Investigación y Educación en Enfermería

40 años

Divulgando el conocimiento

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Editorial

Consolidation of the Journal *Investigación y Educación en Enfermería* as a Publication with Impact on the Dissemination of Nursing Knowledge*

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Almost 14 years ago, Dean Beatriz Elena Ospina Rave entrusted me with the direction of the IEE Journal, given the leave of absence taken by the then director, María del Pilar Pastor, who had been named Secretary of Health of the Municipality of Medellín. Meeting this responsibility represented a great academic and professional challenge because it was a scientific publication of the highest quality in the area of Nursing, recognized in Colombia and Latin America. I received a journal with 26 years of uninterrupted edition and which already had three years in category A2 in the PUBLINDEX by COLCIENCIAS, hence, I had the commitment to lead the preparation of the publication to ascend to the long-awaited maximum A1 category, for which it was "only" necessary to meet the most complex criterion to obtain: achieve indexing in Medline, or in at

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least one of the bibliographic citational bases, like Elsevier's Scopus or in the Web of Science, now Clarivate.

The first thing I did in 2010, which I now do not recommend to any editor under any circumstance, was to send the journal for simultaneous evaluation in Medline, Scopus, and WoS. The result: the three databases rejected indexing, but nourished their assessments with invaluable recommendations, some of which were implemented with minor difficulty due to the high level the journal already had, such as increasing the periodicity from two to three issues per year and performing some minor adjustments in the editorial process. But other observations were profoundly debated in the Editorial Committee and in meetings with the Faculty's professors, given that they included substantive aspects; the most controversial was that of changing the publication language from Spanish to English to improve the dissemination of the articles so that they were accessible, by language, at a global level. Although some professors, at the time, predicted the journal's demise if it were published in English, the truth is that since this requirement was approved in 2012 the journal began to receive a greater number of articles, a situation that has increased to avalanche level in recent years.

Currently, eight of every ten articles come from outside Colombia, with significant contribution from Latin America and a large increase of manuscripts received from countries in Europe, Asia, and Oceania. In every article it is seen that the ways in which Nursing faces the challenge of providing care to people in any part of the world are common. In 2013, after having adjusted all the recommendations by the three bibliographic databases, we put together the corresponding packages to mail and gave these our blessings before they left the office. The result of this second evaluation was the approval for indexing in Medline in 2014 and in Scopus in 2015; in the latter, we were classified with an honorable quartile 3! With WoS, although not formally rejecting us, did write to us that "Nursing was not a priority area for indexing at that time", a phrase that still fills me with indignation.

Due to the heated discussion about changes in the PUBLINDEX measurement model, between 2014 and 2016 no calls were made and, consequently, IEE retained the A2 category during those years, although already more than meeting the requirements for the expected A1. In 2017, the new PUBLINDEX model went into effect, much tougher than the prior, with the consequence that almost half of the Colombian scientific journals were eliminated from the system and the rest were downgraded. To reach the A1 category in the new model, the journal needed to be classified in quartile 1 by one of the two citational bibliographic bases; to maintain the A2 category it was essential to have reached quartile 2; so, because we were in quartile 3 in Scopus, we dropped from classification A2 to B, but that did not discourage us and we continued working for an editorial process of excellence.

Something quite important took place in 2019: committed to caring for the planet and abiding by the global recommendation to struggle against deforestation and contribute to reducing greenhouse gas emissions, the IEE Journal, after 36 years of being printed, became an exclusively electronic publication. The huge effort to print up to 1-thousand copies per number, the search for subscribers, the delivery and exchange of the physical journal were, with much difficulty, gradually reduced during the 10-year trajectory in which the printed and electronic versions coexisted, strengthening the latter with dissemination strategies of full-text articles and of free reading, that were available on the Internet sites of the many bibliographic bases in which we are indexed. In addition, the complete collection with articles since 1983 was updated on our site on the journal portal of Universidad de Antioquia.

Those high-profile bibliographic bases played an important role for *Investigación y Educación*

en Enfermería to adapt to global demands for continuous improvement to align with the digital needs of the translation of what is the governance of the journal, which becomes visible when reviewing the editorial reach, practices, and procedures so that the articles can be read not only by humans, but by machines through metadata, which helped in the dissemination of the contents endorsed on our pages. Thus, in 2020, we were indexed by the most important bibliographic database in the world in health sciences: PubMed Central. This fact improved the journal's visibility by increasing the number of times our articles were cited, reflected in the change of classification from quartile 3 to 2 in Scopus since 2021. By the following year, IEE had another grand achievement: after four failed attempts, it was indexed in the world's most recognized bibliographic citation base: Web of Science; in the Journal Citation Report we obtained an impact factor of 2, meaning that each article published in the journal is cited on average two times. This value also tells us that we are the nursing journal with the highest impact in Latin America.

And, now what? What does destiny have in store for us? Our obligation is to continue with the registration and observance of the criteria by indexing bases, for the maintenance and, hopefully improvement of the metrics as quality indicators of the journals. We also have great challenges to make the transition from Open Access to Open Science a reality. It is true that we have already made enormous strides: since 2009, we have full-text articles available, free of charge to publish or read; since 2017, all the articles have DOI identification; since 2020, authors' ORCIDs are shown and the declaration of the use of the Creative Commons license is added that requires the attribution of authorship, non-commercial use and distribution under the same original license (BY-NC- SA). Moreover, we are indexed in the Directory of Open Access Journals (DOAJ), where we soon expect to obtain the golden seal. There are other challenges that need improvement, one is to achieve greater dissemination in social and academic networks. We must also advance in the mechanisms we will adopt to show the world transparency in all the stages of the editorial process: issues of open peer review, open data provision, and continuous publication should be discussed for possible incorporation. The future will dictate where to continue.

Lastly, I would like to thank the Faculty of Nursing for having allowed me to be the journal's editor for almost 14 years, during which I have learned from the successes, but more from the mistakes made. I highlight the responsibility and academic judgment of the 11 professors who preceded me as head of the journal; without them, the achievements reached by the IEE would not have been possible; with them, I share 40 years of the journal's uninterrupted publication. We have been responsible for the edition of 95 issues that already compile 1,173 articles, thus, promoting the fulfillment of the social purpose of legitimizing, storing, and keeping a rigorous record of the scientific knowledge of nursing to make it accessible in the global setting. Also, the authors who have written in our pages deserve very special thanks, as well as those individuals who are guarantors of the journal's quality and who support us in the internal and external Editorial Committees. We must also exalt the work by the experts who have participated in the irreplaceable evaluation of the articles, which has been an example of equanimity and independence of judgment.

I also thank our esteemed monitors and those who have collaborated with us in the translation and revision of the texts with such rigor. Furthermore, it is necessary to recognize our readers who, during these 40 years, have accompanied us in this space for reflection on knowledge aimed at improving the care of people. We count on everyone's perseverance and enthusiasm to continue making this the best means of dissemination!

Original Article

Transpersonal Caritas Relationship: A new concept from the unitary caring science framework of Jean Watson

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Transpersonal Caritas Relationship: A new concept from the unitary caring science framework of Jean Watson

Abstract

Objective. To analyze deeply the concept of the transpersonal caring relationship as the core of the theory of Caring Science proposed by Jean Watson. To present a historical evolution and to introduce the Transpersonal Caritas Relationship construct. **Methods.** Methodological Study to support the central concept measured by the Watson Caritas patient instrument. We designed a focus group with four nursing scholars to develop the "Transpersonal Caritas Relationship" construct. We recount the history of the concept of the transpersonal caring relationship, then analyze this concept in terms of Watson's theory. We reviewed the concept with Dr. Jean Watson, presented her with the construct, and discussed our considerations. **Results**. This article introduces a transitional adaptation of the concept of transpersonal relationship to Caritas' transpersonal relationship.

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Transpersonal Caritas Relationship is the foundation of evolved Caritas nursing, recognizing that mutual caring affects the universal field we all belong to Caritas' consciousness and action affect the energy field when the nurse relates with the other, making it possible to awaken the compassionate heart, which is the foundation of Evolved Caritas Nursing Universal love and in this way evolve to the Caritas consciousness that allows recognizing the other with loving kindness in the practice of careful. This is the proposed central concept measured in the caring approach using the Watson Caritas Patient. **Conclusion.** This article introduces a transitional adaptation of the concept of transpersonal relationship to the Caritas transpersonal relationship, which is the foundation of Caritas Evolved Nursing.

Descriptors: nursing theory; nursing care; nursing.

Relación Transpersonal Caritas: Un nuevo concepto desde el marco de la ciencia del cuidado de Jean Watson

Resumen

Objetivo. Analizar de manera profunda el concepto de relación de cuidado transpersonal como núcleo de la teoría de la Ciencia del Cuidado propuesta por Jean Watson. Presentando la evolución histórica e introduciendo el constructo "Relación Transpersonal Caritas"**. Métodos.** Estudio Metodológico para sustentar el concepto central medido por el instrumento paciente Watson Caritas. Se diseñó un grupo focal con cuatro académicas de enfermería para desarrollar el constructo "Relación Transpersonal Caritas". Posteriormente se narra la historia del concepto de relación de cuidado transpersonal y luego se analiza este concepto en términos de la teoría de Watson. Se presento y revisó el constructo desarrollado a la Dra. Jean Watson, por último, se discutieron las consideraciones surgidas. **Resultados.** Este artículo presenta una adaptación transitoria del concepto de relación transpersonal a la relación transpersonal de Caritas. La Relación Transpersonal Caritas es la base de la evolución de la enfermería Caritas, reconociendo que el cuidado mutuo afecta el campo universal al que todos pertenecemos. La conciencia y la acción de Caritas afectan el campo energético cuando la enfermera se relaciona con el otro, posibilitando despertar el corazón compasivo, que es la base de la Enfermería Cáritas Evolucionada. Amor universal y de esta manera evolucionar hacia la conciencia caritas que permite reconocer al otro con bondad amorosa en

la práctica del cuidado. Este es el concepto central propuesto medido en la práctica del cuidado utilizando el Watson Caritas Patient. **Conclusión.** Este artículo introduce una adaptación transicional del concepto de relación transpersonal a la relación transpersonal Caritas, que es el fundamento de la Enfermería Caritas Evolucionada.

Descriptores: teoría de enfermería; atención de enfermería; enfermería.

Relacionamento Transpessoal da Caritas: Um novo conceito a partir do referencial da ciência do cuidado de Jean Watson

Resumo

Objetivo. Analisar em profundidade o conceito de relação de cuidado transpessoal como cerne da teoria da Ciência do Cuidado proposta por Jean Watson. Apresentando a evolução histórica e introduzindo o construto "Relacionamento Transpessoal da Caritas". **Método**s. Estudo metodológico para fundamentar o conceito central mensurado pelo instrumento de paciente Watson Caritas. Foi desenhado um grupo focal com quatro acadêmicos de enfermagem para desenvolver o construto "Relacionamento Transpessoal da Caritas". Posteriormente, é narrada a história do conceito de relação de cuidado transpessoal e este conceito é então analisado à luz da teoria de Watson. O construto desenvolvido foi apresentado e revisado à Dra. Jean Watson e, por fim, foram discutidas as considerações que surgiram. **Resultados.** Este artigo apresenta uma adaptação temporária do conceito de relação transpessoal para a relação transpessoal da Caritas. A Relação Transpessoal da Caritas é a base para a evolução da enfermagem da Caritas, reconhecendo que o cuidado mútuo afeta o campo universal ao qual todos pertencemos. A consciência e a ação da Caritas afetam o campo energético quando o enfermeiro se relaciona com os outros, possibilitando despertar o coração compassivo, que é a base da Caritas Evolved Nursing. Amor universal e desta forma evoluir para a consciência caritas que nos permite reconhecer o outro com bondade amorosa na prática do cuidado. Este é o conceito central proposto medido na prática assistencial por meio do Watson Caritas Patient. **Conclusão**. Este artigo apresenta uma adaptação transitória do conceito de relação transpessoal para a relação transpessoal da Caritas, que é a base da Caritas Evolved Nursing.

Descritores: teoria de enfermagem; cuidados de enfermagem; enfermagem.

Introduction

The central thesis of Watson's theory of Caring Science is that "human beings cannot be treated as objects and cannot be separated from self, other, nature, and the universe." Therefore, the theory is based on the transpersonal caring that happens on occasion or at the caring moment and the consciousness of caring, which brings us healing.[1] The philosophical view of the theory of caring human science accords with interconnectivity as the basis of all care interactions. Transpersonal caring considered a fundamental concept of this theory, recognizes the unity of life and care, beginning with the individual and progressing towards the other, the community, the world, planet Earth, the universe and beyond. It follows the Buddhist principle of anatman, or non-self (oneness), affirming, as Chodron, 2014 and Hanh, 1999, that we are all inextricably connected. Through Anatman, we "recognize ourselves in everyone we meet."[2]

The frame of reference of human caring theory is a central part of the nursing discipline. The philosophical, ethical-moral-spiritual stance influences this framework, which is intertwined with the arts, the humanities and fields involving the study and practice of caring for a person to encompass human science's humanitarian focus on processes, phenomena and experiences in human caring.[1] The above-mentioned falls within a neither dualistic nor rational worldview, where there is connectivity with the Whole, understood as the universal field of the infinite and Cosmic LOVE.[1] Watson takes up this concept from the Karuna Buddhist tenet, which relates to love and translates as compassion.[3-6] This concept has two components: "com," which means union "with," and passion, which means suffering.[2,3-6] According to Hanh, Karuna intends to transform or alleviate the burden of suffering and pain by engaging in elements such as deep concern, empathy and "dwelling in the present moment".[3-6] Although suffering is inevitable, we must alleviate it and not let it paralyze us. As Hanh says, we need to allow the present moment's happiness to fill people's hearts, creating peace, joy, and happiness through compassion.[2]

The theory of human science is immersed in the worldview known as the unitary transformative paradigm,[7-8] non-local consciousness (Dossey 1991) or medicine/nursing into Era III.[1] This caring model includes a calling for fields such as the arts and sciences, making it a cornerstone that encompasses and interconnects art, science, the humanities, and the nursing profession's spirituality, whose core is the human phenomenon in practice. It is an invitation and an opportunity to internalize and grow by using philosophy as a personal and professional way of life.[9]

On the other hand, loving-kindness and compassion are also frequently mentioned in the healthcare literature. However, these concepts are often

rhetorical because they are based on preconceived theoretical definitions and lack specificity, clinical applicability and conceptual validity. They also do not consider how patients experience these concepts or the meaning they give to them, likely because they have received little empirical attention. However, many studies on this matter recently emerged,[10] contributing to a body of evidence supporting this knowledge. As a result, these topics are referred to with the quality-of-care indicators and proposals for humanization in patient care.[10] Considering what was mentioned above, the conceptual approach of transpersonal care is justified, as is the importance of advancing its understanding and implementing it in different educational and professional performance scenarios.

The transpersonal caring relationship occurs when the provider of care connects with someone and embraces their spirit through genuine and complete care, intending to be present in the here and now and conveying concern for the other person's inner life and the personal meaning that they give to situations, experiences and moments in life.[1] The degree to which a nurse can detect a person's condition on the level of their soul and spirit, over and above their physical condition, is influenced by and related to the consciousness of universal love and caring intentions, as well as by how the nurse enters in physical space or phenomenal field of the other person.[9] Being able to go beyond the physical to the consciousness of universal love requires a thorough ontological reflection along the lines of the philosopher Byung Chul Han,[11] who proposed that "sensitivity and receptivity for the other presupposes an exposure that offers itself even in suffering. It is a pain. Without this primordial pain, the ego becomes more emboldened, exalts his (her) for itself, and objectifies the other by reducing it to an object". Meanwhile, for Levinas,[12] sensitivity and receptivity for the other presuppose vulnerability. The painful wound is a primordial opening to the other".[12] In this way, transpersonal caring competencies are related to the promotion of human competencies and to forms of being and becoming a nurse at times when indifference and coldness towards the other are predominant; as Chul Han[11] says, "our soul is hardened, such that we are not at all sensitive or receptive to the other. Without feeling pain for the other, we have no way to access the other's pain".[11]

In Watson's theory, these competencies and practical knowledge of Caritas caring are essential healing and technological competencies that make it possible to see the human-universe relationship as one. In this way, by developing caring-healing concepts, practices, theories, and philosophies that intertwine with Love, Caring is incorporated into our consciousness and intends to affect the Whole by using our unique gifts and talents in the practice of nursing.[1] As Watson says, this involves a holographic view of caring, which mirrors the holographic universe. The Whole is in each part, and each piece affects the Whole. In this way, our role —our personal and professional work— contributes to making a difference at the moment and affects the universal holographic field that surrounds us and to which we all belong.[1] This approach departs from the conventional, modern biomedical model that considers technological curing competencies as fundamental to care and transpersonal caring competencies and concepts as valuable to the practice but not essential.[13-16] They also are not part of the healthcare culture or the models current health systems offer.[1] This article aims to present the Transpersonal Caritas Relationship construct from the perspective of the evolution of the concept proposed by Jean Watson and applied within the theory of Caring Science framework.

Methods

The methodological study developed in sequential phases, which aims to support the central concept measured by the Watson Caritas Patient® instrument. 1)First, the history of the concept of Transpersonal Care Relationship is presented; 2) a description of the basis of this

concept; 3) a presentation of the construct of the Caritas Transpersonal Relationship; and, finally, 4) our reflections. A focus group was designed with four nursing academic university professors with training and experience in analyzing nursing models and theories to develop the "Transpersonal Caritas Relationship." For this open discussion, one of the teachers led the dialogue, established initial agreements, and clarified the purpose of the meeting. Subsequently, a contrast was presented with situations that helped reflect on everyday practice within a philosophical framework that can be questioned regarding implementation in practice. Next, the history of the "transpersonal care relationship" concept was explained, and it was analyzed in terms of Watson's theory. The document previously developed and analyzed by the authors with the concept "Caritas Relationship" was presented and reviewed. Transpersonal", at this time, we had the participation of Dr. Jean Watson; the meeting focused on discussing the developed concept, capturing the ideas and appreciations in this regard, and, finally, some of our considerations were discussed. The present study did not need ethical approval because no human participants were involved in the present work.

Results

Background: The history of the concept of the transpersonal caring relationship

Human caring connection begins with its place in cosmology, ontology, epistemology, ethics, aesthetics and the philosophy of the science of human beings from a unitary perspective. As mentioned before, this refers to what Rogers first proposed as the unitary transformative paradigm,[11,18] Fawcett[19] with her proposal of "simultaneous view," followed by Newman [7-8] with the unitary transformative paradigm, and Watson[1] with "Non-local Consciousness or Era III Medicine/Nursing".[1] This unitary caring science arose from the transpersonal caring theory and its application through Caritas processes.[17] Everything is connected at an energetic level in the unitary transformative paradigm, and all acts or actions, no matter how small, affect the energy field. In this paradigm, human beings are seen as a whole with no division, and as Watson explains, caring moments are transpersonal moments that transcend time, space, and physical presence.[1] The notions shared by this paradigm and human being science mix and bring to life the unitary model of caring science.[17]

For Watson,[1] the connection between love and caring creates an opening, an alignment with the source of infinite love, the largest source of internal and external healing for oneself and others. Thus, this connection goes deeper than being kind or wishing the best for others. The essential qualities include a feeling of empathy, altruistic action, reverence for equanimity and being in the present moment. Consequently, a moment of transpersonal caring can be considered a transformed turning point for healing.[1]

Watson first introduced the concept of the Transpersonal Caring Relationship in 1979.[20] Her theory states the role, mission and professional and ethical pact nurses have with society to support human caring and preserve human dignity and integrity amid multiple threats and crises, including the suffering of death.[20.21] It also establishes the interconnection among all people at the human, planetary and universal levels, based on the concept of the Transpersonal Caring Relationship as fundamental to enabling caring and healing from a universal perspective.[22] In this respect, Watson takes up contributions that renowned academics have made to the definition of Self, such as the work of Carl Rogers, and also uses Mumford's notion of the human center as a basis for developing the concept of the transpersonal process.[17] Her ideas about transpersonal caring also relate to the meaning of that term in transpersonal psychology, as inspired by Lazarus to expand the field of meaning associated with a one-on-one caring relationship.[22] Other ideas about transpersonal caring have been

promoted by phenomenology, sociology, philosophy and psychology through works by Kierkegaard that were initially circulated in 1846 and published in 1941, by Whitehead in 1953, Chardin in 1967, Giorgi in 1970, Taylor in 1974, Gadow in 1980 and 1984 and Zukav in 1990.[23]

Zen philosophy contributions, with representatives such as the master Thich Nhat Hanh also support Watson. She connects them with caring science by emphasizing two central qualities of compassionate knowledge: an intentional presence and the alleviation of suffering according to the Buddhist view of compassion, not as a religious matter but as a human concern that is essential for our peace and human survival.[2] According to the Buddha, compassion gives us the means to face and overcome the suffering we experience and find in the world.[2]
Continuing with this historical recounting of the concept of transpersonal relationship, it is crucial to recognize that nursing is close to human caring since, in everyday practice, it approximates this human experience. As Hanh states,[3] this is inevitable and unavoidable in people's lives. Buddhism teaches that we should not despair when faced with suffering in our daily lives and the world around us, as is mentioned by this Buddhist quote: "If you want to grow a vegetable garden, you have to bend down and touch the earth."[2] Likewise, we should "touch our suffering, embrace it and make peace with it".[2]

According to Watson, the challenge of finding new meaning in human suffering is not only the entirety of our task as humans, but it is a professional task in the sense that for a caring-healing practitioner/scientist, the patient and the nursing professional intertwine. Furthermore, the more we search for new understandings that deepen our humanity, the more human, compassionate, wise, and healing we become in our work and world.[1] In this way, nurses can know the pain and suffering experienced by their patients because they have touched and known the pain and suffering within themselves. Buddhism has said that practicing reflexive compassion creates "constructive karma"[2] that subsequently affects the well-being of others. Thus, we become a conduit for the human struggle through anatman and empathy until humanity is revealed to all of humanity.[2]

Following what was mentioned previously, Watson recognizes that Caring Science stems from a relational-unitary ontology with the premise that we are all connected and belong to the source, to the universal spiritual field of infinity. This fact clearly shows the connection among all moments in life —such as change, sickness, suffering and the death of loved ones— and in all this, the importance of intentional consciousness, which, along with beauty and peace, become "fundamental elements in human caring" that help to align mind, body, spirit, and integrality. As health and caring-healing professionals, our task is to realize that in our scientific and nursing worlds, our work and jobs have been too narrow for the profoundly human nature of the work we face in our caring-healing relations with Self, others, and our universe.[1] In her writings, Watson highlights the legacy and history of Florence Nightingale and her practical approach to knowledge —a historical example that still reinforces modern nursing. Her example demonstrates the paradoxical integration of subjective and objective, the connection of accurate data and subjective views, a personal sense of vocation for her mission, and the outer world's work that transcended all the objectivist logic of her era.[1] This paradigm shift, initially proposed by Nightingale and taken up again by Watson, cites concepts by Palmer, who says that excellent knowledge and great learning should not be done merely in objective terms.[1,24] He mentioned that the mythology of objectivism instead involves "power and control over the world or others; that is, it is more of a mythology of power than a real epistemology that reflects how real knowledge operates." In this way, perpetuating this mythology of objectivism does not help us to see that "all epistemology becomes an ethic"[24] and affects how we value and see the different phenomena in our world.[1]

Despite the pursuit to integrate objective and subjective paradigms, the objective paradigm predominates, as shown by expressions of dehumanized care. Furthermore, while loving-kindness and compassion are considered the cornerstones of nursing practice, certain deficiencies in providing compassionate nursing care can be seen, reflected by the health services offered to the public, not only by service providers but also by policymakers and academics.[25] The concept of transpersonal relationships, as developed in this chapter, though not original or unique to nursing, stems from the evolution of Watson's thinking and her interaction with the world. Several disciplines and theories feed it, and it has become one of the most essential and central concepts in caring science theory.

The transpersonal relationship in caring science theory

In the theoretical proposal of the Caring Science, Watson presents transpersonal caring transactions as those behaviours and scientific, professional, ethical, aesthetic, creative and personalized giving-receiving responses between two people, that is, between the nurse and another, which facilitates contact between the intersubjective worlds that they experience through the physical, mental, or spiritual world.[23] Watson concludes that it is essential to emphasize the artistic pattern of the transpersonal caring relationship, shown through three aspects. First of all, it is a means of communication and the release of human feelings, which make it possible to progress towards the harmony of spiritual evolution; secondly, it is progressing towards feelings that are more pleasurable to the human being; and thirdly, it is a form of touching the soul, of feeling the emotion and union with the other person.[23,26]

Three dimensions describe the concept of the Transpersonal Caring Relationship: Self, the phenomenal field and intersubjectivity. Self is transpersonal-mind-body-spirit oneness. It is composed of perceptions with the characteristics of "I" or "my" and perceptions of how "I" or "my" relate to others and various aspects of life. It involves the Self just as it is, the ideal Self that a person would like to be and the spiritual Self. The phenomenal field is the totality of the human experience within the framework of an individual's world, where the subjective reality of the person determines perceptions and responses in given situations, together with objective conditions or external reality. The transpersonal caring field resides within a unitary consciousness and energy field that transcends time, space, and the physical dimension, and it manifests as the unity of the mind-body-spirit-nature universe.[27] Lastly, Transpersonal Intersubjectivity refers to a relationship in which the person who provides care affects and is affected by the Other. Both are fully present in the moment and feel they are one. They share a phenomenal field that becomes part of their life stories and are co-participants in becoming —now and in the future. This concern for the inner life world and the subjective meaning of the other is fully present.[22] Those three dimensions are considered integral to human caring. They begin when the nurse enters the vital space or "phenomenal field of the other person" and can connect with the being of the other person (spirit, soul), feeling it and responding to it in a way that provides the opportunity for the other person to express the subjective feelings and thoughts that they have stored away. That is where the intersubjective connection occurs between nurse and patient and becomes the total "caring moment." In other words, it makes it possible to connect with the unique life stories and phenomenal fields that are transferred from person to person.[1,17,28]

The key aspects of Human Caring theory are relational caring with a values-based ethical-moral-philosophical foundation; the ten Caritas Processes as the core of caring; Caring as human consciousness-energy-intentionality-presence, Caring-Healing Modalities; and the Caring Field-Transpersonal Caring Moment.[21] Therefore, exploring the conceptualization of that Caring Moment in more depth is essential. Watson stated

that the "caring moment" becomes transpersonal when the nurse and the patient join their life stories and phenomenal fields and become one focal point in space and time, revolving in a more profound and more complex pattern of life.[23,26] In addition, the caring moment makes it possible to overcome the nurse's controlling ego, allowing oneself to be guided by compassion in the present and open up to the other through a genuine connection. In that fullness of the present moment, the nurse can "read" the field and go beyond the patient's outer appearance and human responses, thereby seeing and connecting with the spirit of the other.

As a result, this connection between one human being and another enables compassion and caring to expand. It honours the humanity of the other and prevents reducing the other to a passive object.[21] As Thich Nhat Hanh says, we will always be continually training if we practice this understanding and accept others with their vulnerabilities and suffering. We will learn to transform that suffering into hope, love, and deep compassion (Thich Nhat Hanh 2003), which, as Watson states, is already in our hearts and minds, waiting for us to enter this new place of the consciousness and stay there to transform suffering at the deepest level of life.[1] The literature on this topic has described behaviours and certain practical aspects—such as humanized, loving, and compassionate caring moments and times— from different professional performance scenarios in clinical, community areas, and teaching and learning. Moreover, patients and caregivers easily identify the qualities that characterize it and aspects of teaching that analyze whether the education professionals receive is adequate for developing these competencies.[28,29]

Most studies describe compassionate and loving care as the search to connect with patients with needs and suffering experiences. It is also described as giving or having[28,29] and conveying clinical information promptly.[15] Compassionate caring is not a static event; it develops and manifests throughout the hospital stay, becoming more apparent as more visits occur and familiarity with patients grows. The authors of those studies recognize that compassionate health care is a dynamic process that takes place throughout the nursing relationship, highlighting the importance of specific compassionate health care moments while also showing that time limitations do not always offer the opportunity to express compassion outside of situational moments.[28] Investigations on the concept of Transpersonal Caring Relationships have analyzed caring communication patterns and identified six key elements of communication that support transpersonal caring: being fully present, recognizing the humanity of the human being and treating them as an individual, asking questions and offering clarification frequently, showing flexibility and indicating opportunities while also recognizing challenges.[9]

Various studies have also identified specific relational abilities essential for providing compassionate care, such as getting to know patients, feeling suffering, identifying with them, liking them, and showing respect.[15,28,30] In addition, a compassionate relationship is marked by offering a genuine sense of caring and being willing to provide support. Both patients and health care staff describe a distinct mark of compassionate caring as treating the patient as a person with individual needs. [15,28,31] This approach involves respecting them for their individuality and their unique situation and respecting and recognizing their beliefs and desires.[32] Participants in several studies have illustrated that loving-kindness and compassion are shown when doctors and nurses put themselves in the patient's shoes and act out of interest in the other first and foremost.[29,33]

Some studies also report that compassion is primarily conveyed through attentive, attuned, and conscious listening factors.[2,29-30,34] Clinical descriptors include feeling or being aware of the patient's suffering[30,34] and non-verbal expressions such as the effective use of silence, listening, posture, tone of voice, visual contact and smiling, which convey a sense of recognition

and understanding.[35] In addition, clarifying or explaining information about the health status of patients and encouraging patients to share their views and feelings about their medical progress have also been mentioned.[32] Breneol et al.[36] analyzed the development of a caring relationship between nurses and children who depended on hemodialysis technology. They found that developing a supportive and trusting relationship can overcome barriers to human caring. In addition, parents who expressed the need for better quality care in the hospital environment identified factors such as the need to be heard and supported, the importance of speaking positive and negative feelings and teachings on transpersonal caring. Some negative aspects identified as inhibitors of compassionate communication are a lack of respect and concern for the other, hostility towards the patient, a judgmental attitude, pity, and incorrect assumptions. In contrast, the patient's caregivers and their families perceive compassion and loving-kindness through qualities such as being present, respect, dignity, kindness and perseverance. In addition, they identify the virtues of caring as honesty, justice, compromise, and the valuable role of compassion at the time of grief.[10,31,37] Other authors have explored cultivating loving-kindness with oneself to mitigate the stress of working with people deprived of their freedom.

Nurses identify compassion as a skill in their educational process, although they feel ill-prepared to provide compassionate care when transitioning to clinical practice.[38] Nurses identify compassion as a skill in their education process; however, they feel inadequately equipped to provide compassionate care once they transition into clinical practice.[38] Considering that experiences in the practice environment significantly affect the nursing student's confidence in incorporating compassion into caring,[10] it is crucial to remember that compassion can be taught through training by developing and fostering micro-practices that develop and strengthen over time.[10,28,30,39]

Development of the concept of Transpersonal Caritas Relationships

The present article describes the construct of the Transpersonal Caring Relationship. In this article, we reveal the construct of the Caritas Transpersonal Relationship. Watson developed this concept based on practical experiences implementing caring science in different healthcare settings. It is also the foundation for Watson's Caritas instruments for patients, leaders, colleagues and self-care. When working to validate these instruments, we have found that it is indispensable to have conceptual clarity about the construct and, based on that work, to support nurses, academics and researchers who want to measure the implementation of the theory in different care settings by measuring the Transpersonal Caritas Relationship. Thus, the concept has evolved from a transpersonal caring relationship to a Transpersonal Caritas Relationship, considering that the word Caritas is closer to the practice by nurses who provide care with the theoretical foundation of caring science. As mentioned earlier, Caritas processes® are the core and basis of caring science theory.[1] These are key nursing processes in the theory's structural core. They provide a universal language for human caring and a basis for the theoretical and philosophical framework.

"Caritas" means to harbour hope, appreciate, and offer special or loving attention with charity, compassion, and a generous spirit. Caritas processes® provides a set of guiding principles and language for creating and participating in healthcare relationships and settings with patients, along with the technological and clinical knowledge each nurse offers to the person and their professional practice.[1] To grow in both physical and non-physical dimensions of human caring, a wide range of artistic, aesthetic, spiritual, empirical, political, and ethical forms of knowledge is promoted to achieve a higher level of human connection with the patient.[1] The assumptions of the Transpersonal Caritas Relationship are a

Caritas consciousness, a moral commitment and intentionality on the part of the nurse to protect, improve and potentiate human dignity, integrity, and healing, where a person creates or co-creates one's meaning of existing, living and dying.[1]

The Transpersonal Caritas Relationship is based on the nurse's intentionality and consciousness that affirms the person's subjective spiritual significance while seeking to continue to care amid a threat and despair. This relationship manifests through the harmony and unity of mind, body and spirit, through a relationship of support, love, compassion and trust between the receiver and giver of care. Intentional presence is defined as a conscious and altruistic choice born from moral virtue and disinterest. It aims to act reflexively, empathetically and in a humanistic manner that honours and gives meaning to each person's uniqueness and the caring-healing-nurse-patient interaction. The nurse who responds to the patient's needs with loving-kindness to alleviate a real or perceived threat to personal integrity alleviates suffering. This response requires integrating scientific and humanistic paradigms, both essential to caring.[2]

It is also important to mention that the Transpersonal Caritas Relationship honours the I-You relationship instead of an I-That relationship. It is a communication method that stems from a mutual understanding and desire between the caregiver and the care receiver. The nurse seeks to recognize, detect, and connect with the inner condition of the other's spirit through a compassionate and genuine presence centred on the caring moment. In response to the patient's suffering, they connect to inherent qualities through recognition, commitment and action. The Transpersonal Caritas Relationship is determined mainly by its fundamental attributes, nurturing or eroding in clinical and educational settings.[10] It is also worth highlighting that the connection established during the Transpersonal Caritas Relationship is achieved through actions, words, behaviours, cognition, body language, feelings, intuition, thoughts, senses, and the energy field. The nurse shows the ability to connect with another person at this spiritual, transpersonal level through movements, gestures, facial expressions, touch, sound, verbal expressions, procedures, information, and other means of communication, including scientific, technical, aesthetic and human, which transform into art or acts of human caring or modalities of intentional caring-healing.[26]

Caring-healing modalities in the Transpersonal Caritas Consciousness improve the harmony, integrity and unity of the being and release blocked energy that interferes with natural healing processes. The nurse guides the other towards accessing their inner healer by helping them relate correctly with their spiritual source through self-care, self-knowledge, self-control and self-healing.[17] Under this construct, the nurse's professional development and their spiritual practice enable them to enter a deeper level of professional healing practice, which facilitates their evolution and their awakening to the transpersonal condition of the world, as well as their becoming a Nurse Caritas who cares, who maintains a Transpersonal Caritas relationship with themselves and others.

