the patients being analyzed in the experimental and control groups was 53.3±10.6 and 52.1±9.7 years old, respectively (p>0.05). The duration of heart disease in the experimental and control groups was, respectively, 19.2±11.1 and 16.1±7.4 (p>0.05). Comparison of the two groups in terms of other demographic variables showed that there was no significant difference between the experimental and control groups. The results of this comparison are presented in Table 1.

Table 2 shows the mean scores of fear, anxiety and depression in both experimental and control groups before and after the intervention. The results of the independent t-test between the two groups showed that no statistically significant difference was reported for the scores of fear, anxiety and depression before the intervention. After the intervention, a statistically significant difference was found between the fear and anxiety scores for the two groups, but no statistically significant difference was observed in the depression score of the two groups after the intervention.

Discussion

Despite its numerous benefits for patients, coronary angiography is also an invasive technique that brings about a lot of physical and psychological problems due to its aggressive nature.(1) According to the effects of psychological problems such as fear and anxiety on the status of cardiac patients, taking any measures to reduce fear and anxiety in these patients is very important.(14) The results of this study revealed reduced amounts of fear in the experimental group compared with the control group after educational intervention by peers. This findings comply with the results of the studies conducted by Dehghani *et al.*(15), Nematian Jolodar et al.(11) and Lianne *et al.*,(16) indicating that training the patients before the procedure helps to minimize their psychological problems. Also, Jamshidi *et al.* found in their study that educational programs play an important role in reducing psychological problems of patients undergoing coronary angiography.(1)

It seems that part of the anxiety in heart patients is due to the lack of information about the disease. Thus, appropriate training, reduction of psychological problems, increase in the patient's participation, and their adherence to medical prescriptions can also provide some information that can lead to the decrease of the patients' anxiety about the disease.(1) The other results of this study was a decrease in the level of anxiety in the experimental group compared to the control group after the educational intervention by the peers, which complies with the results of the researches performed by Varaee *et al.*(17), Chan *et al.*(18) and Doğan *et al.*,(19) emphasizing the fact that the use of peer group education and patient-centered educational interventions can cause a decrease in the patients' anxiety.

Table 1. General characteristics by groups

Variables	Control group		Experimental group		*p*-value
	Number	Percentage	Number	Percentage	
Gender					**0.314**
Male	21	60	25	71.4	
Female	14	40	10	28.6	
Marital status					**0.665**
Married	27	77.1	24	68.6	
Single	1	2.9	2	5.7	
Widow	7	20.0	8	22.9	
Divorced	0	00.0	1	2.9	
Occupation					**0.127**
Free	7	20.0	7	20.0	
Employee	5	14.3	10	28.6	
Worker	3	8.6	2	5.7	
Retired	4	11.4	9	25.7	
House keeper	13	37.1	7	20	
Farmer	3	8.6	0	0	
Education					**0.119**
Illiterate	5	14.3	0	0	
Preliminary	10	28.6	12	34.3	
Junior School	13	37.1	12	34.3	
High School diploma	3	8.6	2	5.7	
Graduated	4	11.4	9	25.7	
Smoking History					**0.231**
Yes	16	45.7	21	60	
No	19	54.3	14	40	

Table 2. Comparison of the mean scores of fear, anxiety and depression in the experimental and control groups before and after the intervention

Variables	Group		*p*-value
	Experimental Mean±SD	Control Mean±SD	
Fear			
Before	6.3±0.7	6.1±0.5	0.21
After	4.4±1.1	6.7±0.6	<0.001
Anxiety			
Before	12.3±1.2	12.1±1.0	0.33
After	8.9±2.3	14.3±1.2	<0.001
Depression			
Before	5.4±1.2	5.4±1.2	0.93
After	5.3±1.2	5.3±1.5	0.92

The studies showed that providing the patients with angiography-related instructions through the health staff would reduce the anxiety caused by invasive procedures.(1,8,14,18,19) The researches done by Thomas et al.(20) and Jong et al.(21) indicated that the educational interventions using guided images through a CD won't be effective in reducing the anxiety of patients; this is not in the same line with the results of the current study, and this inconsistency may be related to the anxiety measuring and training methods and the demographic differences among the samples. The results of the present research indicated that the mean depression score after the educational intervention by peers in the experimental group and the control group represent no statistically significant difference. The results presented by Krannich *et al.*(22) showed that no difference exists in the level of depression before and after surgery. Behrozian et al.(23) showed in their study that the coronary artery graft surgery makes no significant effect on the growth of the depression process.