In contrast to what has been mentioned, it is crucial to recognize that nursing faces multiple obstacles to achieving a transpersonal caring relationship while giving care, such as exhaustion, external distractions, difficult patients or families and complex clinical situations.[40] As a result, it is vital to keep in mind that if loving-kindness and compassion are considered to be essential to developing professional identity, and working with powerful emotions and experiences broadens personal consciousness, then developing an environment that contributes to empowering and fostering resilience is a priority for developing and maintaining compassion. Furthermore, models that can be followed and a corporative team spirit are needed to train nurses in compassionate behaviour.[41] This need for training is the main reason why opportunities for self-reflection should be fostered in the field of education, with empathetic professors who can evaluate students and help them take

responsibility for compassionate caring and who can create teaching environments that emphasize competencies based on the approach of working with the emotions and related knowledge.[42]

Some educational interventions for incorporating loving-kindness and compassion in the clinical setting involve the health professional and the patient producing artistic expressions such as music, theatre, literature, and expressive writing. In addition, clinical simulations improve training, engaging in reflexive practices for improving self-awareness, training in communication skills, participating in institutional activities that increase work satisfaction and enhancing competencies in providing care.[42] In clinical areas where the critical patient is treated, behaviour by health staff can help patients and their families feel supported through positive behaviours, which can contribute to effective mental health and recovery outcomes and trust in the health care team.[43-44] Since age can be a factor in exercising compassionate caring, it is essential to design strategies for the healthcare staff to develop this aspect. For example, the study by Basile found that younger nurses were perceived as more compassionate than older nurses.[43] Lastly, as mentioned earlier, this Transpersonal Caritas Relationship construct comes alive in nurses' daily practice, theoretically grounded in caring science. It seeks to make its premises evident within the reality of the environments in which nurses establish relationships with themselves, the patient, their colleagues, the environment and the universe.

Discussion

Watson has shown the philosophical evolution of her concepts over time. The article herein proposes a conceptual paradigm that describes and reconsiders the Transpersonal Caring Relationship construct in terms of the concept of Caritas, which means to harbour hope, appreciate and offer unique or loving care with charity, compassion, and generosity of spirit. The investigation becomes a challenge, due to which the effectiveness of different strategies for improving the evolutional level of the Transpersonal Caritas Relationship in caring for people continue to be evaluated in various settings, including educational, clinical and community.

During these times, when human nature is facing a pandemic that has brought about abrupt changes in lifestyles and brought us closer to illness, death, and collective suffering, it is imperative to employ a philosophical nursing framework based on the transpersonal relationship in which loving-kindness and compassion are the focus of healthcare. In addition, the caring science approach could mark a turning point amid the progressive loss of sensitivity to humanism that has resulted from the predominance of the scientific-technical paradigm, levels of evidence, order, prediction, control, methods, generalization, separation and objectivity.[11] This debate between scientific-technical versus transpersonal is accompanied by numerous barriers that have been identified related to a health system that reduces the potential for loving-kindness and compassion when caring for patients due to the lack of time, support, staff, and resources.[13-15,45] Similarly, a "production line" mentality exists[13] in which the economic approach considers administrative functions such as paperwork, litigation, metrics, and efficiency to be primordial, which distances clinicians from the patient's bedside where the transpersonal relationship can be more easily experienced. Additional barriers include a negative organizational and work culture with resistance to change and entrenched opinions and attitudes on the part of the staff. [30,38-39,45]

With the approaches presented herein, this article introduces a transitional adaptation from the concept of the transpersonal relationship to the transpersonal Caritas relationship, which is the basis for Evolved Caritas Nursing. This evolved concept recognizes that the mutuality of caring affects the universal field to which we all belong and that the Caritas consciousness and actions affect the energy field that is present

when the nurse relates to the other, enabling the compassionate heart to awaken, permitting nurses of the new era to access their spiritual nature and that of each person, and to connect with the source of universal love. In this way, they evolve into the Caritas consciousness, making it possible to recognize the other with loving-kindness in the practice of caring.

To conclude, the poem cited by Watson in her "Unitary Caring Science: The Philosophy and Praxis of Nursing," published in 2018,[1] invites us to reflect on the pursuit of inner growth: "While from the bounded level of our mind. Short views we take, nor see the lengths behind, but more advanced, behold with strange surprise. New distant scenes of endless science rise! ".. Alexander Pope.

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Nursing Sensitive Outcomes evaluation in the Emergency Department: An Umbrella Review

Review

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Nursing Sensitive Outcomes evaluation in the Emergency Department: An Umbrella Review

Abstract

Objective. The aim of this review was to identify reported nursing-sensitive outcomes in the Emergency Department to date. **Methods.** An Umbrella review was conducted. Four databases, CINAHL, Pubmed, Web of Science and Scopus, were searched from inception until October 2022. MeSH terms were: "nursing", "sensitivity and specificity", "emergency service, hospital", "nursing care". Two reviewers independently screened studies against the inclusion criteria for eligibility, extracted data and assessed study quality with the SIGN tool. Results of the included studies were summarized and described in themes for narrative analysis. The study was enrolled in the PROSPERO registry (CRD42022376941) and PRISMA guidelines were followed. **Results.** The search strategy yielded 2289 records. After duplicate removal, title, abstract and full-text eligibility screening, nine systematic

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reviews were included in the review. A total of 35 nursing-sensitive outcomes were reported. The most described outcomes were waiting times, patient satisfaction and time to treatment. The less measured were mortality, left without being seen and physical function. Synthesizing nursing-sensitive outcomes in themes for reporting, the most measured outcomes were within the safety domain (*n=20*), followed by the clinical (*n=9*), perceptual (*n=5*) and the least explored functional domain (*n=1*). **Conclusion.** Nursing sensitive outcomes research in emergency nursing practice is a conceptual challenge still in its early stage. Several nursing-sensitive outcomes were identified in this review that can evaluate the contribution of emergency department nursing care to patient outcomes. Further research is required to explore patient outcomes sensitive to emergency nursing care.

Descriptors: standardized nursing terminology; emergency nursing; nursing care; emergency service, hospital.

Evaluación de resultados sensibles de Enfermería en el Servicio de urgencias. Revisión de alcance

Resumen

Objetivo. Identificar los resultados sensibles de enfermería reportados en los Servicios de Urgencias. **Métodos.** Se realizó una revisión general. Se hicieron búsquedas en cuatro bases de datos, CINAHL, Pubmed, Web of Science y Scopus, desde su inicio hasta octubre de 2022. Los términos MeSH empleados fueron: "nursing", "sensitivity and specificity", "emergency service, hospital", "nursing care". Dos revisores examinaron de forma independiente los estudios en función de los criterios de inclusión para determinar su elegibilidad, extrajeron los datos y evaluaron la calidad de los estudios con la herramienta SIGN. Los resultados de los estudios incluidos se resumieron y describieron en temas para el análisis narrativo. El estudio se inscribió en el registro PROSPERO (CRD42022376941) y se siguieron las directrices PRISMA. **Resultados**. La estrategia de búsqueda produjo 2289 registros. Tras la eliminación de duplicados y el cribado de elegibilidad de título, resumen y texto completo, se incluyeron en la revisión nueve revisiones sistemáticas. Se informó de un total de 35 resultados sensibles a la enfermería. Los resultados más descritos fueron los: tiempos de espera, la satisfacción del paciente y el tiempo hasta el tratamiento. Los menos medidos fueron la mortalidad, el tiempo sin ser evaluado y la función física. Sintetizando los resultados sensibles a la enfermería en temas para la notificación, los resultados más medidos estaban dentro del dominio de la seguridad (*n*=20), seguidos por el clínico *(n*=9), el perceptivo (*n*=5) y el dominio funcional menos explorado

(*n=1*). **Conclusión.** En esta revisión se identificaron varios resultados sensibles a la enfermería que pueden evaluar la contribución de los cuidados de enfermería en los servicios de urgencias a los resultados de los pacientes. La investigación de resultados sensibles a la enfermería en la práctica de la enfermería de urgencias es un reto conceptual que aún se encuentra en su fase inicial.

Descriptores: terminología normalizada de enfermería; enfermería de urgencia; atención de enfermería; servicio de urgencia en hospital.

Avaliação de resultados de enfermagem sensíveis no pronto-socorro. Revisão do escopo.

Objetivo. Identificar resultados de enfermagem sensíveis notificados em Serviços de Emergência. **Métodos.** Foi realizada uma revisão geral. Foram pesquisadas quatro bases de dados: CINAHL, Pubmed, Web of Science e Scopus, desde a sua criação até outubro de 2022. Os termos MeSH utilizados foram: "enfermagem", "sensibilidade e especificidade", "serviço de emergência, hospital", "cuidados de enfermagem". Dois revisores selecionaram independentemente os estudos em relação aos critérios de inclusão para determinar a elegibilidade, extraíram os dados e avaliaram a qualidade do estudo com a ferramenta SIGN. Os resultados dos estudos incluídos foram resumidos e descritos em temas para análise narrativa. O estudo foi registrado no registro PROSPERO (CRD42022376941) e as diretrizes PRISMA foram seguidas. **Resultados.** A estratégia de busca produziu 2.289 registros. Após remoção das duplicatas e triagem do título, resumo e texto completo para elegibilidade, nove revisões sistemáticas foram incluídas neste estudo. Foram relatados 35 resultados de enfermagem sensíveis, sendo os mais descritos: tempo de espera, satisfação do paciente e tempo para tratamento. Os menos frequentes foram: mortalidade, tempo sem avaliação e função física. Sintetizando os resultados sensíveis à enfermagem por meio de tópicos de relato, os mais mensurados foram dentro do domínio segurança (*n=20*), seguido do domínio clínico (*n=9*), do perceptual (*n=5*) e do funcional. menos explorados (*n=1*). **Conclusão.** Esta revisão identificou vários resultados sensíveis à enfermagem que podem avaliar a contribuição dos cuidados de enfermagem nos serviços de urgências para os resultados dos pacientes. A investigação de resultados sensíveis na prática de enfermagem em emergências é um desafio conceitual que ainda está em fase inicial.

Descritores: terminologia padronizada em enfermagem; enfermagem em emergencia; cuidados de enfermagem; serviço hospitalar de emergência.

Introduction

Resource constraints driven health service reforms[1-4] and strategies to improve safety and quality of patient care.[2,4,5] These are a high priority for health care systems worldwide.[2,3,5] The demand for professional,[1,4-6] and budgetary[7,8] accountability within healthcare, imposes nurses and nursing managers to provide evidence of nursing care quality[1,4,6] and to implement appropriate strategies. Nurses embody the largest professional component in hospital settings[1,5,9,10] and are present at all levels of the healthcare system.[1,5,7,9] Nurses deliver most direct care to patients 24 hours a day[1,7,9], with their actions having a major impact on patients' outcomes.[5,9] As nurses also account for a considerable fraction of hospitals' operating costs,[1-3] it becomes mandatory to be able to measure and demonstrate their peculiar contribution to patient outcomes.[1,8,11,12]

Emergency Departments (EDs) are a unique,[13] dynamic, nurse-driven and high-paced environment, with no control over patient volume or severity.[14] Nurses are the first professionals to assess and start treatment according to guidelines for all patients entering the ED.[13-15] In the last decades, increasing demands,[13,16,17] the ageing population,[17] overcrowding[13] and boarding[16] have put a strain on ED nurses. They are challenged daily in delivering life-saving patient-centered and evidence-based care, in a timely, safe, equal and effective manner.[12,16] The extended scope of practice of ED nurses[13,15,16] is to meet service demands,[13] calls ED nurses' awareness and accountability for provided care. Conversely, the effectiveness of nursing care on patient outcomes is still invisible to healthcare executives,[1,5,7,14,16] patients, public opinion and other healthcare professionals.[18] Lastly, nursing care impact is not represented in healthcare performance databases.[1,4,5,7]

Nursing Sensitive Outcomes (NSOs) or nursing sensitive indicators[4,8,11] are metrics that reflect nursing care quality[6,10,14] and express the contribution of nursing to patient outcomes.[2,6,11] NSOs are the criteria for health status changes that can be directly[14] or indirectly[8] affected by nursing care. Therefore, NSOs are outcomes relevant and based upon nurses' scope and domain of practice, where evidence has linked nursing inputs or interventions with patient outcomes.[7,9,19, 20] Several countries developed national or regional nursing outcomes database registries,[1,4-6,8-10,12,19] that focus on the impact of nursing care in hospital settings,[8,9] to support evidence-based healthcare practice[4,5] with Structure-Process-Outcome indicators.[5,8] Thus, NSOs measurement can empower benchmark performance,[4-,6,9,12,19] evaluate and improve effectiveness of nursing interventions[4,7,9] and can provide feedback about areas in need of improvement to nursing executives and policymakers.[5,7,9,10] NSOs have been identified in various acute care settings,[4,6,21,22)] but there is a lack of specific outcomes that express the wide scope of ED nursing care.[14] Moreover, outcomes suitable in certain

settings may not be appropriate for the ED context.[22] The overall aim of this review, was to explore available evidence on NSOs research in the ED, to identify which patient outcomes sensitive to nursing care are reported in this setting. The review question for this study was: *"What nursing-sensitive outcomes can we assess in the Emergency Department?"* In response to the research question, an umbrella review was undertaken to summarise all evidence from multiple systematic reviews consistently. A review of systematic reviews enables a comprehensive understanding of existing research on NSOs measured in the ED to this point.

Methods

Identification of relevant studies. Prior to starting the review, a research protocol was developed and the Prospero register was checked to determine whether similar reviews were already performed or underway. There were no studies exploring NSOs measuring in the ED at the time of consultation. A search strategy was designed. The research protocol for the current umbrella review was documented in the PROSPERO registry (CRD42022376941). The umbrella review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[23] CINAHL, PubMed, Scopus, and Web of Sciences databases were explored from inception until October 2022, to ensure all relevant studies were captured. Searching terms were based on elements identified in the research question, combining free text and Boolean terms. Searching terms were adapted for each database interface. Key search concepts were: *"nursing sensitive outcomes", "emergency department" and "nursing care"*. Retrieval was limited to systematic reviews written in English or Italian concerning the ED adult population.

Study selection and Eligibility criteria. Systematic reviews were selected for inclusion, only when they met the following Population, Intervention or Exposure, Comparator, Outcome, Study design (PI[C]OS) criteria: (a) Population: adult patients (> 18 years) admitted to the ED receiving nursing care (b) Intervention: nursing care or interventions provided in the ED (c) Outcome: any evidence on the association between emergency nursing care and the evaluation of NSOs (d) Study design: studies with a systematic review design. Thus, papers were excluded when (a) concerning the paediatric population (< 18 years) (b) they were not relevant to the research question (c) focusing on settings other than the ED (d) and without a systematic research design. Search results were collected into the Zotero reference manager and duplicates were removed. Titles and abstracts were independently screened by two authors against the inclusion criteria. Two reviewers independently assessed the full text articles for eligibility against the PI(C)OS criteria and final review inclusion. Any disagreement, at each screening stage, was solved through consensus of a third reviewer. The comprehensive screening process is reported in the PRISMA flow chart in Figure 1.

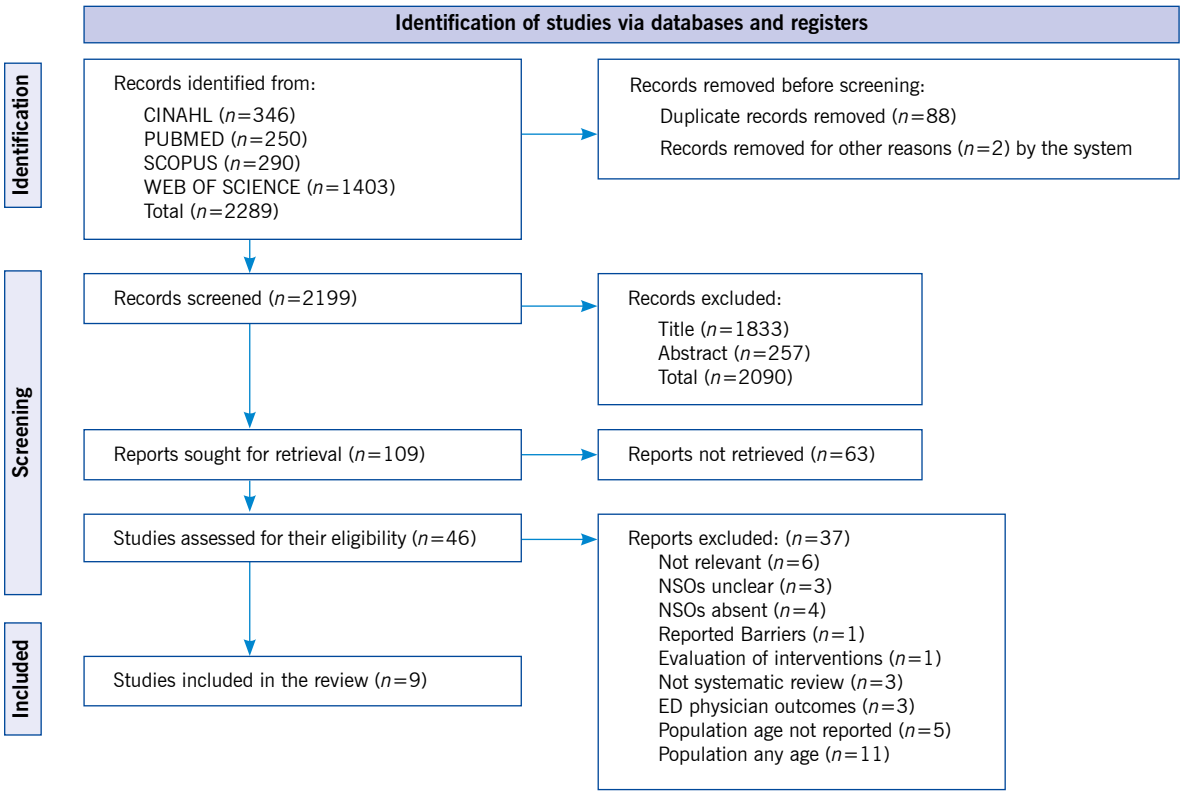

Figure 1. PRISMA Flow Chart study selection and screening process[23]

Protocol deviation. Due to the heterogeneity found in the selected studies when outlining the adult population criteria, the review inclusion criteria for the population (>18 years) was adopted. Any review reporting and stating adults as an inclusion criterion were included. In studies contemporarily investigating adult and paediatric populations, only adult data were considered for evaluation.

Data extraction. Two authors independently conducted data extraction from each study using a pre-customized spreadsheet. Study characteristics included: First author and year, title, study design, rating of quality, objective, results and NSOs measured. Extracted data were summarised and synthesised for narrative and descriptive analysis. Disagreements among reviewers were resolved by consensus involving a third reviewer.

Quality Assessment. Methodological quality of the systematic reviews was assessed independently by two researchers using the SIGN Checklist for Systematic Reviews and Meta-Analyses developed by Healthcare Improvement Scotland.[24] The SIGN tool consists of 12 questions for assessing study integrity and 2 questions for overall assessment. Each question is answered with the options yes or no, and when appropriate can't say or not applicable. Two reviewers independently assessed the methodological quality of the included studies. A study quality score was calculated for each included study (low, moderate, or high quality), and was displayed in the extraction Table 1. Any discrepancies during the quality assessment were resolved by discussion and consensus by a third reviewer.

Results

The search strategy yielded 2289 records. After removing duplicates, titles and abstracts (*n=2199*) were screened. Full texts of 46 remaining reviews were assessed for eligibility. Finally, nine studies were included in the umbrella review. Included studies were published between 2007 and 2021. Full details and characteristics of the included studies are presented in Table 1. Studies originated from Ireland (*n=1*), Sweden (*n=1*), Canada (*n=1*), and Australia (*n=6*) being the most cited country. Study samples from systemic reviews (*n=167*) ranged from four[25] to thirty six.[26] All nine included studies were systematic reviews of which one performed meta-analysis of RCT,[25] and two[27,28] also performed meta-analysis for results. While four studies could not accomplish meta-analysis due to limited data[29] or heterogeneity of studies.[30-32] The reviews evaluated topics related to nurse-initiated interventions (*n=3*), triage (*n=2*), discharge management (*n=2*) and the impact of Nurse Practitioners (*n=2*). The nine included systematic reviews reported a total of 35 nursing-sensitive outcomes (Table 1). The most studied nurse-sensitive outcome was waiting time (*n=5*) followed by patient satisfaction (*n=4*), LOS (*n=3*), and time to analgesia (*n=2*). The least investigated outcomes, each reported in one study, were physical function, mortality and left without being seen (LWBS).

The nine systematic reviews underwent methodological quality assessment using the SIGN tool and were rated from high,[25,27,28,32,33] acceptable[26,29,30,31] to low.[32] Comprehensive literature search was performed by all reviews. One study had a registered protocol prior to beginning the review.[31] Several studies (*n=4*) needed to be clarified about the selection of studies in duplicate, while one acknowledged this shortage.[32] All studies conducted data extraction with two authors and the characteristics of included studies were outlined in a table. One study did not list the reasons for study exclusions.[33] All included reviews used a wide variety of study quality assessment tools. Two reviews declared receiving partly resource funding for the research.[25,31]

Table 1. Description of the included studies.

N°	Authors and year	Title	Study Design	SIGN Quality Rating	Objective	Results	Nursing Sensitive Outcomes (NSOs)
1	Burgess *et al.*, 2021	The effectiveness of nurse-initiated interventions in the Emergency Department: a systematic review	Systematic Review	High	To determinate the effectiveness of nurse-initiated interventions on patient outcomes in the Emergency Department	Twenty-six studies were included, nine RTC and seventeen quasi-experimental designs. Nurse interventions may facilitate progression of care in the emergency department and have the potential to improve time-to-treatments and decrease hospital admission rates.	Time-to-treatment Pain level score Symptom relief Inpatient admission
2	Caliban *et al.*, 2017	A systematic review of the impact of nurse-initiated medications in the emergency department	Systematic Review	High	To evaluate the effects of nurse-initiated medications (NIM) in the emergency department and to quantify the impact of the practice on quality care indicators.	Five experimental studies were included. Nurse medications are safe and beneficial for emergency department patients.	Safety Timeliness Effectiveness Equitability Patient-centered care Efficiency

Table 1. Description of the included studies. (Cont.)

N°	Authors and year	Title	Study Design	SIGN Quality Rating	Objective	Results	Nursing Sensitive Outcomes (NSOs)
3	Carter *et al.*, 2007	A systematic review of the impact of nurse practitioners on cost, quality of care, satisfaction and wait times in the emergency	Systematic Review	Low	To evaluate the emergency setting, by looking specifically at four keys outcomes measures: wait time, patient satisfaction, quality of care and cost-effectiveness.	36 articles were included. The results of this review suggest that the addition of a staff member dedicated to seeing minor treatment patients will improve wait times for these patients as well as improve patient satisfaction, with little or no impact on quality care.	Cost Quality Satisfaction Wait time
4	Corkery *et al.*, 2021	What is the impact of team of triage as an intervention on waiting times in an adult emergency department? A systematic review	Systematic Review	Acceptable	To identify the impact of Team Triage (TT) on waiting time (WT) in adult emergency departments	12 studies were covered. four RCTs, four cohort studies and four quasi-experimental. Waiting times are improved with team triage and can enhance patient satisfaction, LWBS and mortality rates.	Waiting times
5	Dermody *et al.*, 2020	The effectiveness of pictorial discharge advice versus standard advice following discharge from the ED: a systematic review and meta-analysis	Systematic Review and Meta-Analysis	High	To determinate the effectiveness of pictorial discharge advice compared with standard discharge advice in the emergency department.	Four studies were included. This review supports the use of pictorial discharge advice, especially for increased comprehension and compliance with discharge advice.	Comprehension Compliance Patient satisfaction ED reattendance
6	Elliot *et al.*, 2021	Interventions for the discharge of older people to their home from the emergency department: a systematic review	Systematic Review	Acceptable	To evaluate the effectiveness of discharge interventions used for older people from the emergency department (ED) to their homes in the community by emergency clinicians.	Twenty-five studies met the inclusion criteria, thirteen RCTs and twelve quasi-experimental. Discharge interventions from the ED for older people are harmless and can be useful, but their effectiveness has yet to be proven in RCT studies.	Mortality ED representation after the index visit Physical function
7	Jennings *et al.*, 2015	The impact of nurse practitioner services on cost, quality of care, satisfaction and waiting times in the emergency department: a systematic review	Systematic Review	Acceptable	To establish the impact of nurse practitioner services on cost, quality of care, satisfaction and waiting times in the emergency department for adult patients.	Fourteen studies were covered, two systematic reviews, two quasi-RCTs and ten observational descriptive design studies. Emergency nurse practitioner services have a positive effect on quality of care, patient satisfaction and waiting times in the emergency department. Evidence on outcomes of cost-benefit analysis needs to be more comprehensive.	Patient satisfaction Waiting times for care Quality of care Costs
8	Oredsson *et a.l*, 2011	A systematic review of triage-related interventions to improve patient flow in emergency departments	Systematic Review	High	To identify and assess evidence of interventions improving patient flow in emergency departments .	Thirty-three articles were selected, notably RCTs with a control group or in observational studies with historical controls. Fast track reduces LOS and LWBS. Team triage can reduce LOS and LWBS. Limited evidence on the impact of nurse-requested X-rays on patient flow.	Waiting time (for physician assessment) Length of stay (LOS) Left without being seen (LBWS)
9	Varndell *et al.*, 2018	Quality and impact of nurse-initiated analgesia in the emergency department: A systematic review	Systematic Review	High	To examine the quality and impact of nurse-initiated analgesia (NIA) in adult patients presenting with acute pain in the ED.	Twelve studies were included, nine non-experimental and three quasi-experimental design studies. NIA protocols increase the likelihood to receive analgesia, in a safe and timely manner	Time to analgesia Waiting times ED length of stay Change in pain score Patient satisfaction Adverse events.

Reporting NSO results

Findings of the identified NSOs were rationalized for narrative reporting in domains adapting the format used by Danielis et al.[21] NSOs were categorized in four domains (Safety, Clinical, Functional and Perspective) following the Doran outcome classification[34] and based on similarities. The most investigated sequential domains were safety (*n=20*), clinical (*n=9*), and perceptual (*n=5*). The least explored was the functional domain (*n=1*).

Clinical domain

Four studies[25,2728,32] examined the clinical domain, which involves outcomes related to symptom control,[34], goal assessment and monitoring of change in health status concerning patient's illness and recovery in the ED.[21] Pain was the most investigated outcome in studies (*n=3*) and was associated with nurse-initiated interventions. Pain levels were commonly measured using the 11-point numerical rating scale (NRS) or 0–100 mm Visual Assessment Scale (VAS) score and assessed at pre- and post-analgesia administration. Change in pain score or pain relief was described in one review[32] as a > 50% decrease of initial pain level score or percentages of patients with ≥3-point reduction in pain score, within one hour after first analgesic delivery; decrease of > 33% in patient pain score while staying in the ED or < 4 on a 0-10 scale at discharge; a pain level reduction of > 2 points or more and up to < 4 points on a 0–10 scale; effectiveness, described in one review,[28] was accomplished when adequate pain relief, with a 2 point reduction or more to initial pain score, and too mild intensity (<4) was reached at patients discharge. Equitability was established when patients presenting with moderate to severe pain were more liable to receive nurse-initiated analgesia when nurses were allowed to apply this intervention.[28] Symptom relief, was reported in one study[27] and defined as control, resolution or clinical assessment of the symptom using nurse-initiated interventions. One study evaluated outcomes with pictorial discharge instructions compared to standard discharge advice.[25] Compliance was documented using the proportion of daily adherence to wound care instructions. While comprehension of discharge instructions was measured using a four-item questionnaire and discharge advice instructions readability. Quality appraisal of the reviews examining this domain was high.[25,27,28,32] Pooled meta-analysis performed in three studies showed overall poor heterogeneity.[25,27,28] Although one review reported removing one study for influencing heterogeneity and repeated analysis.[25]

Safety domain

This domain relates to unintentional situations linked to the process of care that can lead to undesirable patient outcomes.[21] All of them investigated safety-related outcomes, and these included waiting times (*n=5*), LOS (*n=3*), quality of care (*n=2*), costs (*n=2*), timeliness (*n=1*), time to analgesia (*n=1*), time to treatment (*n=1*), ED reattendance (*n=1*), inpatient admission (*n=1*), ED representation after index visit (*n=1*), safety (*n=1*), adverse events (*n=1*), mortality (*n=1*) and LWBS (*n=1*). Waiting times, were the most reported outcome[26,29,30,32,33] and were measured as the intervening time between ED entrance and physician assessment,[33] using team triage (triage nurse and physician),[30] Rapid Assessment Team (RAT) and fast track streaming processes.[33] Moreover, waiting times were explored in one study using the availability of NIA and the proportion of trained emergency nurses in NIA.[32] Two studies reported wait times in association with the introduction of Nurse Practitioners in the ED, using the UK SEE and Treat model[26] and collaborative models of care (NP and Resident physician) for throughput of ED patients.[29] ED length of stay, the total time spent in the ED,[33] was studied in three reviews[28,32,33] using the efficiency of NIA[28,31] or Nurse Initiated patients, the effect of ED point-of-care laboratory testing and the number of x-rays requested by nurses.[33] The reviews addressing this outcome reported uniform evidence and were ranked high in methodological quality.

Time to analgesia, delivering timely care, depends on the proportion of ED nurses educated in NIA, the availability of analgesia at the time of entrance to ED, and the implementation of NIA protocols or policies.[32] Timelessness[28] or time to analgesia, decreasing waits and unsafe delays at times for both the provider and receiver of care, was reported in one study and measured from arrival time in triage to first analgesic; heterogeneity of findings was significant and need to be inferred with caution.

Time to treatment[27] was investigated in one study and measured in minutes or hours; meta-analysis was not performed as variations in treatment protocols and analgesic type were high.[27] Inpatient admission was evaluated using patient admission rates as a result of treatment nurse-initiated.[27] ED Reattendance[25] within 28 days was included in one review but was not measured by the included studies. Moreover, ED Representations after index visit[31] in elderly patients receiving personalized health assessments and ED discharge interventions were documented using the proportion of ED representations within various time points of the ED index visit.

Safety-related to NIM was documented by two reviews[28,32] using the occurrence of adverse events described as reduced consciousness level (GCS < 14), hypoxia < 90-92%, bradypnea < 10-12 b/min, bradycardia < 50-60 b/min, systolic BP < 100 mmHg, or episodes of vomiting and nausea. LWBS, the percentage of ED patients leaving without being seen by a physician, was investigated only in one study[33] using the effect of a triage liaison physician supporting the triage nurse, evaluating ambulance patients, starting diagnostic procedures, and managing administrative issues. Lastly, mortality was reported in one review[31] using various time points of evaluation. Quality of care was reported in two studies [26,29] associated with Emergency NP services effectiveness and was measured using adverse events and health status follow-up as a combination score from patient satisfaction.

Other measures used to define quality of care were unsuitable management of patients, x-ray accuracy interpretation, LWBS, unforeseen or unplanned returns of patients to the ED and rates of missed injuries. Costs as un outcome were measured in two studies,[26,29] and evaluated NPs' capacity to ration recourses by using the management of patients with soft tissue injury and the compliance to clinical decision guidelines (e.g., Ottawa ankle rule, follow-up scheduling) compared with residents.

Functional domain

The functional domain, which is recognized as patients' independence in activities of daily living, physical abilities and psychosocial functioning,[21,34] was investigated only in one review.[31] This systematic review[31] explored the effectiveness of personalized discharge health interventions for elderly ED patients in their homes. Physical function was measured using the Function Measurement Tool [FMT], Older American Resources and Services Scale [OARRS] and the Modified Barthel Index-50 (MBI) score. The methodological quality of the study addressing this outcome was ranked by the SIGN tool as acceptable.

Perspective domain

Five studies[25,26,28,29,32] evaluated the perspective domain, which investigates the experience of the patient with nursing care received in the ED, and embraces the outcomes produced by the ED environment.[21,34] The most investigated outcome was patient satisfaction (*n=4*) followed by patient-centeredness (*n=1*). Patient satisfaction with NP fast-track services and ED care delivery compared to resident physicians was investigated.[26,29] Patient satisfaction was measured using an adapted 11-item Strategic and Clinical Quality Indicators within the Postoperative Pain Management questionnaire; a rating scale (1-10) with a single question to measure patient's satisfaction with NIA during pre- and post-implementation; a six questions patient satisfaction questionnaire. One study [25] reported

patient satisfaction with discharge advice and was defined as the proportion of patient reporting "very satisfied". Patients centeredness in nurse-initiated medications was documented in one study [28] and was assessed as patient satisfaction, using a 10-item questionnaire with a 5-point Likert scale for each item. The quality of studies representing this domain where either acceptable[26,29] or high.[25,28,32]

Discussion

The primary aim of this umbrella review was to assess how patient outcomes sensitive to nursing practice have been monitored in ED up to the present. This resulted in 35 nursing-sensitive outcomes, representing nine systematic reviews published over 2007–2021, that could reflect the quality and safety of nursing care for the ED adult population. Although the search strategy yield several studies (*n=2289*), the small sample of included studies (*n=9*) could be deficient in representing the comprehensive universe of potential ED nursing-sensitive outcomes and nursing practice.[14] This may suggest that NSOs' research for the emergency department setting is still germinal.[1] Furthermore, the quality of evidence was variable (low, acceptable or high). The majority of the studies were conducted in Australia (*n=6*). Hence, when interpreting findings it is essential to take into account the study's geographical area of origin[26] as EDs worldwide may differ in healthcare system, logistics, organizational standards, models of care and ED nursing roles. Several of the included reviews documented the impact of nurse-initiated interventions (*n=3*) and the nurse practitioner role (*n=2*), and their contribution to patients' outcomes. This may illustrate the prevalence of emergency nurses' dependent and interdependent roles[21,34] in current EDs as a result of the extended role and changes in the scope of practice of ED nurses[13,15] in the last two decades.

Outcomes included in the safety domain were the most explored and involve aspects linked to the process of care that can lead to unintentional, undesirable patient outcomes. The focus on safety measures is understood within the intrinsic goals of nursing practice[11] as nurses are accountable for keeping patients safe.[11,13,34] Patient safety is recognized as an important indicator of nursing care with the purpose to prevent errors and adverse events, identifying and reducing the occurrence of potential harm.[1,11] Moreover, research studies often select safety outcomes since data is ready to assess (e.g. hospital administrative data, discharge charts) [34] and in an effort to determine best practices in the ED that can warrant safety for patients.[22] The time-related factor (e.g., waiting times for treatment, care, analgesia or physician and overall time spent in the ED) was the most investigated outcome, a typical and critical ED performance indicator of care effectiveness;[29] prolonged waiting times, can evolve in additional negative outcomes such as mortality, LOS and adverse events.[29]

Pain was the most investigated outcome included in the clinical domain. Pain outcomes are nurse-driven and employ NI protocols.[27,28,32] Though, improved outcomes in analgesia rates using NIA are reported, results may depend on local settings[27] and contributing factors may be demanding to establish.[32]

In the perspective domain patient-centeredness, which was synonymously to patient satisfaction,[28] was linked to nursing interventions such as NP fast track compared to resident physicians, NIA protocols, and nurse-initiated medications, and discharge advice. This tendency supports the good levels of patient satisfaction outcomes with emergency nurse practitioner services[26] compared to resident physicians[29] and seems to be associated with nurse-initiated analgesia.[28,32] However, methods evaluating patient satisfaction either failed in appropriate description or showed paucity.[32] Warranting the value of patients' EDs experience must be underlined since patients are key stakeholders in healthcare.[29] Patients' satisfaction with care depends on various aspects and can be affected by overall ED care experience, perception of quality of care, communication with staff and expediency of treatment, which makes

measurement challenging.[28] Therefore, validated patient satisfaction tools are needed for NSOs evaluation.[32]

The functional domain was the less explored for NSOs in the ED. The physical function was the only outcome reported in this domain by one study,[31] exploring the effectiveness of discharge interventions for elderly ED patients. While metrics measuring this outcome ($n=3$) were substantial and methodological quality was acceptable the study sample is too small to acknowledge evidence. However, investigating outcomes of discharge processes, especially for populations at high risk (e.g. the elderly person, chronic or end-of-stage renal disease patients, deviant vital signs at discharge, and citizens with social medical insurance), is important to reduce return visits in the ED and to prevent adverse patient outcomes.[16,17] Thus, therefore investigating positive outcomes measures to a greater extend, such as the functional status, may better demonstrate the effectiveness of ED nurses' contribution.[6,7] Gaining data that measures the functional status can be demanding and this may explain poor research.[6,7]

Limitations. This umbrella review has several limitations. The overall process of screening and selecting studies together with categorizing the outcomes for reporting and synthesizing findings was a challenge: Firstly, the differences between reviews in the definition of the adult population criteria has resulted in an adaption of the inclusion criteria of this review. Likewise, limitations in the population criteria may have resulted in the exclusion of studies that otherwise may have been eligible. The majority of the included studies were conducted in Australia therefore may present culture bias when interpreting the results. The selection, inclusion and extraction of data in studies were demanding owing to indistinct definitions and descriptions of outcomes (e.g. wait times, change in pain score, pain relief, quality of care); variations in conceptual framework used (e.g. self-constructed, quality dimensions of healthcare, clinical themes); variations in methods used to measure outcomes (e.g. quality of care, mortality). Lastly, outcomes were clustered in domains combining an intuitive approach, with adapted methods performed in studies[21,34] which may create bias.