In the study of Khatibi *et al.*,(24), the patients were in a state of mild depression before and after the surgery; however, their depression scores increased after the surgery. The results of the current study showed that the use of peer group reduced the level of fear and anxiety in the experimental group compared to the control group, which reveals the effect of educational intervention through the peer group. The research results of Nematian Jelodar(11), Dehghan et al.(15) and Varaee *et al.*(17) are consistent with those of this study.

Moreover, Kumakech et al.(25) showed in their research that the supportive intervention of the peer group reduced the social psychosocial distress, and especially the symptoms of depression, stress, anxiety and anger reduced in the experimental group after the intervention, while the mentioned symptoms did not change for the control group before and after the intervention. This study also suggests the use of peer group on mental and physical symptoms of other patients. The use of self-report questionnaires to measure the patients' fear, anxiety and depression offers less accuracy compared with the hemodynamic and experimental measuring instruments.

Conclusion. The results obtained from this study showed that instructing patients undergoing coronary angiography through peer-centered instructions leads to a decrease in the amount of fear, anxiety and depression of patients, compared with the routine verbal instructions performed before an invasive procedure. Since high levels of fear, anxiety and depression are dangerous for the patients, and especially those with cardiac diseases, the use of this inexpensive and easy method as part of the nursing care can reduce these symptoms and the length of the patient's hospitalization time. The peer-based instructions are closer to reality, and lead to its better acceptance by patients and raising their awareness. The results of this study show that education through peer group is a much more effective and useful way to reduce the psychological symptoms of the patients, compared with the routine oral instructions.

Acknowledgments. The present article is a part of the thesis of Mrs. Zahra Shahabfard for the master's degree in nursing field. We thank the research deputy of Shiraz University of Medical Sciences for the financial supports. The researcher would also like to show her respect and gratitude to all the patients and their families, and all the staff and authorities of the Vali-E-Asr Hospital of Fasa city, who sincerely helped us to do this research. The authors would like to thank Shiraz University of Medical Sciences, the Center for Development of Clinical Research of Nemazee Hospital and Dr. Nasrin Shokrpour for editorial assistance.