Conclusion. The aim of this umbrella review was to outline the nursing-sensitive outcomes that have been evaluated in literature to date for the emergency department. In this review, 35 nursing-sensitive outcomes were identified across 9 studies, which could be relevant to the evaluation of the contribution of ED nursing care to patient outcomes. Findings showed that ED nursing-sensitive outcomes regarding the functional domain (e.g. physical function) were less investigated, while safety, clinical and perspective domains were more explored. NSOs research in emergency nursing practice is a conceptual challenge still in its early stage. Therefore, a standardized language is warranted within nursing to guide the development, classification, utilization and benchmarking of NSOs in the ED. Further research is needed to explore NSOs that makes the contribution of ED nursing practice visible.

NSOs research in emergency nursing practice is a conceptual challenge still in its early stage. Several nursing-sensitive outcomes were identified in this review that can evaluate the contribution of ED nursing care to patient outcomes. However, professional consensus is needed for agreed definitions and categorization of outcomes, formal methods, a conceptual framework and validated tools, to support the evaluation of nursing-sensitive outcomes and improve the quality of nursing care for patients admitted in the ED. Further research is required to explore patient outcomes sensitive to emergency nursing care to reflect the contribution of ED nursing practice.

Implications for the practice. The NSOs identified in this review could be used to create an ED minimum dataset[14,18,21] to outset the foundation

for NSOs research in the ED. And, therefore, make the impact of nursing interventions on patient outcomes measurable, improvable and visible to stakeholders. A standardized language could guide ED nurses and managers to shift ED nursing practice to an outcome-based culture of quality ED nursing care. (12,14,19) Research in ED NSOs should focus not only on negative outcomes (e.g. adverse events, complications, safety) typical for high pasted environments, but also on positive outcomes (e.g. functional status, patient satisfaction, aspects of the clinical domain). Furthermore, research development for NSOs within the functional domain for ED care transition interventions (e.g. discharge, handovers) in an ever ageing ED population are needed. Lastly, the extended scope of practice and the uptake of ED nurse-initiated interventions requires validated and common tools to measure their effectiveness.

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Determinants of Job Satisfaction among Nurses from Chilean Hospitals

Original Article

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Determinants of Job Satisfaction among Nurses from Chilean Hospitals

Abstract

Objective. To measure, at the national scope, the satisfaction of Chilean nurses working in hospitals, and establish personal and institutional determinants associated with satisfaction. **Methods.** Cross-sectional multicenter study, carried out in 40 public and private high-complexity hospitals in Chile. A self-administered survey was conducted with 1,632 clinical nurses from medical-surgical units. The variables of interest studied were: job satisfaction, personal determinants (sex, age, and postgraduate training), institutional organizational determinants (assignments and work environment, measured through the *Practice Environment Scale of the Nursing Work Index)*, and institutional structural determinants. Data analysis applied hierarchical logistic regression models, with three blocks of determinants, following nested models design. **Results.** The study showed that 21% of the nurses is very satisfied with their job. Training opportunities and professional growth are

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specific work aspects with which there is a lower percentage of nurses satisfied (10% and 11.2%, respectively). Among the personal factors, male sex and age are associated positively with satisfaction ($p<0.05$). Among the institutional organizational factors, a good work environment was associated with greater satisfaction ($p<0.001$); the number of patients per nurse was associated marginally with satisfaction ($p<0.05$). The structural factors of hospitals were not associated with satisfaction. **Conclusion.** A low proportion of nurses working in the high-complexity hospitals studied are satisfied with their job. Planning of strategies must be prioritized, leading to improving the retention of nurses, reducing the number of patients per nurse, and promoting good work environments in hospitals.

Descriptors: job satisfaction; nurses; hospitals; personnel turnover; working conditions; Chile.

Determinantes de satisfacción laboral entre enfermeras de hospitales chilenos

Resumen

Objetivo. Realizar una medición de alcance nacional de la satisfacción de las enfermeras chilenas que trabajan en hospitales para establecer qué determinantes personales e institucionales están asociados a ella. **Métodos.** Estudio multicéntrico de corte transversal, realizado en 40 hospitales públicos y privados de alta complejidad en Chile. 1632 enfermeras clínicas de unidades médico-quirúrgicas diligenciaron una encuesta. Las variables de interés estudiadas fueron: satisfacción laboral, determinantes personales (sexo, edad y formación de postítulo), determinantes institucionales-organizacionales (dotaciones y ambiente laboral, medidos mediante el *Practice Environment Scale of the Nursing Work Index)* y determinantes institucionales estructurales. Para el análisis de los datos se aplicaron modelos de regresión logística jerárquica, con tres bloques de determinantes, con el diseño de modelos anidados. **Resultados.** El 21% de las enfermeras estaba muy satisfecha con su trabajo. Las oportunidades de formación y de crecimiento profesional son los aspectos específicos del trabajo con los que hay menor porcentaje de enfermeras satisfechas (10% y 11.2%, respectivamente). Entre los factores personales, el sexo masculino y la edad se asocian positivamente a la satisfacción ($p<0.05$). Entre los factores institucionales organizacionales, un ambiente laboral bueno se asoció a mayor satisfacción ($p<0.001$); el número de pacientes por enfermera se asoció marginalmente a la satisfacción ($p<0.05$). Los factores estructurales de los hospitales no se relacionaron a la satisfacción. **Conclusión.** Una baja proporción de enfermeras

que trabaja en los hospitales de alta complejidad estudiados están satisfechas con su trabajo. Debe priorizarse la planificación de estrategias conducentes a mejorar la retención de las enfermeras, reducir el número de pacientes por enfermera y fomentar los buenos ambientes de trabajo en los hospitales.

Descriptores*:* satisfacción en el trabajo; enfermeras y enfermeros; hospitales; reorganización del personal; condiciones de trabajo; Chile.

Determinantes da satisfação profissional entre enfermeiros de hospitais chilenos

Objetivo. Realizar uma medição nacional da satisfação dos enfermeiros chilenos que trabalham em hospitais e estabelecer quais determinantes pessoais e institucionais estão associados à satisfação. **Métodos.** Estudo transversal multicêntrico, realizado em 40 hospitais públicos e privados de alta complexidade no Chile. 1632 enfermeiros clínicos de unidades médico-cirúrgicas responderam à pesquisa. As variáveis de interesse estudadas foram: satisfação no trabalho, determinantes pessoais (sexo, idade e formação de pós-graduação), determinantes institucionais organizacionais (pessoal e ambiente de trabalho, mensurados por meio da Escala de Ambiente de Prática do Índice de Trabalho em Enfermagem) e determinantes institucionais estruturais. Para análise dos dados foram aplicados modelos de regressão logística hierárquica, com três blocos de determinantes, seguindo desenho de modelos aninhados. **Resultados.** 21% dos enfermeiros estavam muito satisfeitos com o seu trabalho. As oportunidades de formação e crescimento profissional são os aspectos específicos da função com os quais existe menor percentagem de enfermeiros satisfeitos (10% e 11.2%, respectivamente). Entre os fatores pessoais, o sexo masculino e a idade estão positivamente associados à satisfação ($p<0.05$). Dentre os fatores institucionais organizacionais, um bom ambiente de trabalho esteve associado à maior satisfação ($p<0.001$); O número de pacientes por enfermeiro esteve marginalmente associado à satisfação ($p<0.05$). Os fatores estruturais hospitalares não estiveram relacionados à satisfação. **Conclusão.** Uma baixa proporção de enfermeiros que atuam nos hospitais de alta complexidade estudados estão satisfeitos com seu trabalho. Deve ser dada prioridade ao planeamento de estratégias para melhorar a retenção de enfermeiros, reduzir o número de pacientes por enfermeiro e promover bons ambientes de trabalho nos hospitais.

Descritores: satisfação no emprego; enfermeiras e enfermeiros; hospitais; reorganização de recursos humanos; condições de trabalho; Chile.

Introduction

Job satisfaction is a construct difficult to define that involves cognitive and emotional aspects[1] and which expresses the perceptions people have of their work.[2,3] The degree to which the work environment fulfills the expectations of the individuals is that which defines the level of satisfaction.[2] The job satisfaction of health teams is of much relevance, given that it is associated with better productivity and quality of work and it is a primary factor in the individual's well-being.[4,5] Job dissatisfaction, in turn, is a factor, among others, associated with absenteeism, rotation, deficient work results, dehumanization of care.[4-6] International studies indicate some determinants of job satisfaction in nursing professionals.[5,7] Most of the studies have analyzed two categories of determinants. In the first place, there are the personal characteristics of the nurses, like age, sex, education, years of experience, among others.[3] In the second place, a multiplicity of organizational factors has been studied, like work environment, availability of resources, assignments, the leadership style of heads, or recognition.[3,5,7]

In Chile, recent studies account for the profiles of nurses working in public and private sector hospitals and for some of the characteristics of their work environments.[8-10] The evidence gathered shows that there are factors of the nurses and of the hospital setting that could be impacting negatively upon the satisfaction of these professionals. Among the personal factors, the age of the nurses is highlighted. Some studies indicate that young nurses tend to be less satisfied than those who are older and, in Chile, an important number of nurses employed in hospitals does not reach 30 years of age.[10] Regarding factors of the environment, it is known that assignments of nurses in Chilean hospitals are insufficient,[10] which generates work overload and lack of time to perform all the care tasks.[11-13] However, few studies have evaluated the job satisfaction of nurses and those that have are old and show specific realities from two Chilean regions.

Two decades ago, the level of satisfaction of nurses from Region VIII of Chile was measured, analyzing some determinant factors and the existence of differences between those working in private and public hospitals. Among their findings, these reported low overall level of satisfaction among the nurses and worse results in nurses from public hospitals.[14] A subsequent study, carried out in Santiago de Chile, whose aim was to measure job satisfaction among nurses from five hospitals and the association of satisfaction with the leadership styles of the heads, established that nearly 42% of the nurses was not very satisfied or dissatisfied with their job.[15] Both studies are now rather old and present regional realities not necessarily generalizable to the entire country.

Within the international perspective, a recent meta-analysis demonstrated that nurses in better work environments have between 28% and 32% less probabilities of job dissatisfaction.[16] Countries, like the Czech Republic, have declared that a positive work environment has a favorable impact on the nurses' job satisfaction.[17] In Brazil, the results are similar. [18] In Taiwan,

less lower levels of satisfaction were found among nurses, evidencing that greater support to autonomy was associated positively with job satisfaction, as well as the interventions to favor empowerment and diminish burnout.[19]

The purpose of this research was to measure, at the national scope, the satisfaction of Chilean nurses working in public and private hospitals, and establish personal and institutional determinants associated with satisfaction. This study derives from the project RN4CAST-Chile (Linda H. Aiken, University of Pennsylvania, principal researcher) whose purpose was to understand the contribution by nurses to the results of patients and which factors of the work environment affect the nurses' performance and wellbeing. The RN4CAST protocol is described in greater detail in other publications.[20,21] This study was led by the Schools of Nursing at the University of Pennsylvania, in the United States, and at Universidad de los Andes in Chile. It had collaboration from another three Chilean universities: Universidad Católica del Maule, Pontificia Universidad Católica de Chile, and Universidad de La Serena. The study was conducted between 2016 and 2019, which is why the results presented are the reflection of the nurses' situation prior to the start of the COVID-19 pandemic.

Methods

An observational, cross-section study was conducted among nurses in medical, surgical, or medical-surgical units from high-complexity general hospitals throughout the Chilean territory. In the first instance, the hospitals were selected. Within the context of the global project, it was necessary for the hospitals selected to have implemented the codification of hospital discharges with system of Groups Related to Diagnosis. This criterion limited to 45 the universe of high-complexity general hospitals to study; 37 public and 8 private hospitals.

After defining the hospitals, the nurses were selected from medical, surgical, or medical-surgical units. Besides the unit, the only selection criterion was that they had to nurses in charge of direct patient care. Thereby, nurses in management tasks were excluded. The study did not perform a sampling, rather, it invited to participate all nurses who met the inclusion criteria. To know the total number (n = 2,173), prior to collecting data, a census was made through the hospital's head nurse. Knowledge of the total number of nurses of the population permitted calculating the participation rate. The nurses participating in the study had to answer a self-administered survey with questions about their work environment, number of patients assigned to their care, and about some job indicators among which was included satisfaction. In addition, questions were included of sociodemographic nature and about education and professional experience of the nurses. The survey was answered on paper, with previous signed informed consent. The consent was signed in two copies, one for the nurse participating and another for the research team. Data collection lasted 18 months, taking place between May 2017 and October 2018.

The variables of interest were job satisfaction and its possible determinants. Among these, personal determinants (demographic, training, and professional experience) and institutional determinants were explored, which included the organizational and structural aspects of the hospitals.

Job satisfaction: was measured through a single question with four possible responses in an ordinal measurement scale: "very satisfied", "somewhat satisfied", "somewhat dissatisfied", "very dissatisfied". For the statistical analyses, the variable was dichotomized, separating nurses who reported being very satisfied with their job from those who stated something else. Further, a satisfaction evaluation was added with respect to specific work aspects (salary, training opportunities, among others). These questions, measured with the same Likert scale, were managed in the same way as the satisfaction variable.

Personal determinants: sex was measured as a dichotomous qualitative variable (woman-man). Age, years of professional experience, and years working in the current hospital were measured as continuous variables expressed in years. Specialization training and graduate degree was measured through the following question: "*What is the highest level of postgraduate teaching you have achieved?*" The possible responses included "*none*", "*specialization*", "*master's*", and "*doctorate*". Thereafter, this variable was dichotomized to group the nurses who answered "none" in one category and all the rest in the other, representing those who do have post-graduate studies or graduate degree.

Institutional determinants: first, some variables of organizational nature were studied. One of them was the quality of the work environment; the *Practice Environment Scale of the Nursing Work Index* -PES-NWI-[22] was used to measure this. The instrument, which is the most widely used globally, is validated in Spanish.[23] It comprises 32 questions that assess five dimensions of the nursing work environment: participation by nurses in decision making within the hospital, institutional commitment with quality, communication and leadership from management, availability of sufficient resources including those of personnel, and communication between physicians and nurses. Each question is answered with a Likert scale of four categories between "*totally disagree*" and "*totally agree*", with values from 1 to 4. From the questions corresponding to each of the five subdimensions, an average score was obtained by each hospital. Then, these five values were averaged to obtain a final average that expresses the quality of the work environment in each hospital. This average was measured as a continuous variable with values from 1 to 4. Together with the work environment, staff assignments were measured expressed as assignment of patients per nurses. To measure this variable, each nurse was asked how many patients and nurses were there in their unit during the last work shift. Staff assignment was calculated by dividing the patients by the number of nurses. From the nurses working in the same hospital, an average value was obtained of patients per nurse in said hospital. The structural variables of the hospitals were also measured. Among these were included the hospital property (public or private), size expressed in number of beds, and location (differentiating hospitals in the capital, Santiago, from those in other cities).

For the data analysis, firstly, participation rates were calculated for both hospitals and nurses. Next, the distribution of the quantitative variables was evaluated by applying the Kolmogorov-Smirnov test to identify variables of normal and non-normal distribution. The characteristics of the nurses and hospitals were described. For the qualitative variables, frequencies and percentages were used and, for the quantitative variables, means and standard deviations were used if the variable had normal distribution, and median and interquartile range if the variable did not have normal distribution. A descriptive analysis was performed of the nurses' overall satisfaction and in relation with specific aspects of their work. Satisfaction prevalence, expressed in percentage, was measured by dividing the number of nurses who stated being very satisfied with their current work by the number of nurses who participated in the study and multiplying by one hundred. Then, the characteristics of the nurses and hospitals were contrasted between the nurses who said they were very satisfied with their job and all the rest. To evaluate if the differences were significant, the study applied Chi-squared tests in the case of categorical variables and Student's t or Mann-Whitney U tests for continuous variables, according to their distribution, with a significance level of $\alpha = 0.05$.

To establish the determinant factors of satisfaction among nurses, logistic regression models were used with the dichotomic variable of satisfaction as result variable (very satisfied nurses (1) and not very satisfied nurses (0)). The selection of possible determinants was made primarily based on the evidence already existing in the literature, seeking

to avoid multicollinearity among some variables. The possible determinants were grouped, according to their type, into three blocks and a hierarchical logistic regression analysis was applied, following a nested models design. The simplest model was constructed with the nurses' personal characteristics. The second model incorporated the organizational characteristics of the hospitals. Lastly, the third model incorporated structural characteristics of the hospitals. To evaluate the goodness of fit of the models, Akaike and Bayesian (AIC and BIC) criteria were applied. Analyses were carried out with the STATA 17.0 BE program.

This study was approved by the Scientific Ethics Committee at Universidad de los Andes, Chile (CEC201613). Some local committees, whether from the local divisions of the Ministry of Health or from the very hospitals, also reviewed the Project for approval. The study presented no risks to the participants. Participation by the nurses was voluntary and anonymous, with prior signed informed consent.

During the execution of the study, the ethical principles of respect, beneficence, and justice were safeguarded. The dignity of the individuals was respected by inviting them to participate voluntarily and without coercion. Beneficence was protected by means of anonymity, to assure participants that the information collected could not be used against them by their heads or people in higher positions. Justice was lived in terms of non-discrimination of the possible participants, given that all those who met the inclusion criteria were invited to participate.

Results

The study had 89% participation rate among the hospitals (40/45) and 75% among the nurses (1,632/2,173). Two of the missing hospitals did not wish to participate in the study due to circumstantial internal reasons and the other three communicated their authorization to the research team once the data collection process had been closed. Most of the participating hospitals were public, and the distribution among the country's northern zone, southern zone, and Santiago was quite homogeneous and coherent with the population distribution (25%, 40%, and 35%, respectively). The assignment average in hospitals was 14 patients per nurse.

The nurses studied were mostly women and nearly 60% of the participants was 30 years old or less and had five or less years of professional experience; 27% had post-graduate studies or graduate degree, mostly clinical specializations and, in isolated cases, Master's studies. Table 1 describes the principal characteristics of the hospitals and nurses.

Table 1. General characteristics of 1,632 nurses who work in 40 Chilean hospitals

Nurses	**Valor**
Men; *n* (%)	190 (11.7)
Age; median (range)	30.0 (20.0 – 66.0)
Years of professional experience; median (range)	4.0 (0 – 45.0)
With specialization or graduate degree; *n* (%)	440 (27.3)
Hospitals	
Public; *n* (%)	34 (85.0)
Located in Santiago; *n* (%)	16 (40.0)
Size; mean (SD)	450 (145)
Patients per nurse; median (SD)	13.0 (5.9 – 23.0)
Score of work environment; mean (SD)	2.6 (0.2)

Table 2 presents descriptive data on the number and percentage of nurses who state being very satisfied with their current work. One in every five nurses, approximately, is very satisfied. With respect to specific work aspects, there is a very low percentage of nurses who report being satisfied with growth and professional formation opportunities. Moreover, over 25% of the nurses indicate being very satisfied with their professional autonomy.

Table 2. Proportion of nurses "very satisfied" with their work according to total and specific aspects of such (*n* = 1,632)

Satisfaction	*n* (%)
Overall satisfaction	342 (21.0)
Satisfaction with specific work aspects:	
Training opportunities	164 (10.0)
Professional growth opportunities	183 (11.2)
Salary	271 (16.6)
Vacations	292 (17.9)
Professional status	336 (20.6)
Work shift	382 (23.4)
Medical leaves	420 (25.7)
Autonomy	433 (26.5)

Table 3 contrasts differences in personal and institutional characteristics among nurses who reported being very satisfied with their job and those whose degree of satisfaction was lower. Between the group of very satisfied nurses and that of nurses who were less satisfied, no significant differences exist in the proportion of women, age, and years of professional experience or of permanency in the institution, or in the proportion of nurses with postgraduate training. Significant differences do exist between both groups with respect to the characteristics of the institutions in which they work. A lower percentage of very satisfied nurses works in public hospitals, compared with those less satisfied, has lower workloads, and works in hospitals with better quality of work environment. All the subdimensions of the work environment show a better score among the very satisfied nurses compared with those from the group that is not very satisfied (these scores are not shown in the table).

Table 3. Differences in personal characteristics and characteristics related to work between very satisfied nurses and those not very satisfied (*n* = 1,632)

	Very satisfied *n* = 342	Not very satisfied *n* = 1,290	p-value
Personal characteristics			
Men; *n* (%)	49 (14.3)	150 (11.0)	0.090
Age; median (range)	29 (20 - 66)	30 (22 – 63)	0.279
Years of professional experience; median (range)	4.0 (0 - 45)	4.0 (0 - 41)	0.002
With postgraduate training or graduate degree; *n* (%)	91 (26.7)	349 (27.5)	0.081
Characteristics related to work			
Nurses from public hospitals; *n* (%)	280 (81.8)	1.115 (86.4)	0.033
Nurses in hospitals of Santiago; *n* (%)	157 (45.9)	603 (46.7)	0.782
Patients per nurse; median (range)	12.5 (5.9 – 23.0)	13.0 (5.9 – 23.0)	0.006
Quality of the work environment; mean (SD)	2.66 (0.19)	2.58 (0.20)	< 0.0001

Three models were constructed to evaluate the determinants of nurses' job satisfaction. Model 1, which incorporated personal and formation characteristics of the nurses, did not yield any statistically significant result; although in some, the size of the effect measured for the sex variable sex, for example, results rather large (OR: 1.39). Model 2 integrated two variables related with

the organization of the hospitals: assignments and work environment. This model resulted significantly better in terms of explaining the factors associated with the nurses' satisfaction. In this new model, significant association appears among satisfaction and the nurses' sex and age. Being a male is associated with nearly 50% greater probability of being satisfied with the job work and for every five years of increase in age of the nurses, there is almost 10% more likelihood of being satisfied. Together with the nurses' characteristics, model 2 shows that both organizational variables analyzed are associated significantly with the nurses' satisfaction, with the effect of the work environment being particularly important. For every 1 standard deviation increase in the average score of hospital work environment, the likelihood of the nurses being satisfied increases by almost 40% (values are shown in Table 4).

Table 4. Hierarchical logistic regression analysis of the association among nurses' characteristics, hospital characteristics, and job satisfaction (*n* = 1,632)

Variables	Model 1			Model 2		
	OR	95% CI	*p*-value	OR	95% CI	*p*-value
Sex (male)	1.36	0.95 - 1.92	0.089	1.49	1.04 - 2.12	0.029
Age †	1.01	0.98 - 1.16	0.121	1.09	1.01 - 1.18	0.035
Graduate studies	0.92	0.70 - 1.21	0.547	0.89	0.67 - 1.18	0.425
Patients per nurse				0.96	0.93 - 0.99	0.049
Work environment‡				1.39	1.23 - 1.57	< 0.0001

† The age variable was operationalized so that the effect presented corresponds to that associated with 5-year increments.
‡ The work environment variable is standardized so that the effect presented corresponds to increments of 1 standard deviation in the environment score.

A third model was evaluated, which added a new block of determinants that corresponded to the structural characteristics of the hospitals, like the condition of being public or private or their location. The inclusion of these variables showed no significant differences with respect to model 2, which is why the results from model 3 are not presented.

Discussion

This study is the first of national scale that measures nurses' satisfaction in Chilean hospitals. Its results reveal that only one in every five nurses is very satisfied with their job. In specific aspects of satisfaction, only one in every ten nurses is very satisfied with respect to training opportunities and professional growth. This finding agrees with results reported 20 years ago, which indicated that professional promotions were among the important factors of dissatisfaction of Chilean nurses.[14] In effect, the professional career of nurses from hospitals has very few incentives; currently, work is being done in the Ministry of Health on a policy that grants formal recognition to the postgraduate training of nurses, specially to those with clinical specializations, and to the development of advanced nursing practice roles. In some European countries, like Slovenia, the postgraduate training of nurses is an incipient reality, a fact that impacts negatively on their job satisfaction.[24] In other countries, like Switzerland, more progress has been made in this line,

positively impacting satisfaction.[25] In the United States, postgraduate training is widespread, which favors the nurses' job satisfaction.[26,27]

In the bivariate analysis, very satisfied nurses, compared with those that are not very satisfied, were not differentiated significantly regarding their demographic characteristics of professional experience. However, in the multivariate analysis that accounted for the determinants of satisfaction, an effect of the sex and age variables was seen on the condition of being very satisfied with the job. Male nurses, and those who were older, showed significantly higher probability of being very satisfied with their job than women or the younger male nurses. Studies in other countries present inconsistent results with respect to the role of sex and age on nurses' satisfaction.[3,28]. Within the context of Chilean hospitals, with mostly young nurses, it makes sense to think that increased age is associated with greater satisfaction. The few older nurses very likely have remained in their institutions because of being more satisfied. Years of professional experience were not included in the predictive models to avoid multicollinearity problems with the age variable, but it is possible that years of experience are a factor positively associated with satisfaction, as shown by other studies.[28]

Highlighted, among the results of the present study, is the role of the work environment as strong predictor of nurses' satisfaction, even above other organizational factors, like staff assignments. The results are coherent with those from a recent meta-analysis.[29] The aggregate analysis regarding the effect of the environment on nurses' satisfaction, considering the opposite of dissatisfaction, showed that nurses in hospitals with a good environment are 32% less likely to be dissatisfied with their job.[29] This is an effect size very similar to that found in this study. There are studies that delve into the specific environmental factors that may be more closely associated with satisfaction.[28] For example, some of the factors described are nurses' perception of lack of support from their coworkers, the salary, autonomy, among others. In this study, although the scale to measure the quality of the work environment has five subdimensions, the analysis was performed with the global measurement of the quality of the environment, which is the form originally described to use this instrument.[22] Thus, a field remains open for future research with respect to the specific work environment aspects that impact more critically on the satisfaction of Chilean nurses.

Staff assignments were also associated with nurses' satisfaction. The higher the patient load, the lower the probability that nurses will be satisfied. The evidence already accumulated for two decades on the effect of staff assignments on nurses' job indicators, among them satisfaction, is quite robust and coherent with the results of this study.[30,31] However, it must be highlighted that, within the Chilean hospital context, in which the average load of patients per nurse is much higher than that described in other countries;[30] this result should be taken into special consideration.

The structural variables of the hospitals had no role as predictors of nurses' satisfaction. Contrary to what may have been thought, the institutional characteristic of public or private hospital was not associated with nurses' job satisfaction. This differs from the previous studies conducted in our country that indicated that nurses from the private area had higher levels of satisfaction than those from the public area.[14] Two possible explanations exist. On the one hand, it may be that hospitals, independent of belonging to the public or private network of health providers, do not differ in terms of creating work environments that are more conducive to satisfaction. Furthermore, in this study a low proportion of hospitals was private, which may have limited statistical power to investigate significant differences between public and private hospitals.

The study, herein, had some limitations. Its cross-sectional design limits the capacity to establish causal relationships among the variables of interest. Also, the study only included nurses from medical, surgical, or medical-surgical units;

hence, caution is required when generalizing these results to other types of hospital units. However, the units studied represent nearly 50% of the beds in each of the hospitals, thus, we believe that the results probably capture rather well the hospital reality as a whole.

In conclusion, the findings obtained account for only one in every five nurses in medical-surgical units of hospitals from the public and private network throughout the Chilean territory being very satisfied with their job. The determinants factors associated with nurses' personal characteristics are not modifiable, but work can be done by identifying the points that generate differences between the satisfaction of male and female nurses. Policies can also be implemented that favor the retention of older nurses and which, when being more satisfied, promote positive organizational climates. Staff assignments and the work environment are determinants of satisfaction among Chilean nurses. Improving staff assignments is a permanent challenge, but it comes at a high cost that may be difficult to assume in some hospitals, while the creation of good-quality work environments is a challenge at the reach of all.

This study contributes to the nursing discipline by delivering new knowledge that contributes to the management setting of health institutions. Bearing in mind the evidence gathered, nurses dedicated to management, especially those in management or directive positions, should include in their strategic plans an objective seeking to improve the satisfaction of the nursing staff. Among the actions leading to said objective, priority should be given to strategies of retention, improved staff assignments, and promotion of good work environments.

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Original Article

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Nursing guidelines for caregivers of children with congenital heart disease after discharge: Integrative Review

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Nursing guidelines for caregivers of children with congenital heart disease after discharge: Integrative Review

Abstract

Objective. To identify the nursing guidelines for caregivers of children with congenital heart disease (CHD) after hospital discharge. **Methods.** This is an integrative literature review of articles published between 2016 and 2022. In order to select the studies, the controlled descriptors "Nursing Care", "Nursing", "Heart Defects, Congenital", "Caregivers" and "Child" were used in four scientific databases – LILACS, SCIELO, PUBMED and BDENF. **Results.** The current integrative literature review analyzed 11 articles from the original sample. The main nursing care issues are those related to nutrition, oral health, leisure and physical activity, care with medication and the surgical wound, as well as the need to offer support to these children's families. The authors emphasize that nurses are present at various moments in a child's life, including at birth, but the approach to CHD is scarce in

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their basic training as nurses, as well as in their professional practice, and there is a shortage of continuing education proposals for the care of children with CHD. **Conclusion.** The study showed that nursing guidelines are focused on basic care and family support for these children. Lastly, this study highlighted the important role of nurses in terms of consolidating guidelines on the care needs of these children.

Descriptors: nursing care; nursing; heart defects, congenital; caregivers; children.

Directrices de enfermería para cuidadores de niños con cardiopatía congénita tras el alta: Revisión Integradora

Resumen

Objetivo. Identificar las orientaciones de enfermería para los cuidadores de niños con cardiopatía congénita (CC) después del alta hospitalaria. **Métodos.** Se trata de una revisión bibliográfica integradora de los artículos publicados entre 2016 a 2022. Se utilizaron los descriptores controlados “Nursing Care”, “Nursing”,“Heart Defects, Congenital”, “Caregivers” y “Child” para seleccionar los estudios en cuatro bases de datos científicas - LILACS, SCIELO, PUBMED y BDENF. **Resultados**. Se analizaron 11 artículos de la muestra original en esta revisión. Los principales tipos de cuidados de enfermería son los aspectos relacionados con la nutrición, la salud bucodental, el ocio y la actividad física, los cuidados con la medicación y la herida quirúrgica, así como la necesidad de ofrecer apoyo a las familias de estos niños. Los autores enfatizan que, aunque, las enfermeras están presentes en diversos momentos de la vida del niño, incluyendo el nacimiento, el abordaje de la ECC es escaso en su formación básica como enfermeras, así como en su práctica profesional, y faltan propuestas de formación continua en el cuidado de estos niños. **Conclusión**. El estudio mostró que las orientaciones de enfermería se centran en los cuidados básicos y en el apoyo familiar a niños con ECC. Por último, este estudio se evidenció el importante papel de las enfermeras en la consolidación de las orientaciones para las necesidades de atención de estos niños.

Descriptores: atención de enfermería; enfermería; cardiopatías congénitas; cuidadores; niños.

Orientações de enfermagem para cuidadores de crianças com cardiopatia congênita após a alta: Revisão Integrativa

Resumo

Objetivo. Identificar as orientações de enfermagem para cuidadores de crianças com cardiopatias congênitas (CC) após alta hospitalar. **Métodos.** Trata-se de uma revisão integrativa da literatura de artigos publicados entre 2016 e 2022. Para seleção dos estudos, foram utilizados os descritores controlados "Nursing Care", "Nursing", "Heart Defects, Congenital", "Caregivers"), y "Child" em duas bases de dados científicos – LILACS, SCIELO, PUBMED e BDENF. **Resultados.** Na presente revisão integrativa da literatura, foram analisados onze artigos da amostra original. Os principais cuidados de enfermagem são os relacionados com à alimentação, saúde bucal, lazer e atividade física, cuidados com medicamentos e com a ferida operatória, como também a necessidade de oferecer apoio à família dessas crianças. Os autores ressaltam que o enfermeiro está presente em diversos momentos da vida da criança, inclusive, no nascimento, porém a abordagem sobre CC é escassa na sua formação básica como enfermeiro, assim como em sua atuação profissional, percebendo-se escassez de propostas de educação continuada para o cuidado de crianças com CC. **Conclusão.** O estudo apontou que as orientações de enfermagem estão voltadas ao cuidados básicos da assistência e ao apoio familiar dessas crianças. Por fim, foi evidenciado nessa pesquisa o importante papel do enfermeiro para a consolidação das orientações das necessidades voltadas ao cuidar dessas crianças.

Descritores: cuidados de enfermagem; enfermagem; cardiopatias congênitas; cuidadores; crianças.

Introduction

Congenital heart defects (CHD) are abnormalities that affect the heart and great vessels, which are responsible for important functions in live births and are more common in fetuses. CHD can be clinically divided into cyanotic and acyanotic, which indicate the presence or absence of a bluish coloration of the skin and mucous membranes due to a deficit of oxygen in the blood.[1,2] Among the various existing cardiac malformations, CHD have an impact on children's lives, on morbidity and mortality and on the increase of expenditure in public and private health services.[3] They are one of the biggest causes of death among cardiac malformations in the first year of life, accounting for around 2 to 3% of neonatal deaths and are an important cause of mortality.[4]

Emerging countries, where access to health care is more difficult, tend to have higher mortality rates than developed countries, according to national epidemiological studies.[5] Approximately 36,000 children are born with CHD in the United States of America (USA) each year, corresponding to 1% of all live births. Of this percentage, 44.5% die in their first year of life.[6] In Brazil, CHD remains the third leading cause of death in the neonatal period. The Brazilian Ministry of Health estimates that the incidence in the country is 28,846 new cases of CHD a year, but notifications by the Unified Health System (SUS, as per its Portuguese acronym) show that there are as many as 1,680 cases a year, demonstrating flaws in the diagnosis and identification of the problem.[7] Nevertheless, around 23,000 children need surgical treatment in the first year of life, while only 6,000 are operated on. In the North and Northeast regions, this rate is quite peculiar, as up to 80% of children with CHD are not diagnosed and do not undergo treatment.[8]

Genetic factors are associated with the pathogenesis and appearance of various cardiac malformations and around 400 genes are involved in congenital heart disease.[9] Nevertheless, CHD is related to various forms and a variety of causes, such as extrinsic factors, which can directly or indirectly affect the development of the fetus at the embryonic stage. These factors are related to the use of thalidomide, retinoic acid, alcohol use by the mother, hypoxia, other medications and hypovitaminosis. During pregnancy, intrinsic maternal factors can influence the development of CHD, such as gestational diabetes, maternal obesity, phenylketonuria, viral infection and hyperthermia.[10,11] In underdeveloped countries, access to health care is precarious and reveals difficulties in different aspects, such as poverty, insecurity, housing issues, education and family understanding of the disease, immigration, access to food and barriers in terms of moving around and transportation. All these factors contribute to the clinical outcomes of people suffering from cardiovascular diseases, whether they are adults or children.[12]

Congenital heart disease has an impact not only on children's lives, but also on those of their caregivers and family members. The range of recurrent invasive treatments, surgeries and increased risk of death lead to the development of stress and damage to mental health. Parents of children with CHD tend to have less time for leisure, problems in terms of keeping a job and work overload, resulting in social isolation and family financial problems.[12] Comprehensive care for children with congenital heart disease has been established since 2017, through a federal project by the Brazilian Ministry of Health. The project aims at expanding care for children with CHD, increasing care for these children by 30% per year, with more than 3,400 procedures, totaling around 12,600 procedures per year, with a direct impact on the reduction of neonatal mortality.[13]

Given the evolution of the diagnosis and treatment of CHD, there is no need for just one professional with specialized training, but rather the work of different professionals with different training and specialties to work together in a complementary, integrated and simultaneous way to care for children with this condition. These professionals must develop an active partnership with the public health system, resulting in more team training, in order to guarantee early diagnosis and appropriate treatment.[14,15] Nurses are present at various moments in a child's life, including at birth, but the approach to CHD is scarce in their basic training as nurses, as well as in their professional practice, and there is a shortage of continuing education proposals for the care of children with CHD. Professionals caring for neonates with CHD need to be prepared in a systematic and continuous way, through their participation in the teaching-learning process and in health education with family members.[16,17] However, even if the nurse's approach takes into account the systematization of nursing care (SNC), specific knowledge about nursing care for children with CHD must be continuously improved. In addition, family caregivers of children with CHD need to better understand the disease and develop skills to help with home care after hospital discharge. The objective of this study was therefore to identify the nursing guidelines for caregivers of children with congenital heart disease after hospital discharge.

Methods

This is an integrative literature review (ILR) through an exploratory study. The present research was developed in six moments: 1 - identification of the problem to be solved and elaboration of the research question; 2 - development of inclusion and exclusion criteria for articles; 3 - extraction of relevant information from the selected studies; 4 - evaluation of the studies selected to compose the integrative review; 5 - reading and interpretation of studies; 6 - organization, discussion and complete synthesis of publications.[18] In the first stage, the PICO strategy was used to formulate the guiding question, being P (population), I (intervention), CO (context).[19] Therefore, the following question was elaborated: "(P) For caregivers of children with congenital heart disease (I) What are the nursing guidelines after hospital discharge? (Co) Not applicable."

In the second stage, the search was carried out between April and July 2022. As for the inclusion criteria, articles were selected that covered the topic and were aimed at the study's objective, available in full in electronic form free of charge, in Portuguese, English and Spanish; published between 2016 and June 2022, considering this time necessary for the quality of this study's proposal, since the temporality of six years of search allows its product to present a current discussion on what was investigated. Exclusion criteria were articles that did not address the relevant theme for the scope of the research; were not electronically complete; written outside the delimited period, as well as editorials, publications in event proceedings, theses, dissertations, monographs and incomplete documents; and were not available in full online.

For the search strategy, the following descriptors established in *Descritores em Ciências da Saúde* (DeCS) (DeCS) and Medical Subject Headings (MeSH) were used: "Nursing Care"; "Nursing" ("Nursing"); "Congenital Heart Defects" ("Heart Defects, Congenital"); "Caregivers" ("Caregivers"); "Child" ("Child"), related to the Boolean operators AND and OR. For data selection, articles published in scientific journals were analyzed, using the databases of the Virtual Health Library Portal (VHL), such as: Latin American and Caribbean Health Sciences Literature (LILACS), PUBMED and *Base de Dados de Enfermagem* (BDENF). For the search in the Scientific Electronic Library Online (SCIELO), the page "scielo.br" was used. The used databases were selected because they are a reference in the health and nursing areas.

In order to ensure the quality and reliability of the study, the recommendation Guideline PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was adopted, which is composed of a structured checklist, capable of describing all the important and essential steps and approaches for the preparation of a review, added to the flowchart (FIGURE 1) that discriminates the elements of the methodology for identification, selection, eligibility and inclusion of references.[20,21] Several classifications are available in the literature, but the most classic score for classifying primary studies was systematized by the Oxford Centre for Evidence-Based Medicine (CEBM) in 1998, and its last update was carried out in 2009.[22]

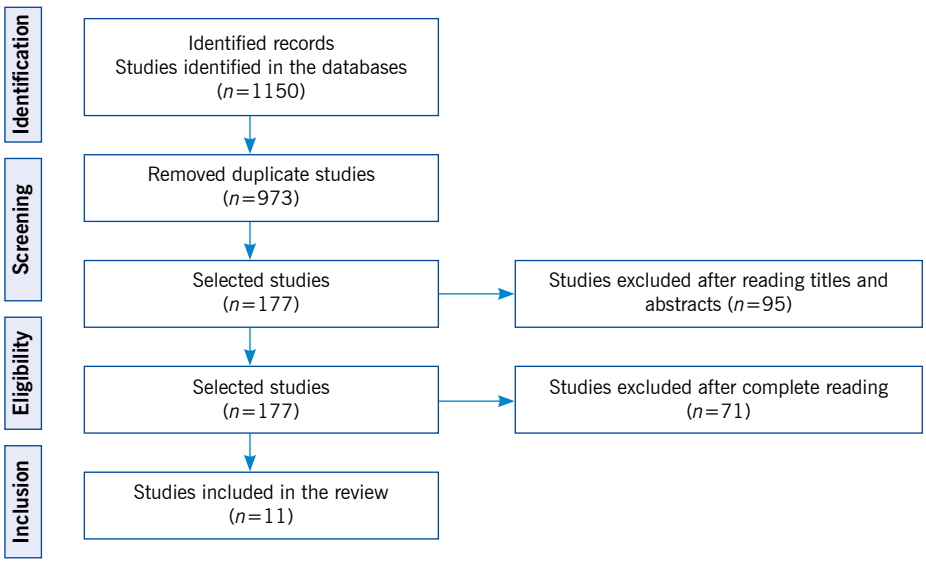

Figure 1. Flowchart of the study selection process

A total of 1,150 publications were identified, of which 973 were excluded after applying the filters and inclusion and exclusion criteria, leaving 177 articles. Subsequently, the selection was carried out by reading the articles considered potentially eligible in their entirety, whose titles and abstracts provided evidence on the subject, where 71 articles were excluded and 11 articles were included in the review (Figure 1). The selection steps were carried out. For the storage, transcription and analysis of the articles, a protocol was elaborated by the authors. After

defining the sample, a database was created using Microsoft Excel® 2016 software, which allowed organizing and compiling information from the selected studies. The presentation of the results and their discussion were carried out in a descriptive way, allowing the reader to evaluate the applicability of the literature review, in order to positively impact nursing practice, providing an organized way to review the evidence on a topic. The level of evidence of the selected studies was based on the classification that categorizes research into seven levels of evidence, where "1" is the level of greatest evidence: I- systematic reviews with meta-analysis of clinical trials; II- randomized clinical trial; III- clinical trial without randomization; IV- cohort, case-control; V- systematic review of descriptive works; VI- single descriptive or qualitative study; VII- opinion of expert committees or authorities.[21]

Results

In this integrative literature review, 11 articles from the original sample were analyzed. For a better organization of the selected studies, information such as author, year, title, database, origin of the study and journal of publication were extracted, thus facilitating the process of interpretation of the obtained results and of the articles selected for the composition of the current study. The articles were predominantly published in the years 2020 (n=2) and 2019 (n=5), with most publications in Portuguese (n=6). Of the 11 studies, six were conducted in Brazil and five in the United States. The journals that most contributed were those in the nursing area (n=7), followed by the medical area (n=4). Accordingly, the included studies were found in BDENF, four in SCIELO, five in PUBMED and one in LILACS. (Table 1)

Table 1. Descriptive variables and levels of evidence of the 11 articles included in the integrative review.

Article	Authors, year; country (reference)	Study design	Objective	Results and Conclusions/Outcomes	Level of evidence
A1	Precce *et al.*, 2020, Brazil.[23]	Qualitative	To analyze the educational demands of family members of children with special health needs in the transition from hospital to home.	The information was analyzed and synthesized into three thematic categories Recognizing congenital heart disease; Caring for the neonate in the intensive care unit; the family and the care for the neonate. There is a need for greater professional involvement in terms of caring for these children and there are gaps in nurses' knowledge production that show this reality, in such a way as to subsidize evidence-based clinical practice.	4
A2	Xavier *et al.*, 2020, Brazil.[24]	Exploratoryand descriptive research with a qualitative approach	To understand the meanings attributed by family caregivers to the diagnosis of chronic illness in a child.	The family attributed meanings to discovering the chronic illness diagnosis in a child when interacting with nursing/health professionals. The family's interaction with the nursing/health team contributes to the meaning attributed by the family member to the chronic illness diagnosis in a child.	4
A3	Witkowskia *et al.*, 2019, Brazil.[25]	Descriptive and cross-sectional study	To present the experience of training family members of children and adolescents participating in a multi-professional program at home.	This study presented the results of training family caregivers of children and adolescents in home care. In conclusion, it showed that the process of dehospitalizing children and adolescents can be viable, safe and effective through training.	4

Table 1. Descriptive variables and levels of evidence of the 11 articles included in the integrative review. (Cont.)

Article	Authors, year; country (reference)	Study design	Objective	Results and Conclusions/Outcomes	Level of evidence
A4	Flerida *et al*., 2019, USA.[26]	Exploratoryand descriptive research with a qualitative approach	To describe the perceptions and experiences of mothers of babies discharged from hospital after surgery for complex congenital heart disease.	The analyses led to the development of one category, "having to be the only one", which had 3 properties: having no choice but to provide complex care at home, dealing with unexpected roles and dealing with the possibility of death. To highlight the experiences of mothers who provide medicalized care at home for their babies after complex heart surgery. The role of the caregiver is vital, but challenging. Mothers' care at home can be improved by nursing interventions, such as routine screening, as well as evaluation of changes in family coping.	4
A5	Mirjam *et al*., 2019, USA.[27]	Qualitative, descriptive and exploratory study	To explore the experiences of mothers and fathers from the prenatal or postnatal diagnosis of the congenital heart disease of the newborn to the first discharge after heart surgery.	Between the diagnosis and discharge of the child from hospital after heart surgery, the main theme for parents was coping with demanding emotional and practical work. Health professionals must establish trusting relationships with parents while continuously accompanying families, providing consistent and direct information and expressing appreciation for the exceptional emotional and practical work of parents. The awareness of health professionals in relation to the experiences of parents is vital for compassionate family-centered care.	4
A6	Janie *et al*., 2019, USA.[28]	Qualitative, descriptive and exploratory study	To create and test a visual bedside tool to increase parents' partnership with nursing in the development of supportive child care after cardiac surgery.	Practical staff training and informal bedside education in developmental care are needed to educate staff on how to support parents in terms of providing adequate physical care and developmental stimulation for their babies.	4
A7	Ju Yeon, *et al*., 2019, USA.[29]	Exploratoryand descriptive research with a qualitative approach	To investigate the needs of mothers to form partnerships with nurses during the postoperative recovery of children in a pediatric cardiac intensive care unit.	Mothers wanted information about the post-operative stability of their babies in the early stages of recovery and hospital discharge. The condition of the babies strongly influenced the needs of the mothers in relation to partnerships. Therefore, the nurse had to provide information to the mothers individually and encourage them to participate in the care.	4
A8	Alves JMNO, *et al*., 2017, Brazil.[30]	Qualitative, descriptive and exploratory study	To understand the experience of the care partnership by the parents of children with special health needs.	Partnership opportunities include empowering parents and decision-making in partnership, established in a dynamic, unique and continuous relational process. Partnership opportunities are a fundamental prerequisite for providing care that focuses on the child and their parents as resources.	4
A9	Elisabeth Bruce, *et al*., 2017, USA.[31]	Descriptive research with a qualitative approach	To shed light on the perceptions of pediatric nurses (PN) about supporting families with a child with a congenital heart defect.	The analysis revealed that the nurses feel that letting parents get involved in their child's care is of great importance in terms of supporting families. Although they have a paternalistic attitude towards families, they also stated that nurses should inform parents about child care and create a good relationship with the family and build trust between all involved parties.	4
A10	Magalhães, *et al*., 2016, Brazil.[32]	Descriptive research with a qualitative approach	To analyze the educational demands of family members of children with special health needs in the transition from hospital to home.	The educational demands of family members of children with special health needs in the transition from hospital to home come from the clinical care of the child's body, and originate from complex and continuous care, technological care, modified habitual care, medication, developmental care and mixed care.	4
A11	Okido, *et al*., 2016, Brazil.[33]	Qualitative, descriptive and exploratory study	To understand the experience of mothers of technology-dependent children in relation to medication care.	The experiences of these mothers with medication care are permeated by daily challenges, including maternal overload and feelings of anxiety. It is also suggested that nursing develop family-centered care, acting as a facilitator in the process.	4

The concept of assistance has been gaining great repercussions and gaining notoriety with regard to the care of children with CHD. This care must be individualized, offering quality, comfort and safety. It is essential that the team provides adequate and complete assistance. The child with CHD has specificities, needs differentiated care aimed at maintaining cardiac function and its needs. Accordingly, another important aspect to be considered refers to the difficulties related to the complexity of the treatment and care required by the child's illness. This care is so significant that it can change the family's routine, directly affecting the caregiver's personal and professional life. Some parents find it difficult to keep their jobs, which further restricts their financial resources, which are used only for the basic needs of the family and directed towards the treatment of the child.

The main nursing care procedures are described according to the studies selected for the composition of this ILR. In this context, it is noteworthy that, among the main care among the articles analyzed in this research, aspects related to food, oral health, leisure and physical activity, care with medication and the surgical wound, as well as the need to offer support to the family of these children, are highlighted. Such care is closely related to that offered by the nursing team during hospitalization, as well as after hospital discharge. By having direct access to the child and his/her caregiver, the nurse occupies an important place in this care, thus having greater opportunities to identify needs.

In this context, it is necessary for nursing professionals to guide family members about the essential care for these children with CHD, who, through their technical and scientific knowledge and the rescue of the essential humanization of care, provide assistance of quality aimed at the promotion, maintenance and recovery of health, observing the human being in its entirety, thus enabling well-being in the emotional, physical and psychological spheres.

It was found that 100% of the studies expressed Level of Evidence 4 and described outcomes that indicate the importance of the family in terms of attributing the meaning of the disease to the interaction with health professionals in such a way that care is effective. The articles were separated and composed two categories for discussion: care needs pointed out by family caregivers and educational demands that can be met by nurses.

Discussion

Care needs pointed out by family caregivers

Childhood hospitalization is characterized as a period of fear and uncertainty for children and their families, who need the help of nursing professionals, especially when it comes to coping with a chronic illness.[37] In the A2 study,[24] the contribution made by these professionals to participatory assistance focused on caring for children with chronic illnesses and their families, agreed in line with the child's needs, can be observed. The family members suffer when they realize the incurable diagnosis in a child, mainly because they have difficulty in terms of dealing with this reality. Chronic childhood illnesses, because they are incurable, cause sequels over time, imposing limitations on the child, requiring special care skills and competencies from family caregivers for their rehabilitation, requiring training, supervision and observation of care. In this sense, it can be realized that the family, when interacting with the nursing team, seeks to share feelings and perceptions in the face of the finitude and fragility of the human condition that a chronic and severely serious illness imposes.[26] The experiences of children with complex congenital heart disease after hospitalization and family care at home can be improved by nursing interventions, such as routine screening for infant distress, as well as evaluation of changes in family coping or relational challenges that threaten family function (study A4).[26] According to the authors, the analysis led to the development of

a perception that few professionals address the care versus the experiences of parents caring for babies with complex congenital heart disease who are discharged from hospital.

Also aiming for an approach based on a constructivist paradigm, study A5[27] reports the need for health professionals to establish trusting relationships with parents, while continuously accompanying families, providing consistent and direct information and expressing appreciation for the exceptional emotional and practical work of parents. The awareness of health professionals in relation to the experiences of parents is vital for compassionate family-centered care. Study A7[29] investigated the needs of mothers to form partnerships with nurses during the postoperative recovery of children in a pediatric cardiac intensive care unit. Nurses are seen as part of the multiprofessional team, facilitators of knowledge and with scientific training capable of collaborating positively in the process of promoting care for children with morbidities when they return home. In A10,[32] the study demonstrated the need for greater involvement by nurses to improve nursing care for these children, carefully emphasizing that there are still gaps in the production of knowledge by nurses that show this reality, in such a way as to subsidize evidence-based clinical practice. It should be considered that the path to improving care is always that of science, with the development of studies that will strengthen this care, unifying theory and practice is a dialogical integration for the construction of knowledge.[39] The complex care required by these children, such as oxygen therapy, the use of a tracheostomy with or without mechanical ventilation, enteral feeding, dialysis and a continuous medication regimen, entail a heavy burden on caregivers at home.[36]

In this sense, study A11[33] addresses the need for knowledge of the disease, the importance of treatment and mastery of care techniques, significantly reducing the anxiety and stress levels of these caregivers. Thus, according to the study, communication between the family and the health service is essential for building knowledge and empowering the caregiver. In view of the above, nursing becomes the protagonist of care for these children, thus contributing to the improvement and effectiveness of care provision. To this end, nursing care must ensure quality and safety in an individualized way for each person, enabling care based on scientific evidence.

Educational demands that can be met by nurses

Study A1[23] brings up the educational demands related to clinical care in this context, indicating that the work of nursing professionals must be closely related to preparing family caregivers for the development of care in hospital with a view to discharge. Nevertheless, discharge needs to be conceived in a procedural way, in order to include the planning and preparation of families. It is therefore up to nurses, in the health-disease transition, to mediate innovative, complex and continuous care, as well as equipping family members to care for, respecting their knowledge, encouraging reflection, action and empowerment.[35] Study A3[25] addresses the process in which, at the same time as the dedication of trained family members is needed to care for children and adolescents after hospital discharge, certain prerequisites are essential for the child to be able to go home safely, leading to successful rehabilitation. To share information about developmental support care provided by parents during each shift, thus generating opportunities for parents to initiate the care of their children, was the focus of study A6,[28] which aimed at strengthening the importance of the bedside care partnership in terms of preparing parents, family well-being and child outcomes providing comfort, assisting in the daily care routine of these children.

In study A8,[30] important nurse attitudes were identified, such as respect, trust, empathy and advocacy. These attitudes are described as attributes of the partnership model. Relationships established between parents and health professionals that meet these requirements are characterized as promoting parental

empowerment. The adaptation on the part of parents to caring for their children at home requires a broad network of family and social support, with the close involvement of health professionals. Nursing care based on the philosophy of family-centered care and the care partnership model is considered ideal to help them to fulfill the role they will play.[34]

To illuminate the perceptions of pediatric nurses about supporting families with a child with a congenital heart defect was the view of study A9,[31] thus creating a good relationship with the family and generating trust between all involved parties is of great importance in this context. Empowerment, as understood, provides support for structuring educational interventions developed by nurses, with practices guided by applied knowledge. Nevertheless, the understanding of this experience show that the constant changes in the health sector and the job market increasingly demand professional development, with the acquisition of knowledge, technical and relational skills, a critical-reflective stance, favoring the acquisition of skills in the developed activities.[38]

After a child who has undergone CHD surgery is discharged from hospital, care is crucial in the process of maintaining his/her health. There is a need for a way of providing care that aims at ensuring continuity of care at home. The limitations of this study are the small number of studies on the investigated topic and the limitation of texts in Portuguese, English and Spanish. It should be underlined that the search for materials for this survey identified a shortage of literature on the proposed theme, which was a limitation, since the articles found here were very old. Based on this assumption, it is clear that caring for is anchored in scientific knowledge, skill, intuition, critical thinking and creativity, as well as being accompanied by caring behaviors and attitudes. These attitudes have taken shape in nursing, giving visibility to the science it represents today. This highlights the need for new research that seeks to underline the main nursing care and strategies for families and/or caregivers of children with congenital heart disease. Accordingly, studies such as this contribute to the awakening of a new outlook in search of the development of strategies that reach and accompany the families of children with CHD from birth, hospitalization, discharge and growth. This nursing practice corroborates the development of public policies capable of fostering the establishment of care. Nonetheless, it remains a major challenge to address this issue with such clarity and objectivity.

Conclusion

CHD gives family members/caregivers an often negative understanding of the disease, surrounded by pain, suffering, uncertainty, doubt, loss and lack of control. Many adversities are influenced by the disease, causing caregivers to give up their lives to accompany their babies or children, meeting their demands and needs. In general, their family members show satisfaction and make a point of accompanying them throughout the process, whether it is during the discovery of the illness, through hospitalization, to discharge from hospital, not minding the fact that they have to give up their daily lives and go on with their lives according to hospital routines and treatment requirements.

There are many adversities influenced by the disease, causing caregivers to give up their lives to accompany the children and meet their demands and needs. It is assumed that the reflections made on the questions about nursing care will have a positive impact on the care provided by nurses in their scientific, technical and human spheres, given that these professionals are an integral and fundamental part of the health team, co-responsible for providing care for human beings in a holistic, integrated and individualized way.

The study showed that the nursing guidelines focus on basic care and family support for these children. Lastly, this study highlighted the important role of nurses in terms of consolidating guidelines for the

care needs of these children. The articles analyzed in this research show evidence of the theme of nursing care for children with CHD, where the development of guidelines for family members and caregivers will help in a more reliable and attentive practice. In the health field, although the disease is old, there is no specific nursing guide for children with CHD, either in childhood or in adulthood. Given these aspects, it is essential that this study can help nurses and/or other health professionals to develop educational and clinical interventions in the health education field and other interventions that favor the full and correct development of care for children with CHD.

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Original Article

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Effectiveness of Resiliency and Recovery Program on Compassion Fatigue among Nursing Officers working in selected Hospitals in India

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Effectiveness of Resiliency and Recovery Program on Compassion Fatigue among Nursing Officers working in selected Hospitals in India

Objective. The study objective was to evaluate the effectiveness of Resiliency and Recovery Program on Compassion Fatigue level of Nursing Officer from selected hospitals of Pune City (India). **Methods.** The study used a quasi-experimental approach involving single group pre-test and post-test design. 100 nursing officers, working in selected hospitals of Pune city, who were willing to participate were selected using non probability convenience sampling. The data was collected using *The Professional Quality of Life Scale: Compassion Satisfaction and Fatigue* (ProQoL) Version 5 of Stamm. The study included pre-test, resiliency and recovery program and post-test. Resiliency and Recovery Program is an intervention aiming to develop five resiliency skills or antibodies including (a) self-regulation, (b) perceptual maturation, (c) intentionality, (d) self-care and (e)

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connection and support. **Results.** Statistically significant difference was revealed between the pre-test and post-test score means: Compassion Satisfaction (pre-test = 28.50 to post-test = 31.0; t-18.6671, $p<0.001$), Burn-out (pre-test = 35.2 to post-test = 31.7; t-15.00, $p<0.001$), and Secondary Traumatic Stress (pre-test = 37.4 to post-test = 33.07; t-14.8996, $p<0.001$). **Conclusion.** Resiliency and Recovery Program had a significant impact on Compassion Fatigue, leading to an increase in Compassion Satisfaction, and a reduction in Burnout and Secondary Traumatic Stress. Inculcating Resiliency skills in nursing officers can help them in reducing compassion fatigue and thus aids in health promotion.

Descriptors: burn out, professional; compassion fatigue; nurses.

Efectividad del Programa de Resiliencia y Recuperación sobre la Fatiga por Compasión entre los profesionales de Enfermería que trabajan en Hospitales seleccionados de la India

Objetivo. El objetivo del estudio era evaluar la eficacia del Programa de Resiliencia y Recuperación en el nivel de Fatiga por Compasión de los profesionales de enfermería de los hospitales seleccionados de la ciudad de Pune (India). **Métodos.** El estudio cuasi-experimental con evaluación pre y post-intervención en un solo grupo. Se seleccionaron 100 profesionales de enfermería que trabajaban en hospitales seleccionados de la ciudad de Pune mediante un muestreo no probabilístico por conveniencia. Los datos se recogieron utilizando la *Escala de calidad de vida profesional*: *Compassion Satisfaction and Fatigue (*(ProQOL) Version 5 de Stamm. El estudio incluyó una prueba previa, un programa de resiliencia y recuperación y una prueba posterior. El Programa de Resiliencia y Recuperación es una intervención cuyo objetivo es desarrollar cinco habilidades o anticuerpos de resiliencia que incluyen (a) autorregulación, (b) maduración perceptiva, (c) intencionalidad, (d) autocuidado y (e) conexión y apoyo. **Resultados.** Se observaron diferencias estadísticamente significativas entre las puntuaciones promedio obtenidas antes y después de la intervención en la satisfacción con la compasión (antes = 28.5 a después = 31; t-18.6671, $p<0.0001$), el agotamiento (antes = 35.2 a después = a 31.7; t-15,00, $p<0.001$) y el estrés traumático secundario (antes = 37.4 a después 33.1; t-14.8996, $p<0.001$). **Conclusiones. E**l Programa de Resiliencia y Recuperación tuvo un impacto significativo en la Fatiga por Compasión, lo que condujo a un aumento de la Satisfacción por Compasión y a una reducción del

Burnout y del Estrés Traumático Secundario. Inculcar habilidades de resiliencia a los profesionales de enfermería puede ayudarles a reducir la fatiga por compasión y, por tanto, a promover la salud.

Descriptores: agotamiento professional; desgaste por empatía; enfermeras y enfermeros.

Eficácia do Programa de Resiliência e Recuperação na Fadiga por Compaixão entre Profissionais de Enfermagem que Trabalham em Hospitais Selecionados na Índia.

Objetivo. O objetivo do estudo foi avaliar a eficácia do Programa de Resiliência e Recuperação no nível de Fadiga por Compaixão em profissionais de enfermagem em hospitais selecionados na cidade de Pune (Índia). **Métodos.** Foi realizado um estudo quase experimental com avaliação pré e pós-intervenção em grupo único. Foram selecionados 100 profissionais de enfermagem que trabalham em hospitais da cidade de Pune por meio de amostragem não probabilística de conveniência. Os dados foram coletados por meio da versão 5 da Escala de Qualidade de Vida Profissional: Compaixão, Satisfação e Fadiga (ProQoL) de Stamm. O estudo incluiu um pré-teste, um programa de resiliência e recuperação e um pós-teste. O Programa de Resiliência e Recuperação consistiu em uma intervenção cujo objetivo é desenvolver cinco habilidades de resiliência ou anticorpos que incluem (a) autorregulação, (b) maturação perceptual, (c) intencionalidade, (d) autocuidado e (e) conexão e suporte. **Resultados.** Foram observadas diferenças estatisticamente significativas entre as pontuações médias obtidas antes e depois da intervenção em satisfação por compaixão (antes = 28.5 a depois = 31; t-18.6671, $p<0.0001$), burnout (antes = 35.2 a depois = a 31.7; t-15.00), $p<0.001$) e estresse traumático secundário (antes = 37,4 a depois 33.1; t-14.8996, $p<0.001$). **Conclusões.** O Programa de Resiliência e Recuperação teve um impacto significativo na Fadiga por Compaixão, levando a um aumento na Satisfação por Compaixão e a uma redução no Burnout e no Estresse Traumático Secundário. Incutir competências de resiliência nos enfermeiros pode ajudá-los a reduzir a fadiga da compaixão e, portanto, promover a saúde.

Descritores: esgotamento profissional; fadiga por compaixão; enfermeiras e enfermeiros.

Introduction

A nurse is constantly exposed to the trauma and suffering of others as a part of professional life. And it is almost impossible that their personal life is not impacted by it. According to Lombardo and Eyre,[1] an empathetic nurse becomes victim of the constant stress of meeting the requirements of patients and their family members, leading to compassion fatigue, which affects the nurse in terms of physical and emotional health. Compassion fatigue reduces job satisfaction as well as leads to decreased productivity and increased turnover.

Figley[2] coined the term *Compassion Fatigue* and according to him compassion fatigue occurs because of continuous exposure to chronic stress in caring for patients who go through pain, grief, catastrophe, and misery. Figley defined Compassion Fatigue as "a state of tension and preoccupation with the individual or cumulative trauma of clients as manifested in the following ways: Re-experiencing the painful events, avoidance of reminders of the traumatic event, persistent arousal, Combined with the effects of cumulative stress (burnout)". Joinson[3] describes Compassion Fatigue as being "emotionally devastating." Due to compassion fatigue nurses experience problems like anger, detachment, depression, dreading going to work, feeling irritable, fatigue, a lack joyful affect, and physical complaints such as frequent headache and stomach ache. This can ultimately lead to decreased productivity at work and job satisfaction and thus patients receive a lower standard of nursing care. Compassion fatigue is a severe emotional pain which is related to the physical, emotional, and spiritual fatigue which is going beyond the individual and leading to a subtle turn down in the vigour to care for one and others.

Nursing officers working with suffering individuals often share the emotional burden of people they care for. This indirect exposure to pain, suffering, and trauma involves an inherent risk of significant cognitive, behavioural, and emotional changes in the Nursing officer and makes them vulnerable to developing Compassion Fatigue Few risk factors in developing compassion fatigue are as follows: high levels of stress, history of trauma, negative coping skills, low levels of social support, and bottling up of emotions or avoiding expression of emotions.[4] Compassion Fatigue is a burning issue and requires careful attention and intervention. Lee and Hen[5] studied prevalence of burn out among 1896 Taiwanese nurses, and they identified that 79% of the nurses had burn-out. Rajeswari and Sreelekha[6] studied the level of stress among 200 nurses working in a tertiary care hospital in India, and identified that 59.5% of them had high level of stress. Duffy *et al.*[7] assessed secondary traumatic stress among emergency nurses and concluded that 64% met the criteria for secondary traumatic stress. Rajeswari[8] examined the level of burnout among 200 nurses employed in a tertiary care hospital and found that 54% of them had severe burnout.

Resiliency and Recovery Program is an intervention aiming to develop five resiliency skills or antibodies including (a) self-regulation, (b) perceptual maturation, (c) intentionality, (d) self-care and (e) connection and support. Self-regulation is the ability to intentionally control the activity of one's Autonomic Nervous System while involved in the daily activities and thus lessen the energy spend. It includes consistently moving away from the constant activation and dominance of Sympathetic Nervous System (SNS) towards the comfortable relaxation of Parasympathetic Nervous System (PNS). Intentionality is the opposite of reactivity. It includes deliberateness and integrity. Perceptual maturation is more cognitive skill than behavioural skill. It involves maturation of our perception of workplace to making them less stressful. Feeling heard, supported, cared about and rightly understood by peers is the vital element of connection and support to maintain resiliency and to defeat Compassion Fatigue. The researcher is interested to study the effectiveness of Resiliency and Recovery Program on compassion fatigue among nursing officers because Compassion Fatigue is often overlooked and neglected. Taking care of the mental health of the nurse who works at the bed side is the need of the hour. The objective of this study was to evaluate the effectiveness of Resiliency and Recovery Program on Compassion Fatigue level of Nursing Officers from selected hospitals of Pune City (India).

Methods

The study used quantitative quasi experimental approach involving single group pre-test and post-test design samples included 100 nursing officers from selected hospitals of Pune city, India. Permission for conducting the research was taken from concerned authorities of the Hospitals from where sample was collected. Non probability convenience sampling was used to select the samples. This sampling method was adopted since the researcher had limitations with respect to time and fund. The participants signed a written informed consent, after sufficient explanation regarding the purpose and process of the study.

The tool for data collection had two sections, Demographic data, and The Professional Quality of Life Scale: Compassion Satisfaction and Fatigue Version 5 (ProQoL),[9] which has three subscales namely Compassion Satisfaction (CS), Burnout (BO), and Secondary Traumatic Stress (STS). ProQoL is a standardized tool and permission was obtained to use it. It has 30 questions out of which 10 questions are intended to measure compassion satisfaction, 10 questions for burn-out and 10 questions for secondary traumatic stress. In each subscale the sum of actual scores is obtained by adding up the score in the 10 items and then the score is equalized to the raw score and it is interpreted as low, average, and high. The minimum score of each subscale is 10 and the maximum score is 50. Professional quality of life is interpreted as high when the score in compassion satisfaction subscale is high, score in both burnout as well as secondary traumatic stress are low, average when the scores are average in in all three sub scales and low when the score in compassion satisfaction subscale is low, score in both burnout as well as secondary traumatic stress are high.

Psychometric properties of the scale. The alpha reliabilities for the scales were: Compassion Satisfaction alpha = 0.87, Burnout alpha = 0.72 and Compassion Fatigue alpha = 0.80. PROQoL depicted good construct, convergent and discriminant validity.

Research study included pre-test, Resiliency and Recovery Program and post-test. The participants were nursing officers from three hospitals in Pune, India selected based on the eligibility criteria of willingness and availability for study. The intervention was Resiliency and Recovery Program which is a training to develop five resiliency skills or antibodies including (a) self-regulation, (b) perceptual maturation, (c)

intentionality, (d) self-care and (e) connection and support. Outcome was assessed by measuring the increase in mean compassion satisfaction score and decrease mean scores of burnout and secondary traumatic stress. The data analysis was done with Mean, standard deviation, paired t test and chi square test.

Ethical Consideration: Institutional Research Committee clearance obtained, Permission for conducting the research was taken from concerned authorities of the Hospitals from where sample was collected. The participants signed a written informed consent, after sufficient explanation regarding the purpose and process of the study. Sample Confidentiality was maintained.

Results

100 nurses were selected for the research from selected hospitals of Pune City.

Recruitment: 100 nursing officers from three hospitals attended the sessions in four groups of 25 each. On day one pre-test was conducted using the tool. The data was examined using frequency, percentage, mean and standard deviation to understand the level of compassion satisfaction, burn out and secondary traumatic stress. On day 2 the session on Resiliency and Recovery Program was conducted and post test was conducted after completion of five weeks. The same schedule was followed for all four groups. (Figure 1)

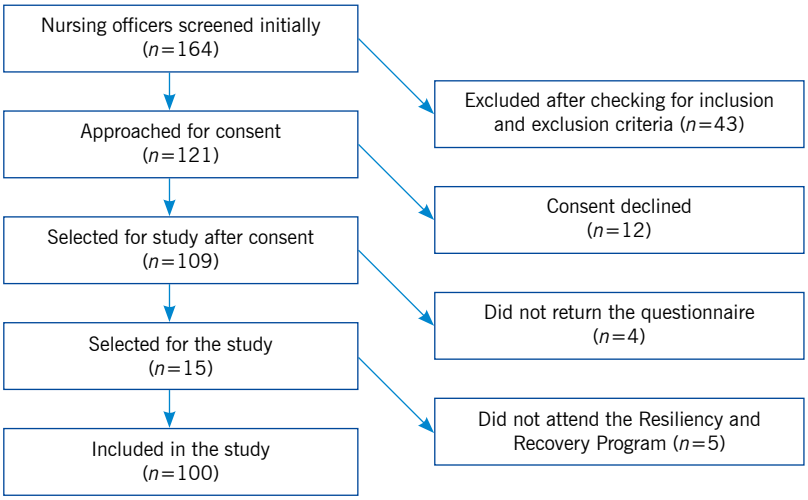

Figure 1. Participant flow diagram

Analysis of Demographic variables. 12 demographic variables were considered in the study. Table 1 describes the frequency of population based on their personal characteristics. Majority of the nurses belonged to the age group 21 -25 years. 63% were females. 69% of them had completed General Nursing and Midwifery course. 58% of them had 1-5 years of experience. Majority of them were working in general wards.