References

1. Jamshidi N, Abbaszadeh A, Kalyani MN. Effects of video information on anxiety, stress and depression of patients undergoing coronary angiography. Pak. J. Med. Sci. 2009; 25(6):901-5.
2. Loscalzo J. Harrison's cardiovascular medicine: McGraw-Hill Medical; 2010.
3. World Health Organization. Non communicable Diseases Country Profiles, 2011 [Internet]. 2012 [cited 2 Feb 2018] Available at: http://apps.who.int/iris/bitstream/10665/44704/1/9789241502283_eng.pdf
4. Jamshidi N, Abbaszadeh A, Kalyani MN, Sharif F. Effectiveness of video information on coronary angiography patients' outcomes. Collegian. 2013; 20:153-9.
5. Rezaei-Adaryani M, Ahmadi F, Asghari-Jafarabadi M. The effect of changing position and early ambulation after cardiac catheterization on patients' outcomes: a single-blind randomized controlled trial. Int. J. Nurs. Stud. 2009; 46(8):1047-53.
6. Radcliffe EL, Harding G, Rothman MT, Feder GS. It got right to the spot. The patient experience of primary angioplasty: A qualitative study. Eur. J. Cardiovasc. Nurs. 2009; 8: 216-22.
7. Kalyani MN, Sharif F, Ahmadi F, Iman MT. Iranian patient's expectations about coronary angiography: A qualitative study. Iran. J. Nurs. Midwifery Res. 2013; 18:180-5.
8. Gallagher R, Trotter R, Donoghue J. Preprocedural concerns and anxiety assessment in patients undergoing coronary angiography and percutaneous coronary interventions. Eur. J. Cardiovasc. Nurs. 2010; 9(1):38-44.
9. Keller R, Frankbader M, Beltrun K, Ascalon M, Bowarferres SL. Peer education: an innovative approach for integrating standards into practice. J. Nurs. Care Qual. 2011; 26(2):120-7.
10. Gillespie P, O'Shea E, Paul G, O'Dowd T, Smith SM. Cost effectiveness of peer support for type 2 diabetes. Int J Technol Assess Health Care. 2012; 28(1):3-11.
11. Nematian Jelodar H, Jannati Y, Ghafari R, Yazdani Charati J, Gholami Gorzini M, Esmaeili R. The Impact of Peer Education on Stress Level in Patients Undergoing Coronary Artery Bypass Grafting. J. Babol Univ. Med. Sci. 2015; 17(11):45-51.
12. Heikkila J, Paunonen M. Fear of patients related to coronary arteriography. J. Adv. Nurs., 1998; 28(1):54-62.
13. Kaviani H, Seyfourian H, Sharifi V, Ebrahimkhani N.Reliability and validity of Anxity and Depression Hospital scale (HADS):iranian patients with anxity and depression disorders. Tehran Univ. Med. J. 2009; 67(5):379-85.
14. Phillipe E, Meney M, Larrazet F, Ben-Abderrazak F, Dibie A, Meziane T, et al. Effects of video information in patients undergoing coronary angiography. Arch. Mal. Coeur. Vaiss. 2006; 99(2):95-101.
15. Dehghani A,Mohammadkhan Kermanshahi S, Memarian R. The effect of peer group educational program on multiple sclerosis patients' level of stress. Arak Med. Univ. J. 2012; 15(65):17-26.
16. De Vries L, van der Heijden AA, van 't Riet E, Baan CA, Kostense PJ, Rijken M, et al. Peer support to decrease diabetes-related distress in patients with type 2 diabetes mellitus: design of a randomised controlled trial. BMC Endocr. Disord. J. 2014; 14:21
17. Varaei Sh, Cheraghi MA, Seyedfatemi N, Talebi M, Bahrani N, Dehghani A, Shamsizadeh M. Effect of peer education on anxiety in patients candidate for coronary artery bypass graft surgery: a randomized control trial. J. Nurs. Educ. 2013; 2(3):28-37.
18. Chan D, Cheung H. The effects of education on anxiety among Chinese patients with heart disease undergoing cardiac catheterization in Hong Kong. Contemp. Nurse. 2003; 15(3):310-20.
19. Doğan M, Şenturan L. The effect of music therapy on the level of anxiety in the patients undergoing coronary angiography. Open J. Nurs. 2012; 2:165-9.
20. Thomas KM, Sethares KA. Is guided imagery effective in reducing pain and anxiety in the postoperative total joint arthroplasty patient? Orthop. Nurs. 2010; 29(6):393-9.
21. Jong M, Pijl A, De Gast H, Sjöling M. P02.128. The effects of guided imagery on preoperative anxiety and pain management in patients undergoing laparoscopic cholecystectomy in a multi-centre RCT study. BMC Complement. Altern. Med. 2012; 12(Suppl 1):184.
22. Krannich JHA, Weyers P, Lueger S, Herzog M, Bohrer T, Elert O. Presence of depression and anxiety before and after coronary artery bypass graft surgery and their relationship to age. BMC Psychiatry. 2007; 7(1):47.

23. Behrozian F, Chapari Ilkhchi A, Yazdani Nejad S, Khajemogahi N, Sheikhi M.A, Bahrami Ilkhchi R, Salehivayisi M, Bahrami Ilkhchi A. Depression Prevalence before and after Coronary Artery Bypass Surgery and its Correlation with Some Clinical and Demographic Factors. Jentashapir Sci. Med. J. 2013; 73-85.
24. Khatibi NKH, AhmadiKoumeleh S, Mamianloo H, AbbasiAbyaneh N. Relationship between Perceived Social Support and Pre/ post-operation Anxiety and Depression in Patients undergoing CABG. Iran J. Nurs. 2013; 26(84):63-70.
25. Kumakech E, Cantor-Graae E, Maling S, Bajunirwe F. Peer-group support intervention improves the psychosocial well-being of AIDS orphans: Cluster randomized trial. Soc. Sci. Med. 2009; 68(6):1038-43.