Table 1. Distribution of population based demographic data (*n*=100)

Demographic variable	Frequency and %
Age	
21 – 25 years	51
26 – 30 years	33
31 – 35 years	11
36 – 40 years	5
Gender	
Male	37
Female	63
Marital Status	
Married	35
Unmarried	49
Divorced	3
Widowed	3
Professional Qualification	
G.N.M	69
B.Sc. Nursing	20
PB.B.Sc. Nursing	11
Years of Experience	
1-5 years	58
6-10 years	34
11 – 15 years	8
Area of Work	
Casualty	26
ICU/HDU	19
General Ward	55
Area of living	
Urban	68
Rural	32
Type of family	
Joint	22
Nuclear	46
Extended	32
Selection of profession with interest	
Yes	78
No	22
Coping Strategies Adopted	
Listening to music	24
Reading	11
Social media	54
Religious activity	7
Sleeping	4
History of any physical illness *	
Yes	23
No	77
Any recent loss	
Yes	18
No	82

* Such as Asthma, Diabetes Mellitus, Hypertension, Anaemia etc

Section 2. Analysis of Compassion Fatigue among Nursing Officers. In pre-test, in all subscales of ProQOL, moderate levels were more frequent. It should be noted that a significant proportion of participants had high levels of the subscales of compassion fatigue, as follows: 23% of them had low compassion satisfaction, 19% had high burnout and 22% had high level of Secondary Traumatic Stress. Table 2 represents the distribution of population according to score in ProQOL.

Table 2. Distribution of population according to score in ProQOL (*n*=100)

Score Level	Compassion Satisfaction	Burnout	Secondary Traumatic Stress
Low (<=22); %	23%	12%	8%
Moderate (23-41); %	71%	69%	70%
High (≥42); %	6%	19%	22%
Total; mean±SD)	28.50±7.30	35.20±6.90	37.40±6.46

Section 3. Analysis of effectiveness of Resiliency and Recovery Program on compassion fatigue level among Nursing Officers. Analysis of the data indicated changes in the compassion fatigue level of nursing officers after the participation in Resiliency and Recovery Program. Researcher applied paired t-test for the effectiveness of Resiliency and Recovery Program on Compassion satisfaction, burn out and secondary traumatic stress among Nursing Officers. Average compassion satisfaction score among nursing officers in pre-test was 28.50 which increased to 31.01 in post-test. t-value for this test was 18.6671 with 99 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average burnout score among nursing officers in pre-test was 35.20 which decreased to 31.70 in post-test. t-value for this test was 15.00 with 99 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average Secondary Traumatic Stress

score among nursing officers in pre-test was 37.40 which reduced to 33.07 in post-test. t-value for this test was 14.8996 with 99 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. It is evident that the burnout and secondary traumatic stress among nursing officers reduced significantly after Resiliency and Recovery Program as well as compassion satisfaction increased. Resiliency and Recovery Program is significantly effective in improving the compassion satisfaction and reducing burn out and secondary traumatic stress among nursing officers. Table 3 shows the change in score ProQOL after Resiliency and Recovery Program and Table 4 reveals the result of paired t test for assessing the effectiveness of Resiliency and Recovery Program on compassion fatigue level among Nursing Officers. The result shows that in all three subscales there was a statistically significant difference between pre and post measurements. The score increased in subscale Compassion Satisfaction while it decreased in subscales Burnout and Secondary Traumatic Stress.

Table 3. Distribution of population based on pre-test and post-test score in ProQOL (*n*=100)

Level	Compassion Satisfaction		Burnout		Secondary Traumatic Stress	
	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)
Low	23	10	12	17	8	10
Moderate	71	78	69	76	70	83
High	6	12	19	7	22	7

Table 4. Result of paired t-test (*n*=100)

Sub scale	Group	Mean	SD	SEM	t- value	df	*p*-value
Compassion Satisfaction	Pre-test	28.50	7.30	0.73	18.6671	99	0.0001
	Post-test	31.01	7.23	0.72			
Burnout	Pre-test	35.20	6.90	0.69	15.00	99	0.0001
	Post-test	31.70	6.79	0.68			
Secondary Traumatic Stress	Pre-test	37.40	6.46	0.65	14.8996	99	0.0001
	Post-test	33.07	6.33	0.63			

Section 4. Analysis of association between selected Demographic Variables and Compassion fatigue level among Nursing Officers. Marital Status, Selection of profession with interest, History of physical illness and Years of experience were found to have significant association with Compassion Satisfaction among nursing officers. Selection of profession with interest, History of physical illness were found to have significant association with Burn-out among nursing officers. Professional Qualification, Selection of profession with interest, History of physical illness and Years of experience were found to have significant association with Secondary traumatic stress among nursing officers. The result of chi square test for association is depicted in Table 5. A *p*-value less than 0.05 indicates statistically significant association between the variables.

Table 5. Result of chi square test

Demographic Variable	Compassion Satisfaction			Burnout			Secondary Traumatic Stress		
	$\chi 2$ value	DF	*p*-value	$\chi 2$ value	DF	*p*-value	$\chi 2$ value	DF	*p*-value
Marital Status	16.78	3	0.01	7.94	3	0.241	8.90	3	0.178
Professional Qualification	4.89	2	0.29	6.30	2	0.177	10.03	2	0.039
Selection of profession with interest	32.72	1	<0.0001	15.85	1	<0.001	24.59	1	<0.0001
Years of experience	10.80	2	0.028	8.30	2	0.089	9.74	2	0.045
History of any physical illness	8.06	1	0.017	35.55	1	<0.0001	10.21	1	<0.01

Discussion

In the current study, the improvement in the score of compassion satisfaction, and reduction in the scores of burn-out and secondary traumatic stress among nursing officers is statistically significant. The mean score of compassion satisfaction, burnout, and secondary traumatic stress among nursing officers in the pre-test was 28.5, 35.2, 37.4 and in post-test 31.01, 31.70, 33.07 respectively. The study concludes that resiliency and recovery programme is effective in reducing compassion fatigue. The study findings can be applied in planning various staff development programs for nurses.

Current study results are in line with the study conducted by Potter et. *al,*[10] to find the effectiveness of compassion fatigue resiliency programme on 13 oncology nurses working in cancer centre, US. The study concludes that

compassion fatigue resiliency programme is effective in managing compassion fatigue. The present study is also supported by research conducted by Daxesh,[11] to examine the effect of guided imagery on burnout among 60 nurses Vadodara. They concluded that guided imagery is effective in reducing burnout among nurses. The present study is also supported by the result from a study conducted by Muliira and Ssendikadiwa[12] to assess professional quality of life of Ugandan midwives, which showed that midwives had average level of burnout 88%, compassion satisfaction 68%, and compassion fatigue (STS) levels 68%. And the mean score on the ProQOL showed compassion satisfaction was 19, burnout was 36.9 and secondary traumatic stress was 22.9.

According to a study done by Kumari and Bist,[13] to identify the prevalence of burnout, compassion fatigue, and compassion satisfaction among staff nurses in selected hospitals of Gautam Buddh Nagar, majority of 43 (86%) midwife nurses were having average level of compassion fatigue (STS), average level of burnout was found in 33 (66%) of midwife nurses and 16 (32%) midwife nurses had high level of compassion satisfaction. Smart *et al.* [14] concluded that Caregivers working in a noncritical area scored less whereas the caregiver working in critical area scored high in the subscale of burnout in the professional quality of life.

Limitations. The study did not have randomization and control group.

Conclusion. The present study concludes that participant's nurses were vulnerable to compassion fatigue and Resiliency and Recovery Programme was effective in reducing the level of burn out and secondary traumatic stress. Hence it must be further studied and intervention must be undertaken to prevent development of compassion fatigue.

Recommendation. In-service programs focusing on resiliency skill training must be conducted for the nursing officers to reduce compassion fatigue and Compassion Fatigue and its prevention and management must be included in the syllabus for undergraduate nursing students.

Data Accessibility: The corresponding author can supply the dataset on reasonable request.

Funding: nil.

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Effect of Digital applications on maternal as well as neonatal outcomes in Young pregnant girls: A Scope Review

Review

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Effect of Digital applications on maternal as well as neonatal outcomes in Young pregnant girls: A Scope Review

Abstract

Objective. To understand the effect of digital applications on maternal and neonatal outcomes in young pregnant girls. **Methods.** A PubMed, CINAHL and Medline online database search was conducted, and related studies were included the databases were searched in order to carry out a more in detailed search of the available literature utilizing keywords like “digital technology”; “adolescent mothers”; and “infant, newborn”, as well as Boolean operators to generate papers pertinent which were correlating with the objective of the study. **Results.**The findings revealed that the PPPs employed produced both positive and negative effects on mothers and newborns. Some were effective, especially in aspects related to improved mental health, while others did not necessarily support the adolescents in preparing for pregnancy and childbirth, but rather

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raised their anxiety levels. Similarly, the use of these apps decreased the use of emergency neonatal services by the adolescent mothers and the infants were lower in likelihood of exclusive breastfeeding. Participants appreciated the social media-based instruction, but this exposure did not translate into considerable change in routines and behaviors.

Conclusion. Digital and web-based solutions had the ability to influence adolescent pregnancy outcomes, but further research is needed to assess the extent to which these support services are useful in this Population Group.

Descriptors: digital technology; adolescent mothers; infant, newborn.

Efecto de las aplicaciones digitales en los resultados maternos y neonatales de las jóvenes embarazadas: Una revisión de alcance

Resumen

Objetivo. Conocer el efecto de las aplicaciones digitales en los resultados maternos y neonatales en jóvenes embarazadas. **Métodos.** Se realizó una estrategia de búsqueda en las bases de datos en línea PubMed, CINAHL y Medline utilizando los términos "digital technology"; "adolescent mothers"; y "infant, newborn", y operadores booleanos. **Resultados.** Los hallazgos revelaron que las APPs empleadas produjeron efectos tanto positivos como negativos sobre las madres y los neonatos. Algunas fueron efectivas, especialmente en los aspectos relacionados con la mejoría en la salud mental, mientras que otras nó ayudaron necesariamente a las adolescentes a prepararse para el embarazo y el parto, sino que más bien elevaron sus niveles de ansiedad. Del mismo modo, el uso de estas aplicaciones disminuyó la utilización de servicios neonatales de urgencia por las madres adolescentes y los neonatos tuvieron menor probabilidad de tener lactancia materna exclusiva. Las participantes apreciaron la instrucción basada en los medios sociales, pero esta exposición no se tradujo en un cambio considerable de rutinas y hábitos. **Conclusión.** Las soluciones digitales y basadas en la web tuvieron la capacidad de influir en los resultados de los embarazos de adolescentes, pero se requiere de otras investigaciones para evaluar hasta qué punto son útiles estos servicios de apoyo en este grupo poblacional.

Descriptores: tecnología digital; madres adolescents; recién nacido.

Efeito dos aplicativos digitais nos resultados maternos e neonatais de mulheres grávidas jovens: uma revisão de escopo

Objetivo. Conhecer o efeito dos aplicativos digitais nos resultados maternos e neonatais em gestantes jovens. **Métodos.** Foi realizada uma estratégia de busca nas bases de dados online PubMed/Medline e CINAHL e utilizando os termos "tecnologia digital"; "mães adolescentes"; e "bebê, recém-nascido" e operadores booleanos. **Resultados.** Os resultados revelaram que os APPs utilizados produziram efeitos positivos e negativos nas mães e nos neonatos. Alguns foram eficazes, especialmente em termos de melhoria da saúde mental, enquanto outros não ajudaram necessariamente os adolescentes a prepararem-se para a gravidez e o parto, mas antes aumentaram os seus níveis de ansiedade. Da mesma forma, o uso desses aplicativos diminuiu a utilização de serviços neonatais de emergência por mães adolescentes e os neonatos tiveram menor probabilidade de serem amamentados exclusivamente. Os participantes apreciaram a instrução baseada nas redes sociais, mas esta exposição não se traduziu em mudanças consideráveis nas rotinas e hábitos. **Conclusão.** As soluções digitais e baseadas na web tiveram a capacidade de influenciar os resultados da gravidez na adolescência, mas são necessárias mais pesquisas para avaliar até que ponto estes serviços de apoio são úteis neste grupo populacional.

Descritores: tecnologia digital; mães adolescentes; recém-nascido.

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Introduction

Adolescent pregnancies are a global difficulty that affect excessive-, center-, and developing nations but, adolescent pregnancies are extra commonplace in marginalized groups round the world, regularly due to poverty and a loss of get right of entry too opportunities for schooling and employment.[1] Adolescent females were negatively impacted by early motherhood, in addition to their spouses, households, groups, and colleges. Teenage mothers aren't prepared to become mothers; there need to be bodily, psychological, social, and cognitive instruction for the transition to motherhood.[2] Teenage women find motherhood hard and complicated because they need to concurrently manage their responsibilities as mothers and the developmental demanding situations of childhood.[3] They must adjust to their growing social responsibilities, the physical changes brought on by puberty, their substantial cognitive development, and the concern that comes with caring for a baby.[4] The general public of adolescent mothers do no longer have sturdy socioeconomic backgrounds, making the adjustment to parenthood tough for them.[5] The process of achieving the maternal role entails learning the necessary skills, developing appropriate behaviour, and establishing one's own maternal identity.[6] Mother adjustment and the transition to adulthood are significantly impacted by preparation for taking on the mother role.

The transition from being a teen without children to being a mother is challenging.[7] Teen mothers face a variety of physical, psychological, social, and spiritual challenges, including high-risk pregnancies and births, mental wellness issues,[8,9] various kind of responsibilities, role conflict and identity uncertainty, insufficient social as well as spiritual hold, disturbance, and a lack of maternal skills when coping with novel circumstances and significant changes.[10] Teen mothers and their neonates usually suffer from various kind of health risks because of the result of early pregnancies.[11] The important reason of the mortality for girls in young age across the countries is complications during labor and childbirth, with low as well as middle income countries accounting for 99% of all maternal fatalities[12,13] among women in the age from 15 years and 49 years internationally. Eclampsia,[14] puerperal endometritis,[15] and systemic infections[16] are more prevalent in teenage moms between the ages of 10 years and 19 years than in those between 20 and 24.[17] Additionally, between the ages of 15 and 19, more than 3 million insecure abortions occur each year, which raises maternal mortality, morbidity,[18] and long term health difficulties.[19] Preterm birth, gestational hypertension, low child birth weight, and other neonatal difficulties are among the prenatal and postnatal issues that these teenagers are more likely to experience.[20] There is elevated risks for preterm birth, low birth weight, and neonatal death across all adolescent groups. Low Apgar scores at 5 minutes were more likely among babies delivered to adolescent moms who were 17 years old or younger.[21]

Family, friends, and partners are usually sources of support for those who are pregnant or just gave birth.[22] Recent initiatives to help young mothers include home visits and community-based programmes reported that the deep ties developed during home visits may help home programmed visit generate greater results with teenagers who are harder to engage[23] Social media is a significant component of digital media. It refers to internet-based channels of mass communication that enable user interactions, with the content being primarily user-generated.[24,25] In this setting, pregnant women are increasingly turning to the internet for social and emotional support,[26] as well as knowledge on pregnancy-related matters like diet. Expectant mothers may turn to social and web media or internet-based platforms rather than conventional sources as technology[27] develops for information or support pertaining to pregnancy. Since the modern social structure has changed, many women are now emotionally and physically separated from their network of family and friends.[28] Lack of knowledge and experience, the influence of peers, and high risk behaviors in teenagers; underscores the crucial role of health care professionals.[29,30] Early motherhood is be viewed as one of significant public health concerns and is examined by obstetricians and gynecologists, pediatricians, child psychologists, sociologists, family doctors, and nurses.[19] Providing high quality services involves awareness of the requirements of adolescent moms, their problems and talents. Like-minded women have the opportunity to interact with one another and gain social support through online alternative support networks.[31] Web-based support services provide user anonymity, tumbling dishonor and encouraging the discussion of sensitive topics. They are reachable from anywhere at any time. Additionally, the majority of expecting moms utilize the internet to get information on varied topics, including labour and delivery as well as nursing, and they see it as a reliable source of knowledge. Therefore, the choices a mother makes about the care of her unborn child may be influenced by information she finds online.[32]

This Scope review is to essentially examine the existing facts that contributes to effects of the online or digital based Applications on maternal and the neonatal outcomes in pregnant adolescents' girls. The research question focus on the following issues: (1) What are the various technological web applications used for maternal and neonatal well-being? and (2) What are the various maternal and neonatal outcomes in terms of benefits and effects of these technological applications?

Methods

This is a scoping review. To find databases that could contain references, a variety of internet search engines were also employed. The review questions served as the direct inspiration for the specified criteria for choosing the studies. Written justifications were given for both inclusion and exclusion. Studies that focused on women from the age of 18 to 25 or identified their demographic as teenagers, early adolescents or adolescents were included. Any online service that allows users to share material with one another is considered a digital application. Physical (nutrition, exercise, breast-feeding behaviors, complications during labor, and risky habits like drinking alcohol and cigarette smoking) and psychosocial (mental wellness, anxiety, depression, feelings of isolation and tension, self-worth, birth preparation, and parenthood outcomes) factors have been assessed in relation to the outcomes of mothers. Preterm delivery, low birth weights, sudden infant death syndrome (SIDS), and obesity were all effects on children or infants. The requirements for inclusion were satisfied by all results gathered. We excluded reviews, abstract concepts, proceedings of conferences, the letters, commentary, comments, opinions, and book chapters in favor of studies with or without a comparison group that were pertinent to addressing our research concerns. We didn't include studies that weren't in English. Selected studies were put through a more thorough quality assessment using wide critical evaluation guidelines. PEO criteria was taken into

account where the population of young mothers from 18 to 25 years of age was targeted who had exposure of any kind of technological application/ web based application or digital application and displaying any kind of effect in terms of maternal and neonatal outcome.

Strategies for data collection. The databases were selected for this investigation, and they were used for all phases of data collection. The CINAHL, Pubmed and Medline were all searched. The search was conducted using logical operators and keywords, to reduce data saturation. Therefore, it is crucial to show that a thorough, extensive, and wide search was conducted. MeSH words used for the search. Search strategy involved ((“pregnancy in adolescence”[MeSH Terms] OR (“pregnancy”[MeSH Terms] AND “adolescent”[MeSH Terms])) OR ((((((“adolescen*”[Title/Abstract] OR OR “young”[Title/Abstract]) OR “”teen*”[Title/Abstract]) OR “high school*”[Title/Abstract]) OR “girl*”[Title/Abstract]) AND ((((“pregnan*”[Title/Abstract] OR “mother*”[Title/Abstract]) OR “birth”[Title/Abstract]) OR “maternal”[Title/Abstract])))) AND (“digital media”[MeSH Terms] OR ((((((((((((“social media”[Title/Abstract] OR “social network*”[Title/Abstract]) OR “social network site*”[Title/Abstract]) OR “forum*”[Title/Abstract]) OR “chatroom*”[Title/Abstract]) OR “ communications media “[Title/Abstract]) OR “new digital media”[Title/Abstract]) OR “technology”[Title/Abstract]) OR “telehealth”[Title/Abstract]) OR “e-health”[Title/Abstract]) OR “m-health”[Title/Abstract)). Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) criteria were followed.[33] To guarantee research endorsed updated methods for providing for expectant mothers, we only included publications from the previous 12 years.

Study Selection. Two authors independently reviewed all papers that were found through database searches using MESH terms and worked with a third author to address disagreements. The entire texts of the studies chosen in level one were obtained, and the same two writers independently assessed each one to determine its eligibility. The grounds for exclusion were meticulously classified and recorded.

Data Extraction. Two reviewers independently collected the data from each report. The study design, Time period, participant characteristics, description of the intervention, maternal outcomes, newborn or child outcomes, findings, and limitations were all gathered using a standard proforma. Two reviewers collected data and worked independently.

Quality and Bias Assessment. The Newcastle-Ottawa Quality Assessment Scale[34] quantitatively evaluates publications by assigning a s rating based on the selection, comparability, and exposure categories. The Cochrane Risk of Bias[35] was used to analyse random controlled trials (RCTs), which were focusing on various aspects of trial design, conduct, and reporting. Joanna Briggs Institute instrument[36] used to assess the qualitative and quasi experimental studies based on checklist.

Search Results. A Boolean search for relevant phrases was performed yielded altogether 270 records. This restricted the number of records to 122 in CINAHL, 88 in Medline, and 70 in PubMed. Diagrams of PRISMA’s flow were made as displayed in Fig 1. A few things were eliminated since they weren’t pertinent to the subject of the study. After removing the duplicates, the abstracts of each publication were examined. 68 duplicates were removed and hence 202 records were found suitable and eligible for next screening. 2 independent authors performed the screening where 190 records were excluded with reasons (interventions were not based on online or digital platform $n=92$, age group more than 25 years $n=88$, interventions was not related to desired outcomes $n=10$). Out of the left over 12 articles, 5 articles removed as no full length paper was available ($n=3$), and conference proceeding ($n=2$).

Synthesis of Results. The studies are summarised in Table 1. Adolescent girls in five studies received active intervention.[39-43] Of these studies, one dealt with contacts between adolescents and medical professionals,[38] two with interactions between adolescents[38,40] and the final two dealt just with online material.[37,38] Synthesis of results followed convergent synthesis where numerous outcomes gathered both before and after the intervention, and were assessed using self-reports, post intervention questionnaires and results targeting the research questions which specifically discussed in three sections which are the use of digital applications, Outcomes for the mothers and outcome for the neonates.

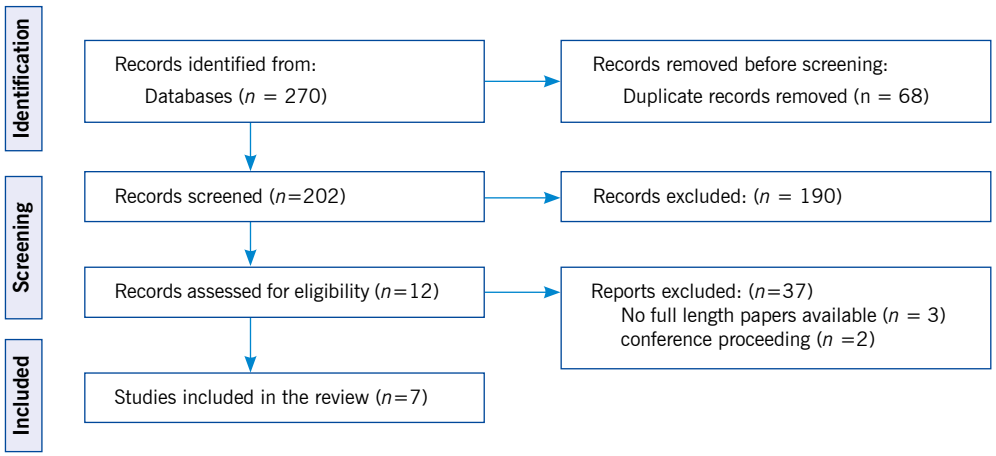

Figure 1. Prisma Flowchart

Results

Table 1 depicts the study characteristics and details are discussed as follows.

Table 1. Study Characteristics

Author and Reference	Design	Sample size	Exposure	Key findings	Quality assessment Instrument	Rating
Fleming *et al.*[37]	Qualitative	19	Internet based Knowledge	This study showed that teenagers wanted and needed information on childbirth that was clear, accurate, and easily available. Giving the adolescent pregnant girls reliable electronic resources informed them, boost their confidence, and make them more prepared for giving birth.	JBI (qualitative research)	Include; risk of bias: low

Table 1. Study Characteristics (Cont.)

Author and Reference	Design	Sample size	Exposure	Key findings	Quality assessment Instrument	Rating
Hudson et al.[38]	RCT	15 (Experiment Group) 19 (Control group)	Internet education resource	Assuming α=0.10, p<0.10; Intervention group had lower self-esteem than control group at 6 months; scale: RSEa Intervention group had higher levels of perceived competence after 6 months; scale: PPSb Intervention group had higher parenting satisfaction levels after 6 months; scale: WPBL-Rc ERd use reduced >50% in intervention group compared to control group (35.7% vs 70.6%); data collection: questionnaire Intervention group was less likely to exclusively breastfeed compared to control group; data collection: questionnaire	Cochrane Risk of Bias 2	Include; risk of bias: low
Jaideep Malhotra *et al.*[39]	RCT (Longitudinal study)	512 Experimental group-255 Control group-257	Digital intervention on BCP	Stress levels and sleep habits have significantly improved	Cochrane Risk of Bias 2	Include; risk of bias: low
Vander *et al.*[40]	Quasi experimental	22	Intervention by social media	Both teenage and adult low income pregnant females continue to have poor food quality.	JBI (Quasi experimental studies)	Include; risk of bias: low
Dhiren Modi *et al.*[41]	Open Cluster RCT	11 PHC block on experimental and 11 in control group = 6493 mothers for intervention	Im TeCHO -Mobile technology	There were substantial improvements during antenatal period (adjusted effect size 15.7 [95% CI: 11.0, 20.4], p<0.001), postnatal period (adjusted effect size 6.4, [95% CI: 3.2, 9.6], p<0.001), early initiation of breastfeeding (adjusted effect size 7.8 [95% CI: 4.2, 11.4], p<0.001), and exclusive breastfeeding (adjusted effect size 13.4 [95% CI: 8.9, 17.9], p<0.001)	Cochrane Risk of Bias 2	Include; risk of bias: low
Logsdon *et al.*[42]	Pretest Post test design	Experiment Group 151 Comparison group 138	web based app	The online intervention was effective in altering attitudes, perceptions of control, treatment intentions, and actual treatment receipt. No matter where they resided, teenagers' response to the intervention was the same, but the influence on views may depend on the dosage.	Newcastle-Ottawa Quality Assessment Scale	Include; risk of bias: low
Pontus Herrickssson *et al.*[43]	RCT	Intervention group 152 and control 153	Healthy Mom app	Three self-monitoring features (i.e., for weight-, diet- and physical activity) was associated with lower gestational weight gain ($\beta = -0.18$, $p = 0.043$) and improved diet quality ($\beta = 0.17$, $p = 0.019$). However, the number of APP sessions and page views were not associated with any of the outcomes	Cochrane Risk of Bias 2	Include; risk of bias: low

Use of digital Applications

It is essential for teaching moms to offer reliable electronic links, mobile phone technologies, films, and access to provider and hospital websites, under the direction of their care providers.[37] Hudson et al assessed the impact of Internet based intervention – a new mom network which could exchange experiences and learn from

nurses how to take care of oneself and their newborns. MSNTV™ was installed and linked to the Internet in the homes of the participants who were moms in the intervention group. Through their internet library and interactions with other moms and nurses, the New moms Network intervention offered parenting advice. Despite the fact that access devices are changing over time, the New Mothers Network website is well positioned for nursing-driven social support intervention over the Internet.[38] iMumz maternity online programme where the infant care and parenting digital programme iMumz pregnancy has worked closely with expectant mothers to address these difficulties by providing a wide range of support and activities for maternal well-being in the convenience of their own homes. This app aims to assist expecting mothers in creating and maintaining a healthy, holistic lifestyle that starts before conception and lasts till after delivery. This software is a membership-based platform with a library of more than 800 doable activities in the categories of yoga, meditation, and specific exercises for bonding with the newborn. It is designed to help women maintain their physical and mental well-being.[39] Vander et al used social media intervention (weekly prenatal health messaging).This social media intervention includes Health information which is distributed via Facebook (6 messages/week) and/or mobile text message (SMS; 6 messages/week) in the form of pregnant exercise, healthy recipes, nutrition, fun facts about pregnancy, and stress management.[40]

ImTeCHO is a mobile health intervention developed by Dhiren et al. to enhance the provision of maternity, neonatal, and child care services. The elements of the mobile phone application were home visit forms, a case details log, a work log, announcements, and an SMS information channel. During house visits, the Accredited Social Health activists (ASHA) fills out forms on her mobile device, which are then transmitted through the GPRS network to a server. Similar to this, the ANMs will receive a tablet to track high-risk cases and keep tabs on the ASHAs' performance.[41] Web based depression interference on seeking therapy for depression was examined by Logsdon *et al*.[42] The elements of the Internet-based depression intervention were Video Vignettes, Community Resources, and Common Questions and Their Answers. The webpage featured video vignettes of other teenage moms discussing their experiences with depression and how they were successful in finding therapy for it. Using data from the Healthy Moms app, Pontus Hanricksson *et al*.[43] investigated the relationships among user engagement, with physical activity during pregnancy. The HealthyMoms app is a thorough 6-month programme that encourages a balanced diet and physical exercise in order to reduce excessive prenatal weight gain. Both Android and iOS devices may use the software. A text message with a link to a website that participants in the intervention group may view on their phone will be sent to them. Participants will be given instructions on how to register and download the app from Google Play or the App Store via the website.

Outcomes for the mothers

To understand the significance on self-preparation of mothers for giving birth in the hospital setting using electronic media, Fleming *et al*.[37] did a research on perinatal education that calls for a thorough analysis. According to the research, exposure to electronic media did not necessarily help teenagers prepare for pregnancy and childbirth, but rather raised their anxiety levels. Despite the fact that many young moms had learned what to anticipate during childbirth, most of this information was fragmented, inconsistent, weakly connected, poorly referenced, not always helpful, and maybe even more confusing. Females may be better prepared to give birth with confidence when they enter the technological world of getting ready for giving birth at a hospital by taking care of moms' requirements. Similarly, the impacts of an Internet-based intervention are examined by Hudson et al. through the New Moms Network.

The authors discovered that the intervention group's self-esteem scores on the Rosenberg Self-Esteem scale were considerably lower over the course of the 6-month period ($p=0.04$); however, they were unable to pinpoint a reason for this tendency. Despite the fact that access devices constantly changing, the New Mothers Network website is well positioned for nursing-driven social support intervention over the Internet and observed a good trend in social support levels after intervention, which was corroborated by the participants' qualitative remarks.[38]

However, in contrast Malhotra *et al.*[39] displayed the different results through the reactions and pregnancies of women who participated in the iMumz maternity online programme during pregnancy. The research revealed a statistically significant reduction in stress levels and sleep habits. Additionally, it revealed that the incidence of preterm birth and low birth weight had decreased statistically significantly in the BCP (Baby care Program) trial group in comparison to the control group, and that the MFA between the mother and foetus had improved. 88% of patients reported much less stress after beginning BCP exercises on the app. The goal of Vandar et al. was to assess how well a social media intervention (weekly prenatal health messaging) affected food quality, as well as health beliefs and knowledge. Although participants were able to recognize items with added sugar and acknowledged the advantages of whole grains, their general understanding of the My Plate Guidelines was limited. Participants responded favorably to social media-based instruction, however there were minimal improvements in nutritional consumption and understanding. Social and web media seems to have the capacity to approach high risk women, but bigger research are required.[40] ImTeCHO is a mobile health intervention developed by Dhiren *et al.*[41] to enhance the provision of maternity, neonatal, and child care services. Government Accredited Social Health Activists (ASHA) and Primary Health care center (PHC) staff used the mobile and web-based ImTeCHO programme as a work tool, which increased the availability and calibre of MNCH services in difficult-to-reach locations.[41] The impact of a web based depression interference on seeking therapy for depression was examined by Logsdon *et al*.[42] Significant improvements in attitude, perception of control, desire to search for mental health therapy, and actual seeking for the treatment of depression were the result of the intervention. Untreated postpartum depression has a significant negative influence on a woman's connection with child her ability to perform at work and school, her desire to seek medical attention, her ability to be a good mother, and both her own and her kid's development. Increase treatment rates for depression via a low-cost Internet-based depression intervention.

Using data from the HealthyMoms APP, Pontus Harricksson *et al*.[43] investigated the relationships among user engagement, with physical activity during pregnancy. The connections between physical activity registrations and reduced gestational weight gain accounted for the majority of the results. But none of the outcomes were related to the volume of app sessions or page views.

Outcomes for the neonates

Hudson et al reported that Since 35.7% of mothers who received the intervention brought their child to the emergency room at least once, compared to 70.6% of mothers who did not ($p=0.052$), it was discovered that the use of emergency services for postpartum issues in the first six months had significantly decreased following the intervention. Each group had one suitable emergency department visit, one hospitalised infant, and one mother-infant pair treated for smoke inhalation. It was shown that adolescents in the intervention group were less likely to exclusively breastfeed than those who received standard care ($p=0.06$ [assume $=0.10$]).[38] Vander *et al.*[40] classified teenagers as being less likely

than adults to breastfeed. Prenatal distress was linked to increased psychiatric risk, supporting the Developmental Origins of Health and Disease model. This finding of iMumz Maternity points to a "third pathway" for the transmission of disease within families beyond genetics and the postnatal effects of maternal psychopathology that affect fetal neurobehavioral development leads to better neonatal outcomes.[39]

Discussion

The findings of this study highlight the current risk posed by uncontrolled pregnancy and childbirth websites and applications, as well as the rise of free wi-fi and free apps, which have implications for the entire globe owing to their accessibility on a global scale. As per the, information currently existing, the benefits and drawbacks of online media for teenagers who are pregnant or just delivered are still up for debate.[44] Despite the fact that the maximum study's youthful participant grew up in a society where cutting-edge technology was often employed, this is still the case.[25-28] In order to answer our research questions, we carefully looked at how teenagers' use of the internet affected different maternal and neonatal outcomes. A teen's life is greatly impacted by the online and digital media platforms and web-based technologies currently available and can have both good and bad results, especially when it comes to keeping up good friendships and refining unstable and potentially dangerous connections.[45] Teens should carefully choose the internet networks they join in order to avoid psychological anguish in the future.[46]

Besides mental health outcomes, mothers have come up with the increased knowledge and confidence.[38,42] Online platforms may be able to fulfil the unmet requirement for teen pregnant women to get active given the extensive use of online sources worldwide. The sole consistent finding in one of the research under consideration was mental health, with Logsdon et al. placing greater emphasis on depression than Hudson et al. As a result, it is impossible to draw conclusions about our second study topic.[47] Few finding describe dietary improvements[40] which is supported by other studies and are in consensus with that.[48,49] The findings underscore the need for greater study in this vital area of regulating teenage pregnancies and the possibility of digitally solutions to reach teens who are pregnant or recently gave birth and feel more comfortable to search help online.

The results indicated that majority of the teens believe on online and digital platforms. According to the findings of other various studies, the majority of pregnant women with higher education thought the health information they discovered on the Internet was trustworthy, dependable, and beneficial.[50-52] Therefore, teenagers should carefully choose which online communities they join, according to the scientists, to minimize further emotional trauma. Given the widespread use of social media worldwide, social media platforms may potentially fulfil an unmet demand to involve young pregnant mothers. These sources make it likely for decision-makers and health professionals to provide this susceptible demographic with essential pregnancy-related information in an age-appropriate manner. Local or regional governments could be able to sway public health regulations via social media and internet platforms. By encouraging prenatal follow-up compliance and reducing pregnancy-related issues, it could prove to be a more efficient use of the funding that is available. Governments can expand the scope of their attention beyond prenatal care to encompass concerns like general women's health.

Limitations. The limits of the selected publications, as well as the lack of research in this vital field, are significant constraints of this systematic review, notably in nations, which are the most networked globally. Despite the extensive utilization of the web and social media by teenagers, few research has focused on how technology use among teenage mothers or young mother's effects birth outcomes.

Conclusion. The study concluded that, there are vast digital applications in the form of internet-based applications, mobile technology applications, social media applications, and specifically designed applications like healthy Moms which has important implications not only for pregnant adolescents but their newborns also. On one side the digital platforms help adolescent mothers to reduce stress, sound sleep and active physical mobility but on other side it also raised anxiety level in pregnant adolescents. Similarly, by using these applications, the utilization of emergency neonatal services for the newborns of adolescent mothers has been decreased but neonates were less likely to have exclusively breastfeed as far as neonatal outcomes are concerned. Therefore, it evident that use of various digital applications which have both positive and negative effects on mothers and neonatal outcomes It is clear from the results that digital and web-based solutions have the ability to better the outcomes of adolescent pregnancies, but more thorough research is required to show how helpful these support services are. The study recommended that teens should take caution when selecting which online forums to join in order to reduce the risk of experiencing further emotional stress.

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Teaching Competencies in Nursing Professors: Visions of Students and Academics

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Abstract

Objective. This work sought to know the view of Nursing professors and students about the competencies the faculty staff must have to deploy their educational function with maximum quality and efficiency. **Methods**. Descriptive qualitative study through focus groups conducted with professors, students and recent Nursing career graduates from universities in Spain. **Results**. The importance of the proposed teaching competencies was delved into, highlighting the importance of professors knowing the context in which they teach, having the ability to self-evaluate their activity, and having adequate interpersonal communication skills, and deploy the teaching-learning process by performing proper planning, using new technologies, and knowing how to engage in teamwork. Moreover, a small discrepancy was detected in relation to disciplinary competence, which students felt was of importance, but which academics indicated is taken for granted in nursing professors; competencies directly related to the act of teaching must be enhanced. **Conclusion.** Practical unanimity was found between academics and students in affirming that the competencies investigated

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are important for adequate development of the teaching activity in nursing professors. In all cases, the urgent need was highlighted for nursing professors to have adequate teaching training to provide their students with formation of the highest quality.

Descriptors: nursing faculty practice; nursing education research; students; focus groups; qualitative research.

Competencias docentes en profesores de Enfermería: visión de alumnos y académicos

Resumen

Objetivo. Conocer la visión de profesores y alumnos de Enfermería acerca de las competencias que deben presentar los docentes para desplegar su función educativa con la máxima calidad y eficacia. **Métodos**. Estudio descriptivo cualitativo a través de grupos focales realizados con profesores, alumnos y recién egresados del Grado en Enfermería de universidades de España. **Resultados**. Se profundizó en la importancia de las competencias docentes propuestas, destacando la relevancia de que los profesores conozcan el contexto en el que desarrollan la docencia,

tengan la habilidad de autoevaluar su actividad, dispongan de unas adecuadas habilidades de comunicación interpersonal, y desplieguen el proceso de enseñanza-aprendizaje realizando una correcta planificación, empleando las nuevas tecnologías y sabiendo trabajar en equipo. Por otro lado, se detectó una pequeña discrepancia con relación a la competencia disciplinar, a la que los estudiantes brindaron una gran importancia, pero que los académicos indicaron que se da por supuesta en los profesores enfermeros, debiendo ser potenciadas las competencias directamente relacionadas con el acto docente. **Conclusión.** Se ha hallado una práctica unanimidad entre académicos y estudiantes en afirmar que las competencias investigadas son importantes para un adecuado desarrollo de la actividad docente en los profesores de Enfermería. En todos los casos, se destacó la imperiosa necesidad de que los profesores de Enfermería dispongan de una adecuada capacitación docente para poder brindar a sus estudiantes una formación de la máxima calidad.

Descriptores: práctica del docente de enfermería; investigación en educación de enfermería; estudiantes; grupos focales; investigación cualitativa.

Descritores: prática do docente de enfermagem; pesquisa em educação de enfermagem; estudantes grupos focais; pesquisa qualitativa.

Introduction

The study of teaching competencies that nursing professors should have to conduct their function effectively and with quality is hardly developed, assuming this fact as an important limitation that not only affects the teacher themselves, who will not have the capacity to adequately transmit to their students the knowledge, skills, and attitudes related to the nursing discipline, but will make it difficult for the students to become competent professionals in the future.[1,2] This situation is aggravated because many of the teachers migrate directly from the healthcare field to the academic field without experience or pedagogical training;[3,4] in addition, no consensus exists regarding what teaching competencies these professors should develop.[5–7] This fact assumes that, often, the training that takes place in Nursing Faculties has a greater relationship with personal motivation or with that teachers saw professors do when they were students, than with a systematized and scientifically endorsed pedagogical process.[8]

Currently, health care is frameworked within a very dynamic setting that must be updated constantly, a fact that causes the disciplinary aspects of nursing to become increasingly complex, requiring from nurses a very high level of theoretical-practical knowledge, as well as the development of skills in communication, empathy, and clinical judgment.[9–11] This means that nursing professors must have a high level of training, both disciplinary and pedagogical; such point being one of the most complicated because, today, most professionals who conduct their activity in teaching Nursing have high academic preparation in relation to their clinical area of specialization, but show little formal knowledge in pedagogy and teaching methodology.[12] Due to all this, it is essential to delve into the study of the teaching competencies professors of the Degree in Nursing must have; the aim of this study was to know the view of Nursing professors and students about the competencies teachers must have to deploy their educational function with maximum quality and effectiveness.

Methods

To respond to the objective proposed, a qualitative descriptive study was designed through the development of two focus groups, the first composed by nursing professors and academic authorities and the second by students from third and fourth courses, as well as recently graduated professionals.

Focus group 1. To develop the first focus group, professors were intentionally selected who represented the reality of teaching in Nursing and who met the following inclusion criteria: (i) Work experience: participants with different years of experience were sought, from 1 year to > 10 years; in cohorts of 1 year, from 2 to 5, between 5 and 10, and > 10; (ii) Gender: a distribution by gender was guaranteed in keeping with the reality of teaching in Nursing; (iii) Specialty: profiles were sought that covered the teaching of the different modules found in Nursing (Basic Sciences, Clinical Sciences, and Psychosocial Sciences); (iv) Responsibility: profiles that held management and/or responsibility positions in the Faculty were included (Deans, Associate Deans, degree coordinator, course coordinators, Department heads, *etc*.); (v) A profile of specialist in pedagogy and/or teaching methodology, outside of Nursing, was selected; and (vi) A profile of person in charge of teacher training programs was sought. The profile of professors and students selected is detailed in Table 1.

Table 1. Participants in the teaching focus group

Participant	Gender	Experience	Specialty
P1	Feminine	22 years	Dean
P2	Feminine	1 year	Clinical Sciences
P3	Feminine	15 years	Psychosocial Sciences
P4	Feminine	5 years	Basic Sciences
P5	Masculine	12 years	Education, teacher training manager
P6	Masculine	16 years	Associate Dean

Focus group 2. The second group selected intentionally Nursing students and recently graduated professionals, who met the following inclusion criteria: (i) course: Nursing students with two or more years of university studies (third and fourth courses); (ii) Gender: a distribution by gender was guaranteed that reflected the reality of Nursing students; and, (iii) Graduates in the last promotion at the time of carrying out this phase of the study (2020-2021). The distribution of the participants is shown in Table 2.

Table 2. Participants in the focus group of students and graduates

Participant	Gender	Course
A1	Feminine	Fourth
A2	Feminine	Graduate
A3	Feminine	Third
A4	Feminine	Third
A5	Feminine	Fourth
A6	Masculine	Third
A7	Masculine	Third
A8	Feminine	Fourth

In both cases, to guide the development of the sessions, a semi-structured script was drafted. Likewise, the general categories of the study were initially determined, which were designed coinciding with the competencies model proposed, which was formulated after a profound bibliographic analysis about the teaching competencies necessary for professors in the Nursing degree, through which the following competencies were determined:[13]

1000. Contextual competence: capacity to incorporate onto the educational practice the essential principles of learning processes that, while justifying the teaching model itself, allow teaching to be placed in the epistemological and sociocultural context of the subject taught.

2000. Metacognitive competence: ability to monitor, self-assess, and reflect on one's own pedagogical praxis, determining possible areas of weakness and establishing measures for improvement.

3000. Planning competence: capacity to design and develop an academic program, as well as teaching activities and other training resources, adapted to the circumstances of the institution, the profession, and society; selecting for this the most relevant disciplinary content that facilitates the students' learning.

4000. Methodological competence: ability to favor and enhance learning and development of personal and professional competencies in students by applying appropriate methodological strategies, according with pedagogical and ethical models adequate to each educational context and situation.

5000. Evaluation competence: ability to develop effective strategies to monitor and evaluate acquisition of knowledge and competencies by students, using different instruments in accordance with teaching planning and learning objectives.

6000. Instrumental communication competence: ability to develop bidirectional communication processes effectively and correctly, which involves the reception, interpretation, production, and transmission of messages through different channels and media and in a manner contextualized to the teaching-learning situation.

7000. Interpersonal communication competence: ability to establish communication processes that promote critical thinking, motivation and confidence in students, recognizing cultural diversity and individual needs, and creating a climate of empathy and ethical commitment with students and colleagues.

8000. Teamwork competence: capacity to collaborate and participate as a group member, assuming responsibility and commitment towards tasks and functions assigned to achieve common objectives, following agreed procedures and taking into account available resources.

9000. Disciplinary competence: capacity to develop the activities of the Nursing profession with efficacy, quality, and security, demonstrating high level of knowledge and skills related with this discipline.

Development of focus groups of professors and students. Prior to creating the focus groups, participants were contacted directly via telephone to explain the study objectives and the ethical-legal precepts that protected their participation in such, also responding to any questions that might arise about its development. Each participant provided an informed consent, which was signed and returned to the researcher before the start of each session. Given the socio-health situation taking place at the time of conducting the study and with the intention of including participants without geographical distance being a limitation, the focus groups were carried out electronically through the Zoom platform. All sessions were recorded for their later literal transcription. The researcher participated as moderator of the sessions, each lasting approximately 2 h.

Data coding and analysis. In qualitative research, analysis of the data obtained may be considered cyclical and continuous throughout the study;[14] despite this, the start of this phase can be placed in the literal transcription of the sessions, through initial data interpretation and assignment of meaning to each category. After the literal transcription of the sessions, analysis of the information obtained was structured according to the subprocesses proposed by Miles and Huberman.[15] Through a data-reduction process, the information was simplified, selecting that which was relevant for the study objectives through an alphanumeric system that allowed coding and organizing the results.

Quality criteria. To ensure the reliability of the results obtained, Lincoln's criteria of credibility, transferability, consistency and confirmability were followed as foundation for the qualitative research.[16] Moreover, the quality of the analysis of the narratives was verified with some participants selected randomly, ensuring that their thoughts and opinions had been conveyed truthfully.

Ethical considerations. Participation in the study was voluntary and individuals could freely abandon it at any time without reprisal; likewise, no remuneration was foreseen for said participation. Data processing was conducted in keeping with the precepts of Organic Law 3/2018 of December 5, on the Protection of Personal Data and Guarantee of Digital Rights. All recordings were destroyed after their transcription, maintaining the anonymity of the participants during the elaboration of the reports, making sure that no data could be related to a specific individual. The study was approved by the Research Ethics Committee at Universidad Pontificia de Salamanca.

Results

As indicated in the previous section, the results will be shown organized in function of the general categories, providing, together with the analysis by the researchers, the discursive fractions that respond most directly to the study's objective.

1000. Contextual competence 3013641498

All the professors manifested the need for teachers to know not only the reality of the discipline in which they teach, but also the structure and operation of the university system, highlighting a frequent situation in nursing professors, who come from the clinical environment to teach at the university, completely ignoring its functioning, an aspect that often causes uncertainty and anxiety: *I believe it is very important to teach professors the context of the university, its bylaws and regulations, its organization. There are many professors who say, I don't know what I am, if a collaborator, assistant; they do not know what it means, how to achieve it, how their teaching is regulated. It is quite important to teach this context (P5).*

Other professors also exposed the importance of knowing the context of students attending the classrooms, being able to adapt to their reality, which changes with the passage of time: *it is very important to know the context in which we teach and whom we are addressing, for example, currently, with students who are all digital natives, we have to adapt teaching to their reality and to the period we are living (P2).* The students also indicated that it very important for professors to adapt to the context in which they teach, but their perspective differs from that stated by the professors. In this case, there was unanimity among students in stating that professors teaching in the Nursing career and who are not nurses should know the context of the discipline in which they teach to, thus, adapt the teaching load of their subjects to what is really necessary for professionals of this nature: *I believe there are professors who, by not being in nursing, take their subject as if we were in that career and we have to study as they studied, we have to know as they know and sometimes you have to say, let's see, I am in nursing, I don't have to downplay the importance of my subject, but they study to be nurses (A3).*

2000. Metacognitive competence

For the participants in both focus groups, metacognitive competence had much importance, focusing as a priority on the self-evaluation teachers should perform of their teaching activity as a learning element and improvement for them: *independent of external evaluation processes, which I agree are necessary, professors must continuously ask: "am I doing it well? How can I improve? (P4).* In this sense, the idea also emerged that many teachers are reluctant to assess their performance, either because of difficulty in assuming that they may have room for improvement or because they do not consider that they should change anything: *I feel that perhaps professors do not assign much importance to the evaluation of their teaching because they do not like to be told what they do wrong; that is often difficult to accept (P3); I believe there is a part of teachers themselves that has to assume that perhaps they lack some competence or skills. (...)many professors find it hard to accept that they can be mistaken in that sense (A2)*.

Finally, In the group of professors, the importance of participating in external evaluation processes such as Docentia was highlighted, manifesting the need for professors to know their functioning and participate in such: *I do believe it is important to know about and participate in these evaluation processes, for example Docentia. It helps you stop and reflect on what you have been doing for the last four years, how you have been teaching classes, what training you have undergone and that helps you to detect areas of improvement and be able to remedy them (P1).*

3000. Planning competence

Professors and students stated that teaching planning is one of the fundamental elements for success in achieving the teaching-learning objectives: *the planning competence is very important, nothing can be taken for granted and, for this reason, class dynamics must be organized and designed to know where we are starting from and where we want to go (P2).* In addition, both groups highlighted that one of the fundamental elements to plan teaching adequately is that of determining the level of students' prior knowledge, being the element upon which to base subsequent teaching development: *I think that in certain assignments, for example, in Clinical Nursing, which deals with aspects of physiology, anatomy, and pathology, it is super important to know the students' level of knowledge because they might not remember anything from physiology and we must start again from there, if not, they won't learn anything (P1); furthermore, that gives us much more security (...) It has been seen, for example, in other assignments, for example, in English no prior evaluation was made and we saw what happened, the whole class failed, then the methodology changed and it went well (A3).*

4000. Methodological competence

Regarding methodological competence, it was exposed that, although it is true that traditional methodologies, like master classes, continue being highly important in the teaching-learning process, it is necessary to include teacher innovation tools that adhere to trends in technological progress characteristic of today's society: *I consider that the master class continues being a valid methodology that works, but it is true that we also have to do innovative things, use new methodologies that make students participate more (P1).* For the students, the use of practical, visual, and digital methods assumes their increased attention and motivation in the classes, thereby, they advocate for professors increase said use in teaching, especially in disciplines, like Nursing with high practical activity: *teaching should be more practical. If a procedure is going to be explained, it makes no sense to do it with slides. Give me the information, but let me see how it is done and practice doing it because then we study the procedure and go to the hospital and see that it really has nothing to do with what we were explained (A6); visual methods contribute much and favor much when learning and make the class less boring and more enjoyable (A8).*

5000. Evaluation competence

One of the most important functions for teachers is that of knowing how to organize evaluation tools that objectively permit determining if students have acquired the knowledge and competencies established for each assignment, thus, this competence is considered quite important by teachers and students participating in the focus groups. From the students' point of view, it is important for teachers to plan adequately evaluations, highlighting two aspects: that they are previously informed of the evaluation methodology and that such represents an intellectual challenge for them: *a bad way to evaluate is to provoke studying by rote memorization and vomiting notes (A3); if professors want to request certain things from you to evaluate you, they need to make it clear to you, that is the important thing, rather than then giving you X things on the exam so that you can demonstrate what you know. If a person makes it clear what is asked of you, you should have no problems getting to the exam and complying with that evaluation. (A7).*

In this sense, professors stated that the evaluation is one of the most difficult functions for any teacher, being it important to design strategies that not only permit assessing knowledge, but the students' acquisition of competencies; an element in which more information would be necessary. Additionally, they considered it very relevant to have knowledge to be able to assess their evaluation: *regarding the evaluation by competencies, it is one of the issues feared most by professors because, for example, how do you evaluate biochemistry through competencies? It is what agencies ask us to do and we have to do it, but I think we don't know and it's a point in which they have to teach us (P6).*

6000. Instrumental communication

It is interesting that professors and students indicated that instrumental communication is not as relevant for teachers, despite being the one that enables them to express themselves adequately via scientific-technical language and to use verbal and non-verbal resources for proper class development, placing the focus of communication on the interpersonal setting: *Adequate technical level in the language of teachers is assumed, which is why the focus should be on their acquiring more interpersonal skills than instrumental ones in their communication (P3); we prefer a professor who treats us well in class, who is concerned about us, than someone who goes through everything but speaks very well and uses a lot of technical language (A4).*

7000. Interpersonal communication

Both in the focus group with students as with professors, the idea emerged with intensity that interpersonal communication is one of the most important competencies that must be present in a teacher, especially in careers, like Nursing, where treatment with others, generally in situations of sickness and vulnerability, is one of the characteristic aspects of their daily exercise, which should be taught to students, not only from theory, but with their professors' examples: *It seems to me that interpersonal communication is very important because teaching is not only giving a topic, but also knowing the students, knowing that what you are delivering reaches them and that you are motivating them (A8); I feel it is a fundamental competence to be a good teacher because students come with their particular circumstances and these are not always favorable for learning, then, giving them the confidence to open up at some point, to share their situations; that part of relationship with students I believe is very important (P4).*

8000. Teamwork competence

With regards to teamwork competence, all the participants stated that professors must have this competence, especially when teaching subjects together with other teachers, given that lack of coordination between them directly impacts on the quality of the classes and the students' satisfaction with them: *I consider it fundamental*

to know how to work as a team, to know how to coordinate faculty professors, but most important in Nursing it is to know how to include expert clinical nurses who provide their hospital vision. Either the teaching staff knows how to work together or students notice it quickly and trust and credibility are lost (P3); that is noticed, when professors from a given assignment talk and communicate with each other for students to receive the best. I know people from other universities who have 10 professors in an assignment, this one has taught me this, this one repeated it again, this other one did not know what the others had taught... and in the end that is bad for students; that is why, organization among professors is fundamental (A3).

9000. Disciplinary competence

At this point, a slight discrepancy was observed between the professors and the students. The first stated that disciplinary competence is not as important, given that nurse professors must have prior knowledge related with their discipline, therefore, the focus must be on the competencies necessary to transmit said knowledge appropriately to their students: *if we continue thinking that disciplinary competence is most important, we leave planning, methodological, etc., competencies relegated. That is, We join teaching because we are experts in the clinical area, but then the planning and methodological part, which for a teacher are more important, we leave aside (P2).*

However, the students did consider this competence more important, claiming to have found substantial differences in the classes taught by nurse professors with greater experience: *even professors must have noticed differences between one another (A3); experience also allows you to teach it to another person. For you, experience has been able to facilitate that problem that you had in your day and now it helps you teach it to other people. (A4).*

Discussion

University professors must be qualified professionals for theoretical, profound, and critical analysis of educational phenomena related with their discipline. This fact will allow them to design the context, policies and teaching processes, creating optimal conditions not only for the academic development of their students, but also for their moral and personal growth.[17] To carry out their work, it is necessary to develop adequate teaching competencies, especially when university professors – particularly in in health sciences – usually enter teaching without prior pedagogical or didactic training, migrating from other professional spaces, mainly healthcare activity, an aspect that must undoubtedly limit the educational activity carried out.[18]

Within the context of Nursing sciences, few studies have addressed the competencies their professors must have,[2,19] being models focused mainly on pedagogical and disciplinary skills, but which have not contemplated other fundamental elements, like the metacognition of the teaching function and knowledge of the context in which it is carried out, a fact that causes the competencies analyzed in this study to represent the most complete model published for nursing professors.

Regarding these two competencies mentioned, their inclusion in the model responds to their importance for the quality of teaching. In this respect, evidence consulted affirms that reflexive teaching practice, included in metacognitive competence, is one of the most important processes in teacher training, given that it stimulates teachers to develop different skills, such as introspection, decision making, and logical thought.[20] This reflection means that teachers maintain reflexive thinking that encourages them to review their experience in the classroom systematically and cyclically, using their perceptions and experiences, as well as the evaluations of their students, to assess the quality of their performance, taking actions to improve

their teaching and their students' learning standards.[21] In turn, in relation to contextual competence, other publications indicate that educational centers represent a complex multidimensional environment, where political, social, organizational, personal, and academic aspects are interrelated, which impact directly on the way professors conduct their activity, as well as their students' learning, with this situation being expressed by many novel professors as a "reality shock", manifesting that often they have not received training about the context in which they have to carry out their teaching, representing an important barrier during the start of their teaching career, which impacts upon the quality of the education they provide to their students.[22]

Regarding methodological competence, it is imperatively necessary for teachers to not only have adequate training, but also a methodological culture, which allows them to deploy the teaching-learning process with the highest quality, thus, providing their students with the knowledge and competencies necessary to acquire their maximum potential in the professional and personal levels.[23] Moreover, communication by a professor in the classroom is a key aspect, with authors stating that the teaching-learning process can be reduced to a communicative process whose purpose is to promote acquisition of knowledge, skills, and attitudes by students. In this sense, the fact that interpersonal communication was considered more important than instrumental communication can be related to what was stated by other studies, which indicate that when students feel accepted by professors these have greater motivation, confidence, and predisposition in classes, besides a better mood during such, even improving their academic performance.[24]

With respect to teamwork, the importance assigned to this competence is in line with information published in other studies, which claim that settings in which teachers have this competence improve effectiveness when conducting their tasks, established objectives are achieved to a greater extent and there is a better predisposition to solve problems.[25]

Finally, about disciplinary competence, it is highlighted that despite the views of professors in relation with its relative importance, an adequate level in this competence must be ensured, given that it refers to knowledge about the nursing discipline that must be transmitted to students, being, therefore, included in all the models of teaching competencies for nursing professors found in the scientific literature.[6,7,19]

Practical unanimity has been found between academics and students in affirming that the competencies researched for adequate development of the teaching activity in nursing professors. Further, discrepancy was detected in relation to disciplinary competence, to which students gave great importance, but which academics indicated that this is taken for granted in nurse educators, with competencies related directly with the teaching act having to be enhanced. In all cases, the urgent need for nursing professors to have adequate teaching training to provide their students with training of the highest quality was highlighted.

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"I didn't know anything, but I learned over time": The process of nurses attaining autonomy in Intensive Care Units

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"I didn't know anything, but I learned over time": The process of nurses attaining autonomy in Intensive Care Units

Abstract

Objective. Understand the social processes experienced by nursing professionals and the meanings underlying autonomy in adult Intensive Care Units in the city of Cartagena (Colombia). **Methods.** A qualitative study with a grounded theory approach was conducted. Fifteen semi-structured interviews were carried out with nursing professionals, and the analysis was based on the coding technique proposed by Strauss & Corbin. **Results.** Of the respondents, fourteen were female and one was male, with ages ranging from 23 to 57 years. Experience in intensive care units ranged from 1 to 28 years, and none had postgraduate studies. After thematic analysis, the central category was obtained from four categories: adaptation process, applicability of autonomy exercise, building autonomous competence, and limitations to the

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exercise of autonomy. **Conclusion.** Nursing professionals achieve their autonomy through a social process, based on different stages of learning when facing the environment of the units. It is grounded in decision-making and the power to act freely. However, barriers continue to hinder it, including limitations imposed by institutions, protocol-based interventions, social status, and individual differences among professionals

Descriptors: professional autonomy; intensive care units; critical care cursing.

"No sabía nada, con el tiempo lo aprendí": El proceso de los enfermeros de alcanzar la Autonomía en Unidades de Cuidado Intensivos

Resumen

Objetivo. Comprender el proceso social que viven los profesionales de enfermería y los significados que subyacen a la autonomía en las Unidades de Cuidados Intensivos adultos en la ciudad de Cartagena (Colombia). **Métodos.** Estudio cualitativo con enfoque de la teoría fundamentada, se realizaron quince entrevistas semiestructuradas en profesionales de enfermería, el análisis se realizó basado en la técnica de codificación propuesta por Strauss y Corbin. **Resultados.** Los entrevistados eran catorce de sexo femenino y uno de sexo masculino, con edades entre los 23 y 57 años, la experiencia en unidades de cuidados intensivos oscilo entre 1 y 28 años y ninguno conto con estudios de posgrados. Tras el análisis temático se obtuvo la categoría central "Cuando yo entré no sabía, con el tiempo lo aprendí" a partir de cuatro categorías: proceso de adaptación; aplicabilidad ejercicio de la autonomía; construyendo la competencia autónoma; y limitaciones para el ejercicio de la autonomía. **Conclusión.** El profesional de enfermería logra su autonomía a través de un proceso social, basado en diferentes etapas de aprendizaje al enfrentarse al ambiente de las unidades, se sustenta en la toma de decisiones y el poder de hacer las cosas de forma libre. Sin embargo, existen barreras que la siguen obstaculizando, entre ellas las limitaciones dadas por las instituciones, intervenciones basadas en protocolos, el estatus social y la individualidad entre los profesionales.

Descriptores: autonomía profesional; unidad de cuidados intensivos; enfermería de cuidados críticos.

“Não sabia nada, com o tempo aprendi”: O processo de autonomia do enfermeiro em Unidade de Terapia Intensiva.
País dos autores: Colômbia

Objetivo. Compreender o processo social vivenciado pelos profissionais de enfermagem e os significados subjacentes à autonomia nas Unidades de Terapia Intensiva adulto da cidade de Cartagena (Colômbia). **Métodos.** Estudo qualitativo com abordagem da teoria fundamentada, foram realizadas quinze entrevistas semiestruturadas com profissionais de enfermagem, a análise foi realizada com base na técnica de codificação proposta por Strauss y Corbin. **Resultados.** Os entrevistados foram quatorze mulheres e um homem, com idade entre 23 e 57 anos, a experiência em unidades de terapia intensiva variou entre 1 e 28 anos e nenhum possuía pós-graduação. Após a análise temática, obteve-se a categoria central “Quando entrei não sabia, aprendi com o tempo” a partir de quatro categorias: processo de adaptação; aplicabilidade exercício de autonomia; construção de competência autônoma; e limitações para o exercício da autonomia. **Conclusão.** O profissional de enfermagem conquista sua autonomia por meio de um processo social, baseado em diferentes etapas de aprendizagem diante do ambiente das unidades, baseado na tomada de decisão e no poder de fazer livremente. No entanto, existem barreiras que continuam a dificultá-lo, incluindo limitações dadas pelas instituições, intervenções baseadas em protocolos, status social e individualidade entre os profissionais.

Descritores: autonomia profissional; unidades de terapia intensiva; enfermagem de cuidados críticos.

Introduction

The precedents that have marked the evolutionary development of nursing are related to the subordination and linkage of practice to other professions, a fact that has, in turn, limited disciplinary strengthening, independent practice, decision-making, and control of their actions; characteristics that frame the autonomy of professional practice.[1] While nursing is considered a relatively new profession, in its beginnings, it was classified as a trade, and its activity lacked a theoretical basis that supported it, factors that led it towards its professionalization process and the pursuit of autonomy; this not only involved seeking independent action for the generation of judgments and decision-making but also entailed authority and responsibility for controlling their actions, oriented towards care based on their knowledge that underpinned their work.[2] This is how Florence Nightingale identified the need to base care practice on scientific principles and emphasized the need for nurses to make judgments about care and healthcare[3], achieving the construction of its conditions and characteristics as an autonomous profession, the qualification of its work, positioning, and improving its social image.[4] However, disparate development and evolution worldwide have led to a practice with limited autonomy, given by the professionalization process in each country, which is influenced by the development of technical, scientific, social, and cultural characteristics peculiar to each.[5]

In the Americas region, a similar situation is experienced to that of Asian countries, as is the case in Colombia, despite nursing having a legal framework that establishes and supports its autonomous practice.[6] A loss of visibility and autonomy is evident in areas such as clinical care practice, due to factors such as social status, healthcare system, interdisciplinary relationships, job demands, institutional regulations, monotony, and workload. Similarly, we find that the specific and general competencies that professionals in these areas should possess, activities not inherent to professional practice, personal traits of each professional, demotivation, and individualism during working hours are other factors that hinder autonomous practice.[7]

Clinical areas like Intensive Care Units (ICU) have evolved rapidly since their inception in Colombia. They are considered complex, and the care of individuals at risk of vital and functional impairment is mediated by technological advancements. Therefore, nursing professionals need to possess knowledge of critical and vulnerable health situations of care recipients, specific and general competencies, and integrate personal and ethical values to perform autonomously. This involves decision-making, providing timely and high-quality care based on responsibility, skill, and leadership, which promotes empowerment and professional differentiation.[8] The aim of the study was to understand the social process experienced by nursing professionals and the meanings underlying autonomy in adult intensive care units in the city of Cartagena.

Methods

Qualitative Study with a Grounded Theory Approach: 15 out of 18 invited nurses from various adult Intensive Care Units (ICUs) in the city of Cartagena, Colombia, participated. Three of them declined to participate, while the rest remained involved throughout the study. Theoretical sampling guided data collection until reaching saturation of meaning units. Initially, a field visit was conducted to meet with the nurse coordinators who facilitated the recruitment of participants who met the inclusion criteria: nursing professionals with more than one year of experience working in ICUs.

Semi-structured face-to-face interviews were conducted in a single session by one of the researchers, who had no employment affiliation with the institutions or any prior relationship with the participants. The interviews had an average duration of thirty to sixty minutes and took place in a quiet, uninterrupted space chosen by the participants, either in their homes or institutional settings. The research's guiding question was, 'What has been your experience since the beginning of your career as a nurse in the Intensive Care Unit?' The interviews were recorded and transcribed after completion, and field notes were also taken. Manual analysis was employed based on the coding technique proposed by Strauss and Corbin.[9] The process involved data fragmentation, conceptualization, coding, elaboration, and integration, enabling both descriptive and analytical analysis through the implementation of analysis tools such as interpretive frameworks, recording techniques, analytical memos, matrices, and conceptual diagrams.

For each transcribed interview, the researcher conducted microanalysis, allowing for a line-by-line reading and constant comparison, resulting in 203 data codes. These initial categories emerged through constant comparison, representing the phenomenon under investigation."

The conceptualizations were grouped into prominent concepts, along with their evoked properties, referred to as 'substantive codes' and 'in vivo codes,' enabling theoretical comparisons through analytical memos. Additionally, similarities and differences were sought between the attributes of categories defined by emotional responses and the dimensions defined by feelings towards the phenomenon. Once the information had been fragmented, axial coding was performed, and through the coding paradigm, four categories and their ten subcategories were defined, culminating in selective coding, which unified the categories into a central category. The study's rigor criteria were maintained in terms of credibility, auditability, and transferability, allowing for the portrayal of the phenomenon from human experiences as perceived by the study subjects, thus achieving real and/or true findings. In this regard, participants were provided with feedback on their narratives to validate the interpretations, and they expressed their agreement with the fidelity of the transcribed accounts of their lived experiences.

Furthermore, the study described and detailed the participant selection process, the participants' characteristics, and the context in which it was conducted.[10] The project was approved by the Research Ethics Committee of the Faculty of Nursing at the University of Cartagena and included informed consent, voluntary participation, authorization to record interviews, confidentiality, and discretion in handling the information.

Results

Fifteen interviews were conducted and analyzed with nurses, comprising 14 females and 1 male, ranging in age from 23 to 57 years old. Their experience in the ICU ranged from 1 to 28 years, and none of them had completed postgraduate studies. The participant descriptions are presented in Table 1.

Table 1. Description of the 15 participants in the study.

Code	Sex	Age	Years of Experience in ICU	Work Duration	Institution's Legal Entity	Type of Contract
ICUNurse01	Females	32	9	12	Private	Undefined
ICUNurse02	Females	49	28	7	Private	Undefined
ICUNurse03	Females	34	11	6	Private	Undefined
ICUNurse04	Females	34	7	2	Private	Service
ICUNurse05	Females	57	22	32	Private	Undefined
ICUNurse06	Females	44	22	6	Private	Fixed term
ICUNurse07	Females	31	8	6	Private	Fixed term
ICUNurse08	Male	26	1	1	Private	Fixed term
ICUNurse09	Females	28	6	6	Public	Fixed term
ICUNurse10	Females	44	17	3	Public	Fixed term
ICUNurse11	Females	37	15	4	Public	Fixed term
ICUNurse12	Females	52	18	9	Public	Fixed term
ICUNurse13	Females	47	20	9	Public	Fixed term
ICUNurse14	Females	23	1	1	Public	Fixed term
ICUNurse15	Females	43	15	6	Public	Fixed term

Four categories and ten subcategories were merged, as represented in Figure 1.

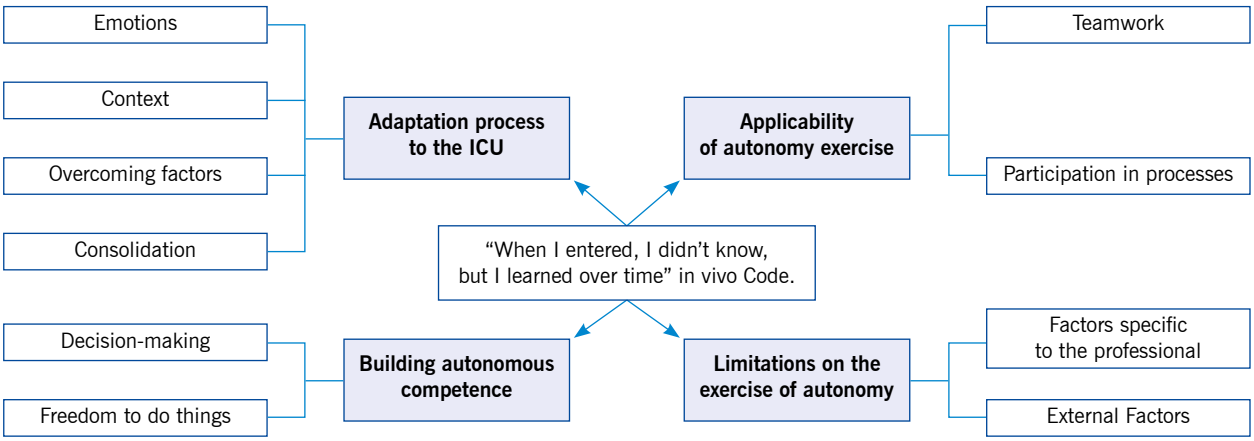

Figure 1. Central Category: 'When I entered, I didn't know, but I learned over time.' In vivo code.