Original article

Predictors of Organizational Commitment in Nursing: Results from Portugal

Alejandro Orgambídez[1]
Helena Almeida[2]

Predictors of Organizational Commitment in Nursing: Results from Portugal

Objective. This work sought to assess the predictor role of work engagement and social support from the supervisor and coworkers on affective commitment with the organization in nursing staff from southern Portugal. **Methods.** A cross-sectional study was conducted with participation from 215 nursing professionals from three public hospitals in southern Portugal. **Results.** Of the respondents, 77.21% were women. Statistically significant and positive correlations were observed between affective organizational commitment and the three dimensions of engagement: vigor (r=0.48), dedication (r=0.49), and absorption (r=0.48). Likewise, support from the supervisor and support from coworkers were positively related with affective commitment (r=0.45 and r=0.24, p<0.01). The linear and hierarchical regression model showed the following significant predictors: support from the supervisor (beta=0.28), vigor (beta=0.26), and absorption (beta=0.17). **Conclusion.** Social support from

---

[1] Psychologist, Ph.D. Professor, Universidad de Málaga (España). email: aorgambidez@uma.es

[2] Psychologist, Ph.D. Professor, Universidade do Algarve (Portugal). email: halmeida@ualg.pt

Article linked to the research: Predictores del compromiso organizacional en enfermería: Resultados desde Portugal.

Conflicts of interest: None.

Receibed: September 19th, 2017.

Accepted: December 12nd, 2017.

How to cite this article: Orgambídez A, Almeida H. Predictors of Organizational Commitment in Nursing: Results from Portugal. Invest. Educ. Enferm. 2018; 36(1):e14.

DOI: 10.17533/udea.iee.v36n1e14

Investigación y Educación en Enfermería
–Nursing Research and Education–
Vol. 36 No1, • February 15th 2018 • ISSNe: 2216-0280

the supervisor and work engagement (vigor and absorption) are important determinants of the affective bond of nursing professionals with their health organizations. Training and formation of the supervisors in leadership and coaching styles, and labor resources at work would permit increasing the levels of affective commitment in the health units.

Descriptors: hospitals, public; motivation; nursing, supervisory; nursing staff, hospital; social support; Portugal.

Predictores del compromiso organizacional en enfermería: Resultados desde Portugal

Objetivo. Evaluar el papel predictor del engagement en el trabajo y el apoyo social del supervisor y de los compañeros sobre el compromiso afectivo con la organización en personal de enfermería del sur de Portugal. **Métodos.** Se realizó un estudio de corte transversal. Participaron 215 profesionales de enfermería de tres hospitales públicos del sur de Portugal. **Resultados.** 77.21% de los respondientes fueron mujeres. Se observaron correlaciones estadísticamente significativas y positivas entre el compromiso organizacional afectivo y las tres dimensiones del engagement: vigor (r=0.48), dedicación (r=0.49) y absorción (r=0.48). Igualmente, el apoyo del supervisor y el apoyo de los compañeros se relacionó positivamente con el compromiso afectivo (r=0.45 y r=0.24, $p<0.01$). El modelo de regresión lineal y jerárquico mostró los siguientes predictores significativos: el apoyo del supervisor (beta=0.28), el vigor (beta=0.26) y la absorción (beta=0.17). **Conclusión.** El apoyo social del supervisor y el engagement en el trabajo (vigor y absorción) son importantes determinantes del vínculo afectivo de los profesionales de enfermería con sus organizaciones de salud. El entrenamiento y formación de los supervisores en estilos de liderazgo y coaching, y recursos laborales en el trabajo permitirían aumentar los niveles de compromiso afectivo en las unidades de salud.

Descriptores: hospitales públicos; motivación; supervisión de enfermería; personal de enfermería en hospital; apoyo social; Portugal.

Preditores do compromisso organizacional em enfermagem: Resultados desde Portugal

Objetivo. Avaliar o papel preditor do engagement no trabalho e o apoio social do supervisor e dos companheiros sobre o compromisso afetivo com a organização no pessoal da enfermagem do sul de Portugal. **Métodos.** Se realizou um estudo de corte transversal. Participaram 215 profissionais de enfermagem de três hospitais públicos do sul de Portugal. **Resultados.** 77.21% dos respondentes foram mulheres. Se observaram correlações estatisticamente significativas e positivas entre o compromisso organizacional afetivo e as três dimensões do engagement: vigor (r=0.48), dedicação (r=0.49) e absorção (r=0.48). Igualmente, o apoio do supervisor e o apoio dos companheiros se relacionou positivamente com o compromisso afetivo (r=0.45 e r=0.24, p<0.01). O modelo de regressão lineal e hierárquico mostrou os seguintes preditores significativos: o apoio do supervisor (beta=0.28), o vigor (beta=0.26) e a absorção (beta=0.17). **Conclusão.** O apoio social do supervisor e o engagement no trabalho (vigor e absorção) são importantes determinantes do vínculo afetivo dos profissionais de enfermagem com suas organizações de saúde. O treinamento e formação dos supervisores em estilos de liderança e coaching, e recursos laborais no trabalho permitiriam aumentar os níveis de compromisso afetivo nas unidades de saúde.