Category 1. Adaptation Process to the ICU

In the participants' discourse, it emerged that achieving professional autonomy requires an adaptive process to the ICU, involving different stages from their initial entry. Nurses exercise autonomy when they are confronted with situations that require leadership and the

fulfillment of objectives supported by knowledge, leading them to develop their critical capacity to make decisions and projecting a problem-solving image during events. This, in turn, involves a process of learning, maturation, and dynamic social interaction with shared objectives among healthcare team professionals, enabling them to acquire, strengthen, and consolidate competencies, skills, and abilities.

Emotions. When professionals first face the ICU, they express emotions such as fear and uncertainty due to their inexperience, limited knowledge, and the skills required to perform and respond to the presented situations: "At first, well, some fear of the new, both medications that are not usual, handling them, the speed, infusions, and how to prepare them." (*ICUNurse12*).

Context. For professionals, ICUs are dynamic and complex environments due to the technology, high-risk medications, and the knowledge required for optimal performance, stemming from the care needs and demands of patients, their vulnerability, the complexity of functional impairments, and the risk to their lives: "It's a quite complex area, requiring a lot of attention, a lot of dedication because these are patients who need greater care, and in addition, there are many pieces of equipment that we may not use in other services." (I*CUNurse04*).

Overcoming Factors. Nevertheless, despite experiencing fear and uncertainty, the professionals managed to confront and transform these emotions into something positive to acquire and strengthen their knowledge. They relied on self-learning processes, continuing education, interactions with other professionals, and colleagues with more experience. This encouraged the pursuit of knowledge and the acquisition of technical skills: "The most positive thing for us at the beginning was that training was provided, and there was also support, both administratively and from the coordinators, which helped alleviate our fears." (*ICUNurse12*).

Consolidation. Over time, concurrently with the overcoming factors, they managed to understand, learn, strengthen, research, and consolidate the scientific foundations of care practice through interactions with other professionals or through their experiences. This was viewed as a social process that involved responding to the unknown and the challenges posed by the dynamics, technology, and medical management provided in ICUs: 'Knowledge is acquired through studying, interacting with others, with medical personnel, experimenting, and the day-to-day experience in the ICU. It's based on putting out fires and staying at the forefront of changes because things evolve, and one adapts to changes in infrastructure, technology, and changes in medical management. This is acquired through experience, reading, and self-improvement.' (*ICUNurse13*)."

Category 2. Applicability of Exercising Autonomy

As nurses adapt to the ICU environment, they channel their efforts toward achieving and exercising professional autonomy by empowering themselves in two crucial aspects:

Teamwork. ICU nurses emphasize that for them, it is more important to be a leader than a boss because they gain greater visibility in their practice through the strengthening of relationships, interaction with their team, and leadership. This positively strengthens professional empowerment and how they are perceived by the healthcare team. It also contributes to the acquisition of skills, knowledge, and expertise for the care of critically ill patients: "I take the leadership of the department, so I consider myself a leader in the department because I must ensure that everything is under control in the department, both with the doctors. Just the other day, a doctor said," "If you don't function, the ICU doesn't function." (*ICUNurse14*).

Participation. The participants agree that the exercise of autonomy is directed towards their

active participation in processes that occur during patient care, such as medical rounds and critical patient situations. During these situations, they inquire and actively gather information about the patients, and nurses provide suggestions to guide care. They transition from being supervised to supervising care: "If the patient's condition worsens for any reason, it's our duty to inform the doctor or specialist so that they can take the necessary measures, and we ensure that all the patient's requirements from the physiotherapy service are met. In this aspect, we oversee that the patient receives what they need at that moment." *(ICUNurse07).*

Category 3. Building Autonomous Competence

Throughout the entire process experienced by nursing professionals in the ICUs, underlying meanings emerge, encompassing two subcategories: decision-making and the freedom to do things. These subcategories serve as a cross-cutting axis grounded in knowledge and expertise that transform them into experts and leaders in the ICU.

Decision-Making. The meaning attributed to autonomy by professionals' centers around the freedom or power to make decisions once they feel prepared, free, and confident. However, some decisions are context-dependent, particularly in critical situations. These decisions must be well-founded since they cannot be made without a scientific basis to justify their rationale. They are characterized by being made freely, confidently, without consultation, assertively, in a timely manner, and of high quality, all with the goal of preserving patients' health: "It's the power to make your own decisions in certain moments, and you must have the knowledge to do so because you wouldn't make a decision without knowing" (*ICUNurse10*); "Well, I did it by always, as I told you, making the most appropriate decisions for the patients, for the unit. I did it with the confidence and the sense of belonging that characterizes me. Those were the two pillars that helped me exercise this autonomy." (*ICUNurse08*).

In decision-making, professionals focus on seeking benefits related to three aspects: the multidisciplinary team, the unit, and the patient. Implicitly, the ethical principle of Beneficence/ Non-Maleficence is evident, particularly in the care of the patient. Some decisions arise in critical circumstances that must be coordinated, validated, and supported by the multidisciplinary team. In this regard, nurses integrate knowledge from other disciplines to support care, demonstrating leadership, commitment, and ethical awareness: "I believe that to have autonomy, one must have knowledge. This knowledge must be based on scientific evidence through which we make decisions, at least in the field of healthcare. We make decisions to preserve the patient's health and provide holistic care." (*ICUNurse07*).

In cases where decisions are solely directed by the nursing professional, the decisions and their justifications are based on the need for quick action due to the physiological change's patients are experiencing to prevent complications that could lead to death. However, professionals validate and require legal support in the patient's medical record from the physician: "If a patient has hypoglycemia, I am autonomous and I know that I have to administer a dextrose bolus to the patient without needing to inform the doctor. That's what should be done, but it takes time; then I inform the doctor and say, Doctor, the patient had hypoglycemia, and I administered 200 of dextrose. Could you please prescribe it for me?" (*ICUNurse01*).

Freedom to Act. The other aspect underlying the meaning of autonomy is related to the freedom to act based on the ethical principles that support nursing. Autonomy is focused on activities and procedures specific to nursing care, such as catheterization, skin care, airway management, providing comfort and safety. These actions are supported by the skills acquired through practice and experience to execute them: "We are autonomous when it comes to placing devices and catheters. I don't have to wait for the doctor's

order for that. In fact, we have the responsibility to ensure that the patient is well. I don't have to wait and call the doctor." (*ICUNurse13*).

Category 4. Limitations to the Exercise of Autonomy

As aspects that limit autonomy, barriers emerge as a cross-cutting axis in the process experienced by nurses, and these barriers are related to factors inherent to the nurses themselves and external factors:

Factors Inherent to the Nurses Themselves. These factors are focused on the personal characteristics of nurses and the nature of the nursing discipline. They encompass aspects such as personality, skills, and the ability to make decisions without prior discussion: "Sometimes they see it as being too strict, which is the way it should be, but at times, in an attempt to build camaraderie, one may lose the ability to lead. I believe that is also part of one's personality; I'm not naturally rigid." (*ICUNurse03*).

External Factors. These factors are represented by the limitations imposed by institutions, interventions based on guidelines and protocols, social status, and the loss of fields of action that were once integrated with other disciplines. However, nursing care is not completely disconnected, but its autonomy is somewhat limited: "In Colombia, I see that they don't consider us an important profession; it's as if we were just anyone, like servants of the doctors. In contrast, in other places, nurses have a different status. In the United States, a nurse is an important person because people know that they are with the patient, and what they say matters because they are the ones with the patient all the time. Here, it's not like that." (*ICUNurse06*).

The graphic representation of the adaptation process and the applicability of autonomy is depicted in Figure 2.

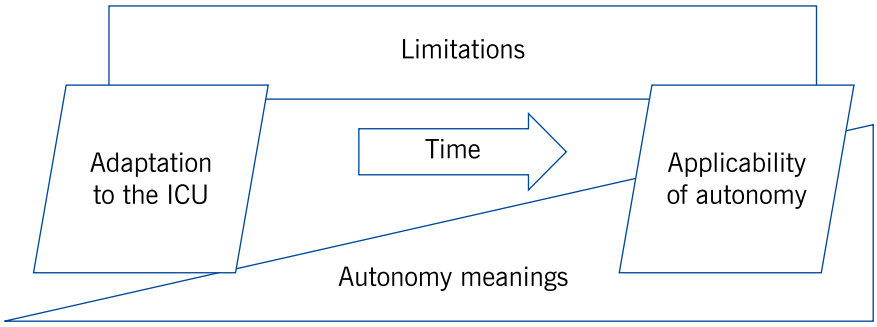

Figure 2. Adaptation Process and Applicability of Autonomy for Nursing Professionals in Intensive Care Units.

Discussion

The autonomous practice of nurses in ICUs involves an adaptive social process in which contextual, personal, and social factors related to the nursing discipline, the multidisciplinary team, and the unique characteristics of care required for critically ill patients come into play. It begins when they are first exposed to the units,

mediated by emotional responses generated by the unfamiliarity of the context, and it ends when they become autonomous and empowered with knowledge, skills, and abilities to make decisions supported by self-learning processes. Gallego *et al*.[11] point out that ICUs are specialized and hostile spaces that present urgent situations due to the type of patients being treated, evoking negative thoughts in professionals due to fear of what they are facing. Similarly, González[12] states that nursing professionals acquire technical skills through continuous interaction with other disciplines, tangible problems that arise, and exchanges with experienced nurses, leading to gradual improvement and skill acquisition.

Likewise, professionals require knowledge that enables them to guide and provide a foundation for their practice, as well as demonstrate skills related to planning care interventions and their outcomes. In this regard, the applicability of autonomous practice occurs when nurses combine technical skills and scientific knowledge to exercise leadership and empower themselves as members of the ICU healthcare team through their active participation once they adapt. These findings are consistent with those presented by Jaimes.[13] who states that autonomy is a condition that is not expected to emerge suddenly or be static, but rather that this condition is constructed based on various foundations and methodological factors, forging the path toward meeting the requirements that promote its applicability during professional practice. In line with this thinking, Tapp *et al*.[14] suggest that achieving autonomy in nursing practice involves both a contextual and a personal interface, where autonomy develops over time, based on personal and professional growth. Similarly, Herrera *et al*.[15] affirm that the development of nursing professionals is a continuous, articulated, and upward process for the acquisition of theoretical and practical knowledge. When integrated with disciplinary ethical norms and codes, this process enhances their professional being, doing, and performance, setting them apart from other healthcare disciplines and providing them with the necessary capacity to resolve situations in the exercise of professional autonomy. Similar results are reported by González,[12] who found that ICU nursing professionals required constant integration of theory and practice, based on skills, personal initiative, the ability to make judgments, critical thinking, reflection, and the management of emotional aspects such as fear of the unknown, in order to achieve a learning process directed toward providing holistic and quality care. However, Marriner *et al*.[16] in relation to Benner's postulates, note that disciplinary nursing knowledge is acquired and strengthened through nursing practice. This knowledge is acquired thanks to the various learning processes that nurses go through in different contexts, allowing them to transition from being inexperienced to becoming experts.

In the experience of ICU nurses, the underlying meaning of autonomy refers to the freedom to make decisions and the ability to do things without the supervision or authorization of other professionals. It is based on their experience and the technical-scientific skills that provide them with the confidence and assurance to carry out actions for the benefit of the patient, the unit, and the healthcare team. Gómez.[17] points out that autonomy involves decision-making and independent practice based on the professional roles in different contexts in which nurses work. Furthermore, Muñoz *et al*.[18] mention that one of the most important competencies for nursing professionals is related to decision-making, based on two aspects: personal attitudes and skills, and scientific knowledge and the complex processes underlying decision-making. This enhances the visibility of the professional in their problem-solving role and their self-confidence in observing, analyzing, and providing solutions based on their experience to the situations that arise.

The results of the process of achieving autonomy are similar to those reported in the study by Villagra *et al*.[19] where participants found that autonomy is a methodological or systematic practice among nursing professionals in the units, based on knowledge, confidence, and the ability to make decisions. Similarly, Gallego *et*

al.[11] concluded that the autonomy of nursing professionals in ICUs is influenced by experience, the skills they acquire during their practice, and their interaction with other professionals, which is enhanced through scientific validation achieved through education and research. During the process, nurses mention that interaction with other professionals, participation in the healthcare team, and the ability to make decisions freely contribute to the autonomous practice of nursing in ICUs. These findings are consistent with the results of the study by Tapp *et al*.[14] who found that autonomy is implicitly related to decision-making and nursing actions in various areas, including ICUs. They also found that the close relationships that nurses have with professionals allow them to create bonds characterized by camaraderie, based on respect and recognition.

The concept related to the freedom to do things independently without supervision or direction from another professional is central to nursing practice. According to Jaimes.[13] autonomous practice in nursing involves activities focused on diagnosis, care, and treatment, within the nursing professional's role and scope of practice. These activities may involve collaboration with other healthcare professionals but highlight the nursing role in empowerment and the initiative of professionals to carry them out. Similarly, Gallego *et al*.[11] concluded that contemporary nursing care has evolved to a higher level of expertise and competence, as it is now based on patient needs and prioritized, planned, and grounded in evidence.

The findings related to factors that continue to limit autonomy refer to characteristics inherent to nurses, such as lacking the necessary skills to exercise autonomy, and external factors related to the institutions where they work and their social status. Bonfante *et al*.[4] suggest that one factor hindering autonomous practice is the individuality among nursing professionals. Gómez.[17] notes in their study that while nursing professionals have disciplinary knowledge, they are still often influenced by the knowledge and practices of other professions, preventing full control of their practice. Additionally, Lopera *et al*.[7] found that nurses lose their autonomy when their professional practice becomes burdened by activities that are not within the scope of nursing or when these activities are imposed by the institution. Similarly, Sánchez.[20] mentions that a challenge in the nursing discipline and its field of practice is the social image projected by nurses, which often depicts them in secondary roles associated with other professions, lacking responsibility and autonomy in decision-making and having limited academic qualification.

The conclusion of this study is that the autonomous practice of ICU nurses underlies an adaptation process to the complex and dynamic environment in which it takes place, involving different stages to achieve decision-making, leadership, and participation in the multidisciplinary team. This social process enables nurses to guide their clinical practice and interventions with scientific, disciplinary, and ethical foundations. Gaining autonomy in the ICUs means for nurses making decisions and being able to do things freely, without the accompaniment, consultation, or direction of other professionals, based on technical-scientific disciplinary knowledge that provides them with confidence, security, and is supported by ethical/legal aspects related to the practice of nursing, while respecting the boundaries of other professionals. However, the social process reveals intrinsic and extrinsic factors such as individuality among professionals, lack of control in the practice of their profession, activities unrelated to care, and the guidelines of healthcare organizations that interfere with decision-making, factors that hinder the exercise of autonomy in clinical practice in ICUs.

Considering the idiographic nature of qualitative research, the generalization of the results to the entire population of nurses is considered a limitation. Consequently, the results can only be transferred to populations with the same characteristics as the study participants

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The effect of interventional program underpinned by health belief model on awareness, attitude, and performance of nurses in preventing nosocomial infections: A randomized controlled trial study

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The effect of interventional program underpinned by health belief model on awareness, attitude, and performance of nurses in preventing nosocomial infections: A randomized controlled trial study

Abstract

Objective. The present study examined the effect of an interventional program underpinned by the Health Belief Model (HBM) on nurses' awareness, attitude, and performance in preventing nosocomial infections. **Methods.** This randomized controlled trial study was performed on 60 clinical nurses in lar, Iran. Nurses were selected using the simple random sampling method and assigned to two experimental (n=30) and control (n=30) groups. Data collection tool included the valid and reliable questionnaire was developed by Soleimani *et al.* The research intervention consisted of five 90-min sessions based on the health belief model in preventing

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hospital infection for experimental group. Before the intervention, immediately and two months after the intervention, the two groups completed the questionnaire. The control group received no intervention. **Results.** Data analysis showed that the differences between the two groups was statistically significant immediately and two months after the intervention ($p<0.05$). In experimental group the changes in the mean score of knowledge, attitude and performance of nurses before, immediately and two months after the intervention were significant ($p<0.05$), but in the control group, only the changes in the mean score of performance were significant ($p<0.05$). **Conclusion.** The results showed that the HBM-based intervention is effective in promoting nurses' knowledge, attitude, and performance in preventing nosocomial infections. hence, periodical and in-service HBM-based training programs on preventing nosocomial infections are recommended to be held for nurses.

Descriptors: Health belief model; Cross infection; nurses; attitude of health personnel; control groups; randomized controlled trial.

Efecto de un programa de intervención basado en el modelo de creencias en salud sobre el conocimiento, la actitud y el desempeño del personal de enfermería en la prevención de las infecciones intrahospitalarias. Ensayo controlado aleatorizado

Resumen

Objetivo. El presente estudio examinó el efecto de un programa de intervención basado en el modelo de creencias en salud (Health Belief Model -HBM-, en inglés sobre el conocimiento, la actitud y el desempeño de las enfermeras en la prevención de las infecciones intrahospitalarias. **Métodos.** Este ensayo controlado aleatorizado se realizó en 60 enfermeras clínicas de Iar, Irán. Las enfermeras fueron seleccionadas mediante el método de muestreo aleatorio simple y asignadas a dos grupos experimental ($n=30$) y de control ($n=30$). La herramienta para la recogida de datos incluyó el cuestionario válido y fiable desarrollado por Soleimani *et al.* La intervención consistió en cinco sesiones de 90 minutos basadas en el modelo de creencias de salud para prevenir la infección intrahospitalaria en el grupo experimental. Antes de la intervención, inmediatamente y dos meses después de la intervención, los dos grupos completaron el cuestionario. El grupo de control no recibió ninguna intervención. **Resultados.** El análisis de los datos mostró diferencias estadísticamente significativas entre los dos grupos en los momentos inmediatamente y dos meses después de la intervención ($p<0.05$). En el grupo experimental, los cambios en la puntuación media de conocimientos, actitudes y rendimiento de las enfermeras se observaron en los momentos de antes, inmediatamente y dos meses después de la intervención ($p<0.05$); mientras que en el grupo de control solamente los cambios en la puntuación media de desempeño fueron significativos ($p<0.05$).

Conclusión. Los resultados mostraron que la intervención basada en HBM fue eficaz para promover el conocimiento, la actitud y el rendimiento de las enfermeras en la prevención de las infecciones intrahospitalaria, por lo que se recomienda impartir a las enfermeras programas de formación periódicos y en servicio basados en HBM sobre la prevención de las infecciones intrahospitalarias.

Descriptores: modelo de creencias sobre la salud; infección hospitalaria; enfermeras y enfermeros; actitud del personal de salud; grupos controles; ensayo clínico controlado aleatorio.

Efeito de um programa de intervenção baseado no modelo de crenças em saúde no conhecimento, atitude e atuação da equipe de enfermagem na prevenção de infecções hospitalares. Teste controlado e aleatório

Objetivo. Examinar o efeito de um programa de intervenção baseado no Modelo de Crenças em Saúde (MBH) no conhecimento, atitude e desempenho dos enfermeiros na prevenção de infecções hospitalares. **Métodos.** Este ensaio clínico randomizado foi conduzido em 60 enfermeiras clínicas de lar, Irã. Os enfermeiros foram selecionados pelo método de amostragem aleatória simples e distribuídos em dois grupos experimental ($n=30$) e controle ($n=30$). O instrumento de coleta de dados incluiu o questionário válido e confiável desenvolvido por Soleimani et al. A intervenção consistiu em cinco sessões de 90 minutos baseadas no modelo de crenças em saúde para prevenir infecção hospitalar no grupo experimental. Antes, imediatamente e dois meses após a intervenção, ambos os grupos responderam ao questionário. O grupo controle não recebeu nenhuma intervenção. **Resultados.** A análise dos dados mostrou diferenças estatisticamente significativas entre os dois grupos imediatamente e dois meses após a intervenção ($p<0.05$). No grupo experimental foram observadas alterações na pontuação média de conhecimentos, atitudes e desempenho dos enfermeiros antes, imediatamente e dois meses após a intervenção ($p<0.05$); enquanto no grupo controle apenas as alterações na pontuação média de desempenho foram significativas ($p<0.05$). **Conclusão.** Os resultados demonstraram que a intervenção baseada no HBM foi eficaz na promoção do conhecimento, atitude e desempenho dos enfermeiros na prevenção de infecções hospitalares, pelo que se recomenda proporcionar aos enfermeiros este tipo de programas de formação em serviço baseados no HBM.

Descritores: modelo de crenças de saúde; infecção hospitalar; enfermeiras e enfermeiros; atitude do pessoal de saúde; grupos controle; ensaio clínico controlado aleatório.

Introduction

Nosocomial infections (NI) are the most common health complication threatening patients' safety in the health system in all countries, regardless of the level of their development. NI result in deaths, delays in the recovery process, and disability and impose exorbitant costs.[1] The World Health Organization (WHO) defines NI (hospital-acquired infections) as an infection acquired by a patient during the process of care in a hospital or other health and treatment centers which is not present or incubating at admission.[2] NI result in permanent complications, prolonged hospital stays, severe increase in treatment costs, the patient's and his/her companions' dissatisfaction, and even death.[3] They are also associated with increased antibiotic use, respiratory problems, enhanced demand for mechanical ventilation, and increased use of intravenous injections, thereby arousing patients' dissatisfaction.[4] According to the WHO, 1.7 million NI occur annually, and 1 out of 20 persons gets a hospital-acquired infection, accounting for 99,000 deaths per year and imposing about 26-32 million dollars costs on countries.[5] In the United States, NI account for 80,000 deaths annually,[6] implying that 247 persons die from NI in this country, and one out of 136 hospitalized patients becomes terribly sick because of such infections.[7] In developing countries, however, 2-4 million NI occur per year, and they are considered the eleventh cause of death and the fifth cause of hospital death.[8] In Iran, the prevalence of NI ranges from 1.9% to >25%.[9]

Nurses play the most critical role in preventing NI since they mainly contribute to the treatment and care of such patients.[10] According to the WHO's practical guide 2002, nurses play a leadership role in NI.[11] Previous studies have documented that nurses' awareness, attitude, and performance play a vital role in hospitals and healthcare centers in terms of NI prevalence and control; hence, disregarding these factors would be associated with adverse consequences and cause physical and financial damage to patients and their companions, nurses, and other hospitals. In other words, nurses should acquire authentic and sufficient scientific information about NI and their prevention methods.[12,13] From the WHO perspective, the most important principle in prevention is education.[14] In this regard, the first and the most important method to decrease the incidence of NI is to teach how they emerge and how to prevent and fight them.[15] Yaghoubi *et al.* [13] reported that 87.7% of nurses had superficial knowledge about NI control and those nurses hold negative attitudes toward such infections. In their study, 78% of the nurses had an average performance in terms of NI control. In Nasiri *et al*.'s study, the mean score of the nurses' attitude and performance in NI prevention was low; however, the nurses had enough knowledge about such infections.[16]

Hosseini *et al*.[17] showed the effect of practical and theoretical training on the nurses' knowledge and performance in preventing NI. In their study, however, the mean score of the nurses' attitude did not change, suggesting that training did not cover their attitude, as a result of which the performance did not improve remarkably. In India, Chakcar *et al.*[18] documented the positive effect of training on the nurses' awareness and knowledge about NI prevention, even though no progress was noticed in their performance. These findings imply that training and information transfer are not enough to change nurses' behavior and that promoting their awareness does not necessarily change their attitudes, and changing attitudes is not always associated with changes in behavior. Accordingly, health educators should develop interventions that lead to skill development, concept acquisition, and decision-making.[19] In educational planning, the first step and one of the main measures is to choose a model or theory tailored to conditions and to recognize the problem as well as the goal of the concerned intervention.[20] In other words, selecting an appropriate training model makes the program be initiated and move in the right direction.[21]

The health belief model (HBM) is one of the main models in health education,[22] which is based on motivating individuals and changing their behavior and focuses on changing beliefs, ultimately leading to behavior changes.[23] According to HBM and its key components (namely perceived susceptibility, perceived seriousness, perceived barriers, perceived benefits, self-efficacy, and guidelines for action), nursing staff are assumed to exhibit an appropriate reaction to NI when they feel themselves at risk of exposure to pathogenic agents (perceived susceptibility). In this case, they consider the risk of exposure to be of great importance for their health and patients (perceived seriousness).[24] It is also likely that understanding benefits and knowing how to remove barriers are effective in taking standard infection control precautions nurses as such nurses can reach the required efficiency in preventing NI by promoting their awareness and attitudes.[24] Accordingly, the multifaceted HBM constructs seem to match and overlap with NI prevention. In a similar vein, holding an interventional program underpinned by this model can play a critical role in improving nurses' awareness and attitudes and enhancing their NI preventive behaviors. In this regard, the present study aimed to examine the effect of an HBM-based intervention on nurses' awareness, attitudes, and performance in preventing NI. If the intervention is effective, it can be considered by health managers and researchers as an effective program in preventing and reducing NI.

Methods

In this randomized controlled trial study, the intervention was implementing an educational HBM-based program. This study was conducted in 2022 for three months at the Imam Reza Hospital in Larestan. The statistical population encompassed 130 nurses employed in this hospital. The sample size in each group regarding the error type I of 0.05, the effect size of 0.784, the power of 90%, and 10% attrition was 30 persons.[25] In total, 60 nurses were selected using the simple random sampling method and assigned to two experimental and control groups. Inclusion criteria were holding at least a bachelor's degree in nursing, willingness to participate in this research, and employment in the concerned hospital as a clinical nurse. Exclusion criteria were also as follows: unwillingness to participate or continue the study, incomplete questionnaires, and being absent for more than two training sessions. The dropouts were five persons in the experimental group (because of being absent in training sessions and incomplete questionnaires; $n=25$) and four persons in the control group (because of incomplete questionnaires and pregnancy weakness; $n=26$).

The required data was collected using a two-section questionnaire. In the first section, the participants' demographic information,

including age, gender, level of education, marital status, hospital department, work experience, and type of employment, was collected. The second section was to assess the nursing staff's awareness, attitudes, and performance in preventing NIs. This 45-item questionnaire was developed by Soleimani *et al.*[26] to address awareness (15 items), attitude (15 items), and performance (15 items). The clinical nurses' awareness was determined based on the number of correct answers to the questions as such, there was 1 point for correct answers and 0 point for each wrong answer. The participants' awareness scores ranged from 0 to 15. The participants' attitude was scored on a 3-point Likert scale: "I agree = 3", "I have no idea = 2", and "I disagree = 1". In this regard, the minimum and maximum scores were 15 and 45, respectively. The nurses' performance in this questionnaire was scored by some propositions addressing the degree of compliance with the NI prevention principles and rules on a 5-point Likert scale (5= always, 4= often, 3= sometimes, 2= rarely, and 1= never). The minimum score of performance was 15, and the maximum score was 75.

The validity and reliability of the concerned questionnaire measuring nurses' awareness, attitude, and performance in preventing NI were examined by Soleimani et al. To check its content validity, they used the content validity index (CVI) and content validity ratio (CVR), both of which were in the range of 0.8-1. The test-retest method was used to measure the external reliability of the questionnaire, and the result was 0.75, reflecting the acceptable reliability of the questionnaire.[26] Prior to the intervention, the two groups completed the questionnaire as a pre-test. Then an educational HBM-based intervention was presented in the conference hall of the Imam Reza Hospital for the experimental group during five 90-minute sessions once a week for five weeks. In this workshop, the content of the sessions was presented according to HBM and the most recent scientific articles, books, and pamphlets of the Center for Disease Control and Prevention of the United States of America. The first session dealt with perceived susceptibility and perceived intensity. In this session, there were lectures and group discussions (five groups of six) on the scientific definition of NI, the high prevalence of NI, and the transmission of microorganisms in hospitals. In the second and third sessions, the other two HBM constructs, including perceived obstacles and perceived benefits, were addressed, and the existing barriers to the prevention of NI and appropriate solutions to remove or control such barriers were discussed. The nurses were trained in NI control methods. In the fourth and fifth sessions, the guidelines for action and self-efficacy as two other HBM constructs were addressed, and there were some discussions on action guidelines, standard precautions, preventive behaviors against NI, nurses' abilities to reduce NI, and their constructive role in NI control. At the end of the intervention, the questionnaire was completed by the experimental and control groups once more. Two months after the intervention, the two groups completed the research questionnaires once more. The nurses in the control groups received no intervention. The collected data was then statistically analyzed with SPSS software version 21 at $p=0.05$.

Ethical considerations. The study was conducted after being approved by the Expert Council of the Faculty of Nursing, Jahrom University of Medical Sciences, receiving licenses from the Research Vice-Chancellor of the Jahrom University of Medical Sciences, and obtaining the code of ethics (Code: IR.JUMS.REC.1401.019). Moreover, the participants submitted their written informed consent prior to the study, and they were ensured of information confidentiality.

Results

The study participants were 60 clinical nurses of the Imam Reza (AS) Hospital in Iran. (Figure 1)

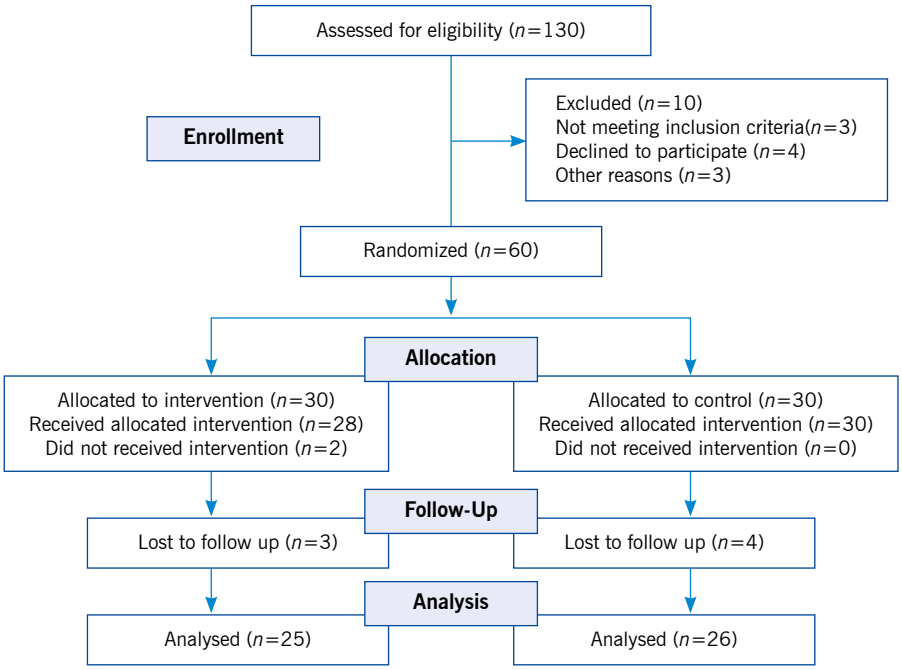

Figure 1. flow chart of the study

Most of the nurses in the experimental (76%) and control (65.5%) groups were female. Moreover, a majority of the participants in the experimental (76%) and control (69.2%) groups were below 10 years of age. In the experimental (92%) and control (92.3%) groups, most of the nurses had <10 years of experience. Most of the nurses in the experimental (60%) and control (84.6%) groups had work shifts in circulation, and most of the participants were undergraduates (80% in the experimental group and 84.6% in the control group). The chi-square test results revealed no statistically significant difference between the two groups in terms of demographic variables ($p>0.05$) (Table 1).

Table 1. Participants' demographic information in experimental and control groups

Variables		Experimental group (n=25)	Control group (n=26)	p-value
		n (%)	n (%)	
Gender	Female	19 (76.0)	17 (65.4)	0.41
	Male	6 (24.0)	9 (34.6)	
Age (years)	<30	19 (76.0)	18 (69.2)	0.43
	31-40	5 (20.0)	8 (30.8)	
	41-50	1 (4.0)	0 (0)	
Marital status	Single	12 (48.0)	10 (38.5)	0.49
	Married	13 (52.0)	16 (61.5)	
Work experience	<10	23 (92.0)	24 (92.3)	0.99
	11-20	2 (8.0)	2 (7.7)	
Work shift	Morning	5 (20.0)	2 (7.7)	0.15
	Evening	5 (20.0)	2 (7.7)	
	Night	0 (0)	2 (7.7)	
	In circulation	15 (60.0)	20 (76.9)	
Level of education	Bachelor's	20 (80.0)	22 (84.6)	0.73
	Master's	5 (20.0)	4 (15.4)	
Type of employment	Employed	11 (44.0)	12 (46.2)	0.60
	Contractual	5 (20.0)	2 (7.7)	
	Agreement-based	1 (4.0)	2 (7.7)	
	Project-based	8 (32.0)	10 (38.5)	

Regarding the comparison of the mean score of the nurses' awareness, attitude, and performance in preventing NI between the experimental and control groups before (T1), immediately (T2), and two months after the intervention (T3), the *t*-test findings indicated no statistically significant difference prior to the intervention ($p>0.05$); however, the differences between the two groups was statistically significant immediately after and two months after the intervention ($p<0.05$) (Table 2). So that immediately and two months after the intervention, the mean score of knowledge, attitude and performance of nurses were significantly higher in the intervention group than in the control group. Also, the results of the analysis of variance with repeated measurements showed that in the experimental group, the changes in the mean score of knowledge, attitude and performance of nurses before, immediately and two months after the intervention were significant, but in the control group, only the changes in the mean score of performance were significant and the changes in the mean score of their awareness and attitude have not been significant (Table 2). The paired comparison of mean score according to the study times in the experimental group showed that the changes in the mean score of knowledge, attitude and

performance of nurses increased significantly only immediately after the intervention compared to before the intervention ($p<0.001$) (Table 3). Also, the paired comparison of mean score according to the study times in the control group also showed that the changes in the mean score performance of nurses two months after the intervention compared to before ($p=0.001$) and immediately ($p=0.001$) after the intervention were significantly reduced (Table 4).

Table 2. Comparison of mean scores of awareness, attitudes, and performance in preventing NI between experimental and control groups before (T1), immediately (T2), and two months after the intervention (T3)

Variable	Groups	T1		T2		T3		*p*-value
		Mean	SD	Mean	SD	Mean n	SD	
Awareness	Experimental	7.44	2.06	10.52	2.90	9.28	2.79	0.001
	Control	7.50	1.90	6.77	3.29	6.96	3.22	0.47
p-value		0.94		0.001		0.009		
Attitude	Experimental	35.92	4.68	38.64	2.20	37.56	4.19	0.047
	Control	35.77	3.60	34.19	3.31	34.62	3.84	0.20
p-value		0.90		<0.001		0.006		
Performance	Experimental	57.48	4.84	61.28	12.80	59.00	3.50	0.009
	Control	56.31	8.29	53.27	11.36	43.88	4.45	0.001
p-value		0.51		0.012		<0.001		

Table 3. Comparison of changes in the mean score of knowledge, attitude and performance in the experimental group before (T1), immediately (T2) and two months after the intervention (T3)

Variable	Time		Mean Difference	Adj. *p*-value
Knowledge	T1	T2	3.08	0.001
		T3	1.84	0.27
	T2	T3	-1.24	0.10
Attitude	T1	T2	2.72	0.011
		T3	1.64	0.21
	T2	T3	-1.08	0.19
Performance	T1	T2	3.80	0.014
		T3	1.52	0.99
	T2	T3	-2.3	0.07

Table 4. Comparison of changes in the mean score of performance in the control group before (T1), immediately (T2) and two months after the intervention (T3)

Variable	Time		Mean Difference	Adj. *P* value
Performance	T1	T2	-3.04	0.44
		T3	-12.42	0.001
	T2	T3	-9.38	0.001

Discussion

The present study aimed to examine the effect of the HBM-based educational program on nurses' awareness, attitudes, and performance in preventing NI in the Imam Reza Hospital in Larestan in 2022. The data analysis results that the nurses' awareness increased significantly immediately after the intervention compared to the pre-intervention phase; however, the increase was not significant two months after the intervention compared to the pre-intervention phase. In this regard, the HBM constructs, especially perceived threats and perceived severity, seemed to arouse sensitivity to NI among nurses. This HBM-based educational program, especially the two HBM constructs of the perceived threat and perceived severity, aimed at enhancing nurses' sensitivity and understanding of the risk of exposure to NI and their critical role in preventing the transmission of NI to patients, patient companions, nurses' families, and even the community. Moreover, these two constructs aimed at arousing the feeling of need among nurses to increase their awareness about NI prevention.