Descritores: hospitais públicos; motivação; supervisão de enfermagem; recursos humanos de enfermagem no hospital; apoio social; Portugal.

Introduction

Organizational commitment is one of the elements that guarantee the commitment of the nursing staff with the quality of service and care, even in high-stress situations and work contexts with few human and organizational resources.(1,2) Organizational commitment refers to the existence of a desire, a necessity, and an obligation to remain as a member of an organization. These three forms of attachment --desire, necessity, obligation-- respond to three dimensions or types: affective commitment, continuous commitment, and normative commitment.(3)

Affective commitment refers to the emotional bond between the individual and the organization, the degree or strength of the person's positive feelings toward the organization. *Continuous commitment* refers to the bond individuals establish with their organization as a result of the investments (relation of time/effort-wages received) made over time and it is associated to the economic costs for workers if they had to abandon the company. Finally, *normative commitment* consists in the moral obligation felt by workers to continue ties with the company.(2,3) Of the three types of commitment, the affective commitment is the most strongly associated to the intention of remaining in the company and to the implication in extra-role tasks in the organization. Furthermore, workers with strong affective commitment are willing to invest greater efforts at work in benefit of the organization, manifest higher work satisfaction, and show higher levels of performance and productivity on the job post.(2)

Strong affective organizational commitment is also a characteristic of nursing professionals with high levels of work engagement.(4,5) While organizational commitment is a binding force between the individual and the organization, engagement in the work context refers to being committed to the job role or at work per se.(4) Work engagement is defined as a positive mental state, associated to work and characterized by high levels of vigor, dedication and absorption.(6) Vigor refers to the high levels of energy and mental resistance when working, associated to the desire to invest effort and time at work even when obstacles and difficulties arise. Dedication is related to the high job commitment, together with the manifestation of a feeling of significance, pride at work, and inspiration. Finally, absorption emerges when people are totally concentrated at work while time "flies by", finding difficulties to disconnect from what they are doing.(6,7)

According to the Job Demands-Resources (JDR) model,(7) work engagement is an important predictor of organizational commitment. Engaged employees feel the work they do is important, showing better professional performance and, thus, experiencing positive feelings and emotions at work. Consequently, they would tend to keep the bond with the organization where they experience said positive emotions and sensations. Diverse studies and research have related high levels of work engagement with strong affective commitment with the organization in samples from diverse countries.(8-10) In addition, one of the elements of the work organization most highlighted by the nursing staff is social support.(11) Social support at work refers to the interaction of help available in the workplace, related to relations with coworkers and supervisors.(11,12) It implies two types of support: socio-emotional and instrumental. The first refers to the degree of social and emotional integration between coworkers and supervisors, while the latter refers to collaboration with job tasks offered between employees and supervisors.(11,12)

Diverse studies have shown positive relationships between the social support perceived by nursing professionals and the individual's commitment with the company.(13-17) When people receive help and advice to adequately perform tasks and be efficient at work, and feel integrated into the group and supported by the supervisor, they enjoy the work they do more and feel more identified and committed with the organization. The study of organizational commitment, especially affective commitment, is quite important within the context of health services and -- above all -- among nursing professionals. The affective bond with the company can be considered an indicator of the quality of care and services in health organizations, as well as an important indicator of the intention of remaining/abandoning by nursing professionals.(14) Although the study of organizational commitment and its antecedents has been conducted in depth in the context of business management, within the nursing context it is still scarce(2) and hardly researched in the health context in Portugal. In this sense, the objective of this study was to test the predictor role of social support and work engagement affective organizational commitment in a sample of nursing personnel from southern Portugal.

Methods

A cross-sectional correlational and descriptive study was carried out with 450 nursing professionals from three public hospitals in southern Portugal who were surveyed between February and April of 2015, obtaining a final sample of 215 participants (55.6% response rate). The selection criterion to participate in the study was to have worked for at least one year in the same service in a public hospital.

The study used three instruments: *Social support:* using the adaptation into Portuguese of the social support dimension in the Job Content Questionnaire (JCQ),(12) which has eight items distributed into two subscales: support from the supervisor (4 items) and support from coworkers (4 items). The responses are Likert type (1: Totally disagree to 4: Totally agree). Higher scores indicate high levels of social support from the supervisor and from colleagues, with a maximum score of 16 in each subscale; Work Engagement: using the Portuguese version of the Utrecht Work Engagement Scale (UWES),(6) which has nine items distributed into three dimensions: vigor (3 items), dedication (3 items), and absorption (3 items). The response options were also Likert type (0: Never to 6: Every day), with a maximum score of 18 in each subscale; and, *Affective organizational commitment*: to evaluate affective organizational commitment using the adaptation into Portuguese of the *organizational Commitment* Scale by Meyer, Allen, and Smith,(3) specifically the dimension related to affective commitment comprised of six items with response options ranging from 1: totally disagree to 7: Totally agree. Likewise, higher scores indicate higher levels of affective organizational commitment, with a maximum score of 42.

The information was gathered between February and April 2015. The questionnaires were applied at the start of the work shift, allowing participants all the time necessary to fill them out. The STATA v.13 package was used for data analysis. The work calculated descriptive statistics of the variables (mean, typical deviation, asymmetry, and kurtosis), correlations among them and the internal consistency coefficients (Cronbach's alpha). Multiple linear and hierarchical regression models were conducted to test the predictor role of social support (V1-supervisor and V2-colleagues) and engagement (V3-vigor, V4-dedication, V5-

absorption) over V6-affective commitment with the organization. The independent variables are introduced progressively (through blocks) into the multiple sequential or hierarchical regression model used to evaluate the contribution made by each new variable to the prediction. The variance inflation factor (VIF) was calculated along with the tolerance measure to verify the multicollinearity assumption, and the Breusch-Pagan test was used to verify the residual homoscedasticity assumption in the regression models.(18)

The Ethics Committees in the three hospitals approved the research. Participation was at all times voluntary and the confidentiality and anonymity of all the answers was guaranteed.

Results

The mean age of the 215 participants in this study was 34.89±9.37 years, with 77.21% of the participants being women (n = 166). In relation to marital status, 46.51% of the sample indicated being single and 34.80% married. Seventy percent of the participants (n = 150) has indefinite work contract, with a mean around 10 years of professional experience (9.4 years). Table 1 shows the means, typical deviations, asymmetry, kurtosis, and correlations of the study variables of the scales and subscales used in the study. The mean for support from the supervisor (2.96) and that of support from coworkers (3.07) were above the mean of the response scale (2 of a maximum of 4 points). In relation to the three dimensions of engagement, the mean values were slightly above the mean of the response scale (3 of a maximum of 6 points), with 4.62, 4.71, and 4.5 for vigor, dedication, and absorption, respectively. Regarding affective organizational commitment, a mean value of 3.97 was obtained from a possible maximum of 7, which indicates that the study participants did not appear specially committed affectively with the organization.

Table 1. Descriptive statistics and correlations of the study variables

Variables	V1	V2	V3	V4	V5	V6
V1-Social support from the supervisor	(0.93)*					
V2-Social support from coworkers	0.41	(0.86)				
V3-Engagement – Vigor	0.38	0.22	(0.80)			
V4-Engagement - Dedication	0.43	0.28	0.79	(0.88)		
V5-Engagement - Absorption	0.39	0.30	0.62	0.74	(0.82)	
V6-Affective commitment	0.45	0.24	0.48	0.49	0.48	(0.79)
Descriptive statistics						
Mean	2.96	3.07	4.62	4.71	4.50	3.97
Typical deviation	0.88	0.62	1.09	1.18	1.21	1.11
Asymmetry	-0.65	-0.40	-1.42	-1.40	-1.09	0.39
Kurtosis	-0.53	0.28	2.28	2.10	1.04	0.35

(*)Reliability coefficients on the diagonal

As expected, the correlation analyses among the six variables showed that social support and engagement at work were related in statistically significant manner with affective organizational commitment, with all the probability values <0.01. In relation to social support, Pearson's r coefficients were 0.45 for support from the supervisor (moderate correlation) and 0.24 for support from coworkers (low correlation). Regarding engagement, the correlation values were 0.48, 0.49, and 0.48 for vigor, dedication, and absorption, respectively, and indicative of a moderate correlation.