These results are in line with those proposed by other researchers, including Beikmoradi *et al.*,[27] Jeihouni *et al.*,[28] Zeigheimat *et al.,*[25] Darzi Poor *et al*.,[29] Amiri Siavashani *et al.,*[30] and Srithongklang *et al.,*[31] For example, Zeigheimat *et al.* [25] concluded that the HBM-based educational intervention improved the nurses' knowledge about controlling NI, especially about hand washing and injection. Jeihouni *et al*.[28] also indicated a significant increase in the experimental group's awareness immediately after and four months after the HBM-based intervention.

The present findings also indicated a significant increase in the nurses' means scores of attitudes immediately after the intervention compared to the pre-intervention phase; however, no significant difference was observed two months after the intervention compared to the pre-intervention phase. To conclude, this HBM-based educational program, by addressing the three HBM constructs of perceived benefits, perceived barriers, and self-efficacy, has been effective in promoting the nurses' attitudes. This is because this program discussed the benefits of proper behavior and measures in preventing NI as well as the barriers and costs imposed by NI. Moreover, there was an exchange of views with the nurses regarding appropriate alternative solutions to remove, modify, or control the NI barriers, one of the main achievements of which was promoting the nurses' attitude towards their key role in preventing NI and taking appropriate measures to prevent the NI complications and huge costs. This construct cannot be achieved; unless the nurses promote their attitudes and self-confidence by reinforcing their self-efficacy. In this regard, the findings are consistent with those reported by Abdul Rasul *et al.,*[32] Kim *et* al.,[33] and Al Elkaradawy *et al*.[34] For example, Abdul Rasul *et al.*[32] confirmed the positive effect of HBM-based intervention on the healthcare workers' attitudes toward NI at the National Liver Institute in Egypt.

The findings also revealed a significant increase in the nurses' means scores of performances immediately after the intervention compared to the pre-intervention phase; however, no significant difference was observed two months after the intervention compared to the pre-intervention phase. In the control group, the mean score of performance significantly decreased immediately after and two months after the

intervention compared to the pre-intervention phase. Furthermore, implementing the HBM-based educational program by the last HBM structure, i.e., guidelines for action, could help nurses in providing an appropriate framework on how to prevent NI. In this study, the previous five constructs, i.e., perceived susceptibility, perceived severity, perceived barriers, perceived benefits, and self-efficacy, in the training sessions had provided the grounds for changing behaviors towards the final goal of the HBM-based intervention, i.e., improving performance in preventing NI, which was facilitated by the last HBM construct. These findings confirm the findings of Zeigheimat *et al.,*[25] Darzi poor *et al.,*[29] Kouhi *et al*.,[35] and Jihouni *et al*.[28] For example, Zeigheimat *et al*.[25] showed that the HBM-based educational intervention improved the nurses' performance in controlling NI. Amiri Siavashani *et al*.[30] also confirmed that HBM-based training could improve dental students' performance in terms of infection control.

The findings proposed by Kim *et al*.,[33] Kakkar *et al*.[18], and Xiong *et al*.[36] were in contrast with the present findings. However, it should be noted that in Kim et al.'s study, the educational intervention was not based on HBM. In their study, training was done in a compressed manner. Therefore, one of the reasons can be short training course. Also, increasing awareness alone cannot lead to behavior change, and therefore, the use of the health belief model and its structures, especially the structure of perceived barriers, can be effective in removing more barriers and inhibiting factors, and finally, improve performance.To sum up, the present findings documented the effectiveness of the HBM-based educational programs in promoting the nurses' awareness, attitude, and performance in preventing NI, and these findings were also supported by many studies on awareness, attitudes, and performance. One of the strengths of the current study is that the HBM, which is the most specific educational model in the field of health behavior change, was used for the educational intervention. Also, unlike other studies, the impact of the HBM on the three variables of awareness, attitude, and performance has been studied simultaneously. In this study, the potential and power of the HBM has been used with the aim of changing the health behavior of preventing NI in nurses, while in most of the previous studies, it has been used to change the behavior of patients suffering from acute and chronic disorders.

Despite the wide range of topics and content of NI training, due to the interference of training sessions with the professional activities of nurses, there were limitations in the number of training sessions used in the implementation of the HBM, which were considered in in the design of the implementation of the model by the research team.

Conclusion. This study revealed the necessity of HBM-based interventions in promoting nurses' awareness, attitudes, and performance in preventing NI. The findings also indicate that the implementation of the HBM-based educational program could contribute to changing the nurses' behaviors with the support of their improved awareness and attitudes by teaching the benefits of compliance with infection control standards and the life, professional, social and economic risks and complications of NI, discussing how to adjust and remove the barriers to NI prevention, and considering the unique role of self-efficacy. It is suggested to investigate the effect of the HBM-based educational program on the knowledge, attitude and performance of nursing students in preventing NI. Also, the effect of other educational models (PRECEDE- PROCEED, BASNEF) on the prevention of NI should also be investigated.

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Validation of Nursing Outcome Indicators in Patients with Postsurgical Delirium

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Validation of Nursing Outcome Indicators in Patients with Postsurgical Delirium

Abstract

Objective. To validate the content of the indicators proposed from the Nursing Outcome Classification in a care plan for delirium management in older adults. **Methods**. Content validity study, conducted under the expert judgment technique. The procedure was developed in five moments: organization of indicators that respond to the nursing outcome classification for delirium management, support with literature of the indicators that responds to the result, selection of experts, establishment of agreements, and discussion. Quality criteria evaluated: pertinence and relevance, the Content Validity Coefficient and average scores assigned by the experts were calculated. **Results**. The study had the participation of 14 experts. The indicators, according to criteria of pertinence and relevance evaluated by experts showed a global average content index value of 0.93; 97.05% (66) of the

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indicators had Content Validity Coefficient > 0.75. **Conclusion**. The quantitative findings of the indicator validation process showed high relevance and pertinence index, which favors their being applied to measure care changes in patients with delirium.

Descriptors: validation study; delirium; adults; standardized nursing terminology; critical care units.

Validación de indicadores de resultados enfermeros en pacientes con delirium postquirúrgico

Resumen

Objetivo. Validar el contenido de los indicadores propuestos a partir de *Nursing Outcome Classification* en un plan de cuidados para el manejo de delirium en los adultos mayores. **Métodos**. Estudio de validación de contenido realizado bajo la técnica de juicio de expertos. El procedimiento se desarrolló en cinco momentos: organización de los indicadores que responden a la clasificación de resultados de enfermería para manejo de delirium, soporte con literatura de los indicadores que responde al resultado, selección de expertos, establecimiento de acuerdos y discusión. Criterios de calidad evaluados: pertinencia y relevancia. Se calculó el Coeficiente de Validez de Contenido, así como los promedios de los puntajes asignados por los expertos. **Resultados**. Se contó con la participación de 14 expertos. Los indicadores según los criterios de pertinencia y relevancia evaluados por expertos mostraron un valor global promedio de índice de contenido de 0.93. El 97.05% (66) de los indicadores presentaron Coeficiente de Validez de Contenido mayor a 0.75. **Conclusión**. Los hallazgos cuantitativos del proceso de validación de los indicadores mostraron alto índice de relevancia y pertinencia lo que favorece que puedan ser aplicados para medir cambios de cuidado en los pacientes con delirium.

Descriptores: estudio de validación; delirio; adulto; terminología normalizada de enfermería; unidades de cuidados intensivos.

Validação de indicadores de resultados de enfermagem em pacientes com delirium pós-cirúrgico

Objetivo. Validar o conteúdo dos indicadores propostos pela Classificação dos Resultados de Enfermagem em um plano de cuidados para o manejo do delirium em idosos. **Métodos.** Estudo de validação de conteúdo, realizado através da técnica de julgamento de especialistas. O procedimento foi desenvolvido em 5 momentos: organização dos indicadores que respondem à classificação dos resultados de enfermagem para manejo do delirium, suporte com literatura dos indicadores que respondem ao resultado, seleção de especialistas, estabelecimento de acordos e discussão. Foram calculados os critérios de qualidade avaliados: relevância e pertinência, o Coeficiente de Validade de Conteúdo e as médias das notas atribuídas pelos especialistas. **Resultados.** Participaram 14 especialistas. Os indicadores segundo os critérios de relevância e pertinência avaliados por especialistas apresentaram valor médio do índice de conteúdo global de 0.93. O 97.05% (66) dos indicadores apresentaram Coeficiente de Validade de Conteúdo superior a 0.75. **Conclusão.** Os achados quantitativos do processo de validação dos indicadores apresentaram alto índice de relevância e pertinência, o que favorece sua aplicação para mensurar mudanças no cuidado de pacientes com delirium.

Descritores: estudo de validação; delírio; adulto; terminologia padronizada em enfermagem; unidades de terapia intensiva.

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Introduction

The nursing care process (NCP) is a tool that allows professional nurses to apply the scientific method to provide care in continuous and individualized manner, rationally, logically, and systematically.[1] Application of the NCP has been enriched with the use of the nursing taxonomies about results[2] and interventions[3] that summarize the diagnoses of the North American Nursing Diagnosis Association (NANDA).[4] The use of nursing outcomes from the Nursing Outcome Classification (NOC) began in the 1960s; its objective was to assess the quality of nursing care. From there, processes of adjustments and measures have been developed. Currently, the NOC classification, in the sixth-edition text, contains 540 results, 7 domains, and 32 classes. The NOC results, in care plans, quantify the state, behavior or perception of the patient expected to occur in specific moments of a care episode. Each NOC has a battery of indicators evaluated by the professional. The scores issued from the NOC, using a Likert scale from one to five, measure the initial and final state of the diagnosis intervened and, consequently, the change in the patient's health, if any.[2] However, for the NOC to be replicated, it is necessary to validate its indicators, which analyze the adequate psychometric characteristics to measure that for which it was designed.[5] This content validity consists in the evaluation by experts on the study theme of the relevance (importance of the item measured in the context) and pertinence (quality of the item of corresponding entirely to the context) of the items included in a scale.[6,7]

The evaluation of care by nursing professionals to patients with delirium is part of interdisciplinary work, given that management of the diagnosis is multicausal, commonly goes unnoticed by over 67% of non-psychiatric physicians[8,9] and only 22% of the nursing staff identifies delirium and its criteria.[10] A study conducted in Cartagena (Colombia) affirmed that 54.23% of medical professionals and nurses evaluate delirium occasionally, 68.31% evaluate delirium through general clinical evaluation; moreover, 52.11% of the professionals consider that delirium is a pathology that requires intervention.[11]

The foregoing identifies a void in the continuity of caring for delirium and in unifying the results and interventions to implement. In addition, it has led to the need to use evaluation scales for the early detection and management of delirium. However, few of these scales or tools have been validated and are typical of nursing professionals.[12] Based on the aforementioned, the aim of this study was to validate the indicators contained in the NOC of a nursing care plan developed previously by the research team to manage elderly patients with postsurgical delirium. This care plan included 11 NOC: cognition, nutrition, cardiac pump effectiveness, circulatory state, hydric balance, respiratory state, pain control, mobility, electrolyte and acid-base

balance, sleep and vital signs.[8] The vital sign NOC was identified as an activity inherent to the care provided by professionals in addition to being in the protocols of hospital institutions, hence, it was excluded from the validation. The context to which the care plan is applied corresponds to the intensive care units (ICU) and hospitalization units where postsurgical delirium is treated.

Methods

Design. A content validity process was carried out by expert judgment using the Delphi method.[13] The population was comprised by nurses with graduate studies, experience in ICU and hospitalization of at least two years, including management of patients with delirium and the nursing care process. The participants were recruited according to their compliance with the inclusion criteria through contact with the academic units linked to the hospital institutions participating in the research. The sample was taken according with the criteria by Hyrkäs *et al.,*[14] who manifest that 10 experts provide a reliable estimation of the content validity of an instrument; in turn, Voutilainen & Liukkonen[15] indicate that if 80% of the experts have agreed with the validity of an item, it can be incorporated onto the instrument.

Data collection. The study was conducted during two moments: the first from January to May of 2021, with the literature search by the researchers to select the indicators of the results that have been used to evaluate the evolution of patients with delirium, according to NANDA diagnoses established in a prior study carried out in the city of Cartagena (Colombia).[8] The second moment was the evaluation by nurses from August to October of 2021, with the participation of 14 experts from four hospital institutions who assessed the pertinence and relevance of the NOC indicators with the aid of a form delivered via e-mail. The nurses took between five and twenty days to respond.

Instruments. The form used contained two questionnaires: one for sociodemographic variables (age, academic training, work experience, knowledge about the NCP, experience in managing patients with delirium) and another that contained the results to be evaluated with their indicators according to relevance and relevance. Each indicator corresponded to an item from the form, so that nurses made their judgment based on the relevance and pertinence measured with a Likert scale, where they assigned a score from one to five, considering one as not relevant or not pertinent and five as very relevant or pertinent.[16]

Data analysis. To analyze the information, relative and absolute frequencies were calculated for categorical or qualitative variables and measures of central tendency and dispersion for numerical variables. The Content Validity Coefficient (CVC) was calculated for each of the items. When the experts assigned scores of 4 or 5 (relevant and pertinent), these were assumed as a favorable concept and the fraction was calculated with the total responses for each item, following what was proposed by Polit *et al*.,[16] in addition, the mean of the scores of the indicators is presented. Calculations were performed on the STATAv statistical software.

Ethical considerations. The study was based on Resolution 8430 of 1993 by the Colombian Ministry of Health[17] and the Declaration of Helsinki promulgated by the World Medical Association in 2000.[18] The research was considered a study without risk. Among the ethical principles of the research, autonomy was taken into account. The informed consent was requested to be signed and forwarded by e-mail; the objective of the research was explained to the participants in the document, highlighting that their participation and withdrawal was voluntary. The study was endorsed by the ethics committee at Universidad de Cartagena (Colombia) with minute 02 of May 11, 2021.

Results

Fourteen expert judges participated by reviewing the indicators from 10 NOC. The experts were characterized, thus: eight with Masters educational level and 7 with specialization; with an average of 15.28 ± 8.87 years of work experience and an average of 9.21 ± 4.26 years managing patients with delirium (Table 1).

Table 1. Description of participating expert judges

Participant	Sex	Educational level	Work experience	Years managing patients with delirium
P1	Woman	Specialist	8	6
P2	Woman	Masters	20	10
P3	Woman	Masters	25	10
P4	Woman	Specialist	5	5
P5	Woman	Masters	15	10
P6	Woman	Masters	16	5
P7	Woman	Specialist	8	7
P8	Woman	Specialist	2	2
P9	Man	Masters	22	16
P10	Man	Masters	21	10
P11	Woman	Masters	26	15
P12	Woman	Masters	30	16
P13	Man	Specialist	7	7
P14	Woman	Specialist	10	10

Table 2 shows the CVC according to the pertinence and relevance criteria of each of the NOC indicators; 68 indicators were linked, among which 9 from cognition NOC, 7 from sleep, 10 from nutrition, 7 from cardiac pump effectiveness, 7 from circulatory state, 5 from hydric balance, 10 from electrolyte and acid-base balance, 6 from respiratory state, 5 from pain control, and 7 from mobility. It is noted that 85.52% (58) had CVC > 0.80, 97.70% (66) with CVC > 0.75, and only two items had low scores, which are "040004 Ejection fraction" with CVC = 0.64 and "040105 Central venous pressure" with CVC = 0.57.

Table 2. Content Validity Coefficient and average score of the NOC indicators

Indicators	Pertinence		Relevance		Total	
	CVC	Average	CVC	Average	CVC	Average
Cognition						
90003 Aware	1.00	4.50	0.85	4.50	0.93	4.50
90004 Concentrates	1.00	4.57	1.00	4.50	1.00	4.54
90005 Is oriented	1.00	4.78	0.78	4.85	0.89	4.82
90006 Immediate memory	0.78	4.14	1.00	4.35	0.89	4.25
90007 Recent memory	0.78	4.07	1.00	4.50	0.89	4.29
90009 Processes information	0.92	4.50	1.00	4.57	0.96	4.54
90013 Understands meaning of situations	0.85	4.42	0.85	4.42	0.85	4.42
90014 Clear communication according to age	0.85	4.28	0.78	4.14	0.82	4.21
90015 Adequate communication according to age	1.00	4.71	0.92	4.57	0.96	4.64
Sleep						
000401 Hours of sleep	1.00	4.87	1.00	4.92	1.00	4.90
000404 Quality of sleep	1.00	4.78	1.00	4.92	1.00	4.85
000418 Sleeps entire night	0.92	4.50	0.78	4.35	0.85	4.43
000420 Comfortable room temperature	1.00	4.64	0.92	4.64	0.96	4.64
000421 Difficulty falling asleep	0.92	4.71	0.92	4.57	0.92	4.64
000406 Interrupted sleep	0.92	4.57	0.85	4.57	0.89	4.57
060014 Blood urea nitrogen	0.78	4.14	0.78	4.07	0.78	4.11
Nutrition						
100901 Calorie intake	0.85	4.28	0.85	4.35	0.85	4.32
100902 Protein intake	0.92	4.50	0.85	4.64	0.89	4.57
100903 Fat intake	0.92	4.50	0.85	4.57	0.89	4.54
100904 Carbohydrate intake	0.92	4.50	0.85	4.57	0.89	4.54
100910 Fiber intake	0.92	4.50	0.85	4.57	0.89	4.54
100905 Vitamin intake	0.85	4.28	0.78	4.35	0.82	4.32
100906 Mineral intake	0.78	4.00	0.78	4.07	0.78	4.04
100907 Iron intake	0.78	4.21	0.71	4.21	0.75	4.21
100908 Calcium intake	0.85	4.42	0.78	4.50	0.82	4.46
100911 Sodium intake	0.92	4.50	0.85	4.50	0.89	4.50
Cardiac pump effectiveness						
040001 Systolic blood pressure	1.00	4.92	1.00	4.92	1.00	4.92
040019 Diastolic blood pressure	1.00	4.92	1.00	4.92	1.00	4.92
040002 Heart rate	1.00	5	1.00	4.92	1.00	4.96
040003 Cardiac index	1.00	4.78	1.00	4.57	1.00	4.68

Table 2. Content Validity Coefficient and average score of the NOC indicators (Cont.)

Indicators	Pertinence		Relevance		Total	
	CVC	Average	CVC	Average	CVC	Average
040004 Ejection fraction	0.64	4	0.64	3.92	0.64	3.96
040020 Urinary output	0.92	4.71	0.85	4.5	0.89	4.61
040025 Central venous pressure	0.71	4.07	0.78	4.35	0.75	4.21
Circulatory state						
040101 Systolic blood pressure	0.92	4.64	0.92	4.57	0.92	4.61
040102 Diastolic blood pressure	0.92	4.64	0.92	4.57	0.92	4.61
040104 Mean arterial pressure	1.00	4.92	1.00	4.85	1.00	4.89
040105 Central venous pressure	0.57	4.64	0.57	4	0.57	4.32
040135 Partial pressure of oxygen in blood	0.85	4.64	0.85	4.57	0.85	4.61
040137 Oxygen saturation	0.92	4.64	0.85	4.57	0.89	4.61
040140 Urinary output	0.92	4.50	0.85	4.42	0.89	4.46
Hydric balance						
60107 Balanced daily inputs and outputs	1.00	4.78	1.00	4.71	1.00	4.75
60116 Cutaneous hydration	0.85	4.5	0.92	4.50	0.89	4.50
60118 Serum electrolytes	1.00	4.92	1.00	4.85	1.00	4.89
60119 Hematocrit	1.00	4.85	1.00	4.78	1.00	4.82
60127 Amount of urine	0.92	4.71	0.92	4.57	0.92	4.64
Electrolyte and acid-base balance						
060003 Breathing frequency	0.92	4.64	0.92	4.71	0.92	4.68
060005 Serum sodium	0.92	4.64	0.92	4.57	0.92	4.61
060006 Serum potassium	0.92	4.57	0.92	4.57	0.92	4.57
060007 Serum chloride	0.85	4.50	0.92	4.57	0.89	4.54
060008 Serum calcium	0.78	4.28	0.71	4.28	0.75	4.28
060009 Serum magnesium	0.78	4.92	0.71	4.28	0.75	4.60
060010 Serum pH	1.00	4.92	1.00	4.92	1.00	4.92
060013 Serum bicarbonate	1.00	4.78	1.00	4.92	1.00	4.85
060026 Serum glucose	1.00	4.78	0.85	4.71	0.93	4.75
060014 Blood urea nitrogen	1.00	4.78	0.92	4.64	0.96	4.71
Respiratory state						
41004 Respiratory frequency	1.00	4.92	1.00	5	1.00	4.96
41005 Respiratory rate	1.00	4.92	1.00	5	1.00	4.96
41007 Pathological respiratory sounds	1.00	4.92	1.00	5	1.00	4.96
41012 Ability to eliminate secretions	1.00	4.71	1.00	4.78	1.00	4.75
41017 Depth of inspiration	1.00	4.78	1.00	5	1.00	4.89
41018 Use of accessory muscles	1.00	4.92	1.00	4.92	1.00	4.92

Table 2. Content Validity Coefficient and average score of the NOC indicators (Cont.)

Indicators	Pertinence		Relevance		Total	
	CVC	Average	CVC	Average	CVC	Average
Pain control						
160502 Recognizes beginning of pain	0.92	4.78	1.00	4.71	0.96	4.75
160509 Recognizes symptoms associated with pain	1.00	4.85	1.00	4.71	1.00	4.78
160511 Reports controlled pain	1.00	4.71	0.92	4.57	0.96	4.64
160513 Reports changes of symptoms to health staff	1.00	4.64	1.00	4.57	1.00	4.61
160516 Describes pain	1.00	4.85	1.00	4.78	1.00	4.82
Mobility						
020801 Maintaining balance	0.85	4.35	0.92	4.57	0.89	4.46
020809 Coordination	1.00	4.57	0.92	4.57	0.96	4.57
020815 Bone integrity of the lower extremity	0.85	3.92	0.71	4	0.78	3.96
020803 Muscular motion	1.00	4.71	1.00	4.71	1.00	4.71
020804 Articular motion	0.85	4.28	0.85	4.28	0.85	4.28
0200802 Maintaining body position	0.92	4.64	1.00	4.78	0.96	4.71
020806 Ambulation	0.92	4.35	0.92	4.42	0.92	4.39

Table 2 shows that the health physiology domain contains the most nursing outcomes (NOC) 7/10; in these seven results, each indicator was scored by the experts with agreement among them > 4.20, corresponding to being pertinent and relevant. Likewise, it is possible to identify the relationship between results, like Cardiac pump effectiveness and Circulatory state, where indicators to be evaluated are shared, and between Hydric balance and Electrolyte and acid-base balance, which share indicators to measure. It is shown how the nutritional state NOC is a necessary element to be incorporated in monitoring of patients with eight indicators.

Discussion

The findings reveal that the indicators selected for each of the 10 NOC contemplated in this study are pertinent and relevant, which is why they can be considered by nursing professionals to evaluate the evolution of care for adult and elderly patients with postsurgical delirium. Most of the indicators had a CVC mean > 0.80. The evolution is complemented with monitoring of vital signs.

This work is among the first to use NOC indicators to measure the evolution of patients with postsurgical delirium, a fact that also hinders discussion with other previous studies. The expert participants showed graduate academic level, which leads to believe that they managed adequately the concept of patients with delirium. It is noteworthy that the use of these indicators may complement the use of other evaluation instruments, highlighting the CAM-ICU scale, considered the valid and reliable psychometric instrument to issue the delirium diagnosis,[19,20] as well as to determine the prevalence of the problem.[21]

In relation with the indicators, the NOC result: Cognition showed nine indicators to measure, with "is oriented" being relevant. Thus, is how Inouye *et al*.,[22] showed in their study that specific interventions of information on orientation, for example, date, time, names of hospital staff, cognitive stimulation activities, among others, reduce significantly the number and duration of delirium episodes in relation with patients not monitored with the information described. Due to being quite close to patients, nurses are perhaps the individuals who can better stimulate patient orientation in the ICU and contribute to earlier reversal of delirium.

Moreover, from the nutrition NOC, it was evidenced that protein, fat, carbohydrate, fiber, and calcium intake is considered important by the experts. The literature shows that managing elements, like electrolytes and proteins is key. It has been demonstrated that biochemical alterations (low sodium and potassium levels) and a low body mass index (BMI) are indicators that lead to deteriorated cognitive function that predispose the severity of delirium.[23] Thereby, the need is evidenced for biochemical monitoring in coordination with other disciplines.

The NOC indicators related with cardiac pump effectiveness and circulatory state relate to monitoring of diastolic and systolic blood pressure in patients, as mechanism to control adequate and sufficient perfusion at the cerebral level in these patients. This is coherent with the findings by Wang *et al*.,[24] who reported greater prevalence of postsurgical delirium in patients undergoing surgical procedures that occurred with low saturations due to their decreased mean arterial pressure.

It was evidenced in the results that maintaining electrolytes, pH, bicarbonate, and hematocrits are necessary variables to measure during the patient's clinical signs and symptoms. This agrees with that explained by Artola *et al.,*[25] who reported that early detection of dehydration signs, states of oliguria added to maintaining a hydric balance lead to early identification of hydro-electrolyte alterations and, with this, permit unifying correct treatment actions by the interdisciplinary team.

With regards to the respiratory state NOC, the experts classified the six indicators with maximum pertinence and relevance, which could infer that oxygenation is an essential process for optimal brain functioning, thought processes and the state of cognition that, in situations like surgical procedures can be compromised, causing delirium in patients. Therefore, if each of the indicators is evaluated in time, the condition could be controlled early. In this respect, Recasens *et al.,*[26] through a program, via prior training and formation of nursing professionals on the management of the NANDA, NOC, NIC taxonomy, managed to incorporate the evaluation of the respiratory state NOC and, with this, evaluation of care was standardized, in addition to supporting nursing professionals to pay attention to changes specific to the respiratory state.

Finally, upon analyzing the mobility, pain control and sleep NOC indicators, it may be documented that their articulation is important in the evolution of the delirium condition; patients can recognize the moment when their pain begins and mention these changes to the health professional, they could correlate whether it is during mobility, exercise, or postural change, in addition to the fact that it could cause changes in the hours and quality of sleep of patients with delirium. The foregoing is corroborated with the study by Rodríguez *et al*.,[27] where the range of pain prevailing in postsurgical patients was slight, attributed, among other factors, to its early detection and to correcting activities, like early mobilization to ensure that the patient intervened reconciles sleep.

Among the strengths of this study, it is considered that the indicators evaluated guide in care process for patients with delirium in ICU and hospitalization contexts in which this condition can develop. It is convenient to continue exploring other interventions that involve, for example, the

family,[28] or that take place in other services, like emergency,[29] besides analyzing the effect on the workload[30] of the nursing staff given the occurrence of delirium in patients. Further, it would be worth investigating possible interventions or guidelines at the home level,[31] as well as performing post-discharge research to determine the quality of life and functionality [32] in patients who have endured this event.

Among the limitations of this study, it should be noted that the validation was applied by experts who manage the taxonomies, which is why its implementation requires extensive knowledge by all nursing professionals to manage a clinical diagnosis, like delirium. Furthermore, it is necessary to continue advancing in validation studies involving more countries and which explore more advanced procedures.

Regarding the practical implications of this research, it is worth highlighting that application of the NANDA, NOC, NIC taxonomy allows obtaining precise information that should be assumed by health professionals, in their care practice, because it has been proven that it allows them to make their practice fluid, define interventions patients require, and evaluate the evolution of the diagnosis labeled. In line with the aforementioned, this requires training on managing taxonomies, something that should be evaluated in undergraduate and graduate training.

Conclusion. The findings, herein, show a high relevance and pertinence index of the indicators evaluated, which favors their being applied to measure care changes in patients with delirium. Among these changes, indicators of aspects related to sleep quality, biochemical measures, pain control or cognition are included.

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Use of Research in the Nursing Practice: from Statistical Significance to Clinical Significance

Reflection article

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Use of Research in the Nursing Practice: from Statistical Significance to Clinical Significance

Abstract

Objective. Within the context of evidence-based practice, this article exposes the reflection on the understanding and usefulness of the information provided by the research findings shared in reports and research publications, exposing differences based on the interpretation of statistical significance and clinical significance. **Content synthesis**. Basic aspects of the meaning and use of the information reported by research on p value (statistical significance) and the value and usefulness of these results are analyzed and exemplified, contrasting the value for the practice of an additional judgment on clinical significance. In addition to establishing conceptual differences, the need is highlighted for nurses to have the competencies to differentiate and apply each of them according to the clinical contexts of their potential implementation. **Conclusion.** The real usefulness of research about

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interventions within the context of nursing care is given by its real application and reach for the practice and benefit for patients. For this to occur, nurses must interpret adequately the information provided by scientific publications and other research reports.

Descriptors: nursing research; data interpretation, statistical; clinical relevance; nursing, practical; evidence-based practice

Uso de la investigación en la práctica de enfermería: de la significancia estadística a la significancia clínica

Resumen

Objetivo. En el contexto de una práctica basada en evidencia, este artículo expone la reflexión sobre la comprensión y utilidad de la información que proveen los hallazgos de investigación reportados en informes y publicaciones de investigación, exponiendo las diferencias a partir de la interpretación de la significancia estadística y significancia clínica. **Síntesis del contenido.** Se analizan y ejemplifican aspectos básicos sobre el significado y uso de la información que reportan las investigaciones sobre valor p (significancia estadística) y el valor y utilidad de estos resultados contrastando el valor para la práctica de un juicio adicional sobre significancia clínica. Además de establecer diferencias conceptuales, se resalta la necesidad de que las enfermeras tengan las competencias para diferenciar y aplicar cada uno de ellos según los contextos clínicos de su potencial implementación. **Conclusión.** La real utilidad de la investigación sobre intervenciones en el contexto del cuidado de enfermería está dada por su real aplicación y alcance para la práctica y el beneficio para los pacientes. Para que ello ocurra, las enfermeras deben interpretar adecuadamente la información que proveen las publicaciones científicas y otros reportes de investigación.

Descriptores: investigación en enfermería; interpretación estadística de datos; relevancia clínica; enfermería práctica; práctica clínica basada en la evidencia.

Utilização da pesquisa na prática de enfermagem: da significância estatística à significância clínica

Resumo

Objetivo. No contexto de uma prática baseada em evidências, este artigo apresenta a reflexão sobre a compreensão e utilidade da informação fornecida pelos resultados da investigação relatados em relatórios de investigação e publicações, expondo as diferenças com base na interpretação da significância estatística e da significância clínica. Síntese de conteúdo. Aspectos básicos sobre o significado e uso das informações relatadas pelas pesquisas sobre valor p (significância estatística) e o valor e utilidade desses resultados são analisados e exemplificados, contrastando o valor para a prática de um julgamento adicional sobre significância clínica. Além de estabelecer diferenças conceituais, destaca-se a necessidade de o enfermeiro ter competências para diferenciar e aplicar cada uma delas de acordo com os contextos clínicos de seu potencial implementação. **Conclusão.** A real utilidade da investigação sobre intervenções no contexto dos cuidados de enfermagem é dada pela sua real aplicação e âmbito de prática e benefício para os pacientes. Para que isso ocorra, os enfermeiros devem interpretar adequadamente as informações fornecidas pelas publicações científicas e outros relatórios de pesquisa.

Descritores: pesquisa em enfermagem; interpretação estatística de dados; relevância clínica; enfermagem prática; prática clínica baseada em evidências.

Introduction

Daily, nurses face dilemmas in clinical practice to make decisions about caring for patients, a situation in which research contributes to the scientific rigor of daily practice, allowing improvements when applying knowledge in favor of caring for patients.[1] Thus, the use of research in nursing practice is fundamental to provide quality and evidence-based care. Nursing research began with Nightingale when she investigated the morbidity and mortality of patients during the Crimean War. From there, it was again taken up until the 1930s and 1940s when nurses began to conduct studies on nursing education. During the 1950s and 1960s, nurses and nursing roles were the focus of research, until the end of the 1970s and 1980s, the aim of research centered on studies to improve the nursing practice. In the 1990s, research sought to describe nursing phenomena, test the effectiveness of nursing interventions, and examine the results on patients. Currently, nursing research of the 21st century considers quality studies through the use of a variety of methodologies, synthesis of research findings, use of this evidence to guide the practice and examine the results of the evidence-based practice.[2]

A key aspect of using research in the nursing practice is the application of scientific evidence on clinical decision making. When basing decisions on the best evidence available, nurses can provide more effective and safe care, but this requires reviewing and critically evaluating published studies, considering their validity, relevance and applicability to the specific clinical situation. It is within this context that it is proven that sufficient knowledge is still not available on the part of clinicians to adequately evaluate the research findings to be translated into practice. Examples of this are the assessments of the concepts of statistical significance and clinical significance. In the nursing field, clinical significance and statistical significance are fundamental concepts in evidence-based decision making. These concepts permit evaluating the relevance of research results and their application in the clinical practice. Although both terms are related, it is important to comprehend their differences and how they complement each other to provide quality care to patients.

In quantitative research, nurse researchers are expected to assess, understand, and report the results of their studies using appropriate statistical methods, as well as provide a description of the clinical relevance of their findings to make sure an article is not just a description of new knowledge, but that it is useful for evidence-based practice. A focus on the magnitude of the effects, rather than simply their statistical significance (p value), could provide the opportunity to link data generated in each study with the clinical relevance these could provide. Reaching this statistical comprehension in the nursing practice will improve directly or indirectly the research articles and will facilitate communication between statisticians and clinical professionals to improve the reporting of research and disseminating findings. However, it is difficult to expect for all nurses to be experts in statistics and, additionally, to ensure that statisticians have the vision and clinical knowledge, so a dialogue must be achieved between both visions.[3]

It is common to read research reports (publications) or see presentations of scientific sessions and conferences in which researchers, when reporting on comparisons of therapeutic or preventive interventions, use the expressions "statistical significance" or "statistically significant". This entails the danger of confusing clinical and statistical significance. Although, traditionally, reports of research results focus heavily on statistical significance, numerous errors have been noted when using this as the only approach to interpret and apply research findings. Furthermore, some warn that decisions should never be made based only on a significance test or p value and that in reality p values continue to be poorly understood and widely misused.[4] In the expression of statistical analyses, undoubtedly, the most universally recognized is the p value. Most people have the notion that a p value < 0.05 means a statistically significant difference among groups being compared. However, the traditional interpretation of statistical significance as $p < 0.05$ is arbitrary and errors have been observed in its interpretation, besides, it is expected that they will change according to the sample size, observing that bigger samples provide results with smaller p values.[5] This article sought to provide basic and conceptual information about the implications of the terms statistical significance and clinical significance and make people reflect on the understanding and usefulness of the information provided