Table 2 illustrates two multiple linear and hierarchical regression models to verify the predictor role of social support (supervisor and coworkers) and engagement (vigor, dedication, absorption) on the participants' levels of affective organizational commitment. The VIF values of all the independent variables were <5 and the measure of tolerance <0.2, which indicates the absence of multicollinearity problems. The Breusch-Pagan test was not significant: $X^2_{(1)} = 0.14$, $p = 0.15$, which expresses the homoscedasticity of residuals in the regression models calculated. It was found in Model 1 that the total of the variance explained was 20.18% ($F_{(2.190)} = 24.02$, $p < 0.01$), and that the only significant predictor of commitment was the social support from the supervisor (beta = 0.41). Second, the three dimensions of engagement, as predictor variables, were added to the second model (M2). The variance explained in Model 2 was 33.01% ($F_{(5.197)} = 23.01$), and inclusion of the three dimensions of engagement explained 12.38% of additional variance, with a change in $R^2 = 0.13$ ($F_{(3.187)} = 11.93$, $p < 0.01$), after controlling the effect of social support from the supervisor and from colleagues. In this last model, support from the supervisor (beta = 0.28), vigor (beta = 0.26), and absorption (beta = 0.19) appeared as significant predictors.

Table 2. Regression model on affective organizational commitment

Models	Beta	SE	*t*	*p* > |*t*|
Model 1				
V1-Social support from the supervisor	0.41	0.07	5.81	0.001
V2-Social support from coworkers	0.08	0.07	0.77	0.240
Cons.	-	0.07	0.24	0.733
Model 2				
V1-Social support from the supervisor	0.28	0.07	3.98	0.001
V2-Social support from coworkers	0.02	0.06	0.34	0.737
V3-Engagement - Vigor	0.26	0.09	2.76	0.006
V4-Engagement - Dedication	-0.01	0.11	-0.09	0.929
V5-Engagement - Absortion	0.19	0.09	2.25	0.026
Cons.	-	0.07	0.55	0.580

Discussion

Affective organizational commitment from the nursing staff is crucial in providing quality care and excellence in health organizations and units.(2) In this sense, the objective of this study was to test the predictor role of social support (from the supervisor and from coworkers) and of engagement (vigor, dedication, absorption) on the affective organizational commitment in a sample of nursing personnel from southern Portugal.

Descriptive statistics showed that the participants perceive high levels of social support from the supervisor and from coworkers, with the latter being the highest. The professionals surveyed feel they have good relationships with coworkers and supervisors and that they can receive instrumental and socio-emotional support in the workplace. In keeping with this, the study participants showed moderate levels of work engagement in the form of mental energy and resistance (vigor), work implication and pride at work (dedication), and concentration at work (absorption). Lastly, affective organizational commitment showed the lowest mean score of all the study variables, suggesting that the participants do not show a specially intense emotional bond with their organizations, although it does not discard that other types of links (continuous, normative) may be present with greater force.

The results showed the positive and significant relationship between both types of social support, from the supervisor and from coworkers, and the affective commitment with the organization.(13-17) Communication with the supervisor and coworkers, the possibility of receiving guidance and advice within the group, or being able to share stressful experiences and situations lead to positive evaluations of the work context and the institution, increasing the levels of affective commitment toward the organization.(2) Similarly, a positive and significant relationship was observed between work engagement and affective organizational commitment. When people are full of energy at work, they perceive that the job tasks they perform bear significance and feel that their daily work "absorbs" them; they develop positive attitudes and feelings towards the job and the organization and, consequently, manifest higher desires of remaining in the same institution.(8-10)

The regression models showed that support from the supervisor, vigor, and absorption were positive and significant predictors of affective commitment with the organization. These results are in line with other research conducted with nursing staff from diverse countries.(8-10,13,14,16) However, it is worth highlighting that support from colleagues did not appear as a significant predictor, as noted in other studies.(16,17) A possible explanation can be the existence of third variables that relate the support from coworkers and commitment. It is likely that this type of support has a direct effect upon the organizational commitment through work satisfaction.(19)

This research had a series of limitations that should be considered when interpreting the results. The cross-sectional correlational design does not permit establishing causality relations among the variables, although the regression model carried out proposes the existence of predictor variables and result variables. Nevertheless, the empirical evidence around the DRL model (6,7) supports the existence of the relations established in this study. In addition, the survey design is particularly sensitive to certain biases, like the social desirability bias in the answers given in the questionnaires.(20)

Support from the supervisor, vigor, and absorption are elements that increase the levels of affective commitment with the organization. Hence, social support from the supervisor and work engagement emerge as critical elements in the design of interventions that permit increasing the levels of affective organizational commitment in the nursing staff. Among the strategies centered on social support, the supervisors should receive formation in team management skills, leadership styles, and ways of providing adequate feedback at work. Another line of intervention would center on empowering engagement at work, providing labor resources to the nursing professionals, like autonomy at work to make decisions or a higher variety of tasks to perform.

Finally, new research should be conducted to delve into the antecedents of the affective organizational commitment in nursing staff. In this sense, studies should focus on differentiating and verifying the effects of each type of social support (supervisor and coworkers) upon the organizational commitment (e.g., direct or indirect effects through work satisfaction). Likewise, longitudinal research would permit testing the evolution of the commitment over time and verifying which elements affect its evolution.

References

1. Aiken LH, Sermeus W, Van den Heede K et al. Patients safety, satisfaction, and quality of hospital care: cross sectional survey of nurses and patients in 12 countries in Europe and the United States. BMJ. 2012; 344:e1717.
2. Liou SR. An analysis of the concept of organizational commitment. Nurs. Forum. 2008; 43:116-25.
3. Meyer JP, Allen NJ, Smith JC. Commitment to Organizations and Occupations: Extension and Test of a Three-component Conceptualization. J. Appl. Psychol. 1993; 78:538-51.
4. García-Sierra R, Fernández-Castro J, Martínez-Zaragoza F. Work engagement in nursing: An integrative review of the literature. J. Nurs. Manag. 2015; 24:E101-E111.
5. Simpson MR. Engagement at work: A review of the literature. Int. J. Nurs. Stud. 2009; 46:1012-24.
6. Schaufeli WB, Salanova M, González-Romá V, Bakker AB. The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. J. Happiness Stud. 2002; 3:71-91.
7. Schaufeli WB, Bakker AB. Job demands, job resources, and their relationships with burnout and engagement: A multi-sample study. J. Organ. Behav. 2004; 25:293-315.
8. Beukes I, Botha E. Organizational commitment, work engagement, and meaning of work of nursing staff in hospitals. S. Afr. J. Ind. Psychol. 2013; 39:1-10.
9. Brunetto Y, Xerri M, Shriberg A, Shacklock K, Newman S, Dienger J. The impact of workplace relationships on engagement, well-being, commitment and turnover for nurses in Australia and the USA. J. Adv. Nurs. 2013; 69:2786-99.
10. Santos A, Chambel MJ, Castanheira F. Relational job characteristics and nurses' affective organizational commitment: The mediating role of work engagement. J. Adv. Nurs. 2016; 72:294-305.
11. Martín-Arribas MC. Estrés relacionado con el trabajo (modelo de demanda-control-apoyo social) y alteraciones en la salud: Una revisión de la evidencia existente. Enferm. Intensiva. 2007; 18:168-81.
12. Karasek R, Theorell T. Healthy work. Stress, productivity, and the reconstruction of working life. New York: BasicBooks; 1990.
13. Chu C-I, Lee M-S, Hsu H-M. The impact of social support and job stress on public health nurses' organizational citizenship behaviors in rural Taiwan. Public Health Nurs. 2006; 23:494-505.
14. El Akremi A, Colaianni G, Portogjese I, Galletta M, Battistelli A. How organizational support impacts affective commitment and turnover among Italian nurses: A multilevel mediation model. Int. J. Human Resour. Manag. 2014; 25:1185-207.
15. Leiter MP. Commitment as a function of stress reactions among nurses: A model of psychological evaluations of work settings. Can. J. Commun. Ment. Health. 2009; 7:117-33.
16. Rousseau V, Aubé C. Social support at work and affective commitment to the organization: The moderating effect of job resource adequacy and ambient conditions. J. Soc. Psychol. 2010; 150:321-40.
17. Salami S. Mentoring and work attitudes among nurses: The moderator roles of gender and social support. Eur. J. Psychol. 2010; 6:102-26.
18. Cohen J. Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Erlbaum; 1988.
19. Orgambídez A, Almeida H. Work engagement, social support, and job satisfaction in Portuguese nursing staff: A winning combination. Appl. Nurs. Res. 2017;36:37-41.
20. Navas JM. Métodos, diseños y técnicas de investigación psicológica. Madrid: UNED; 2002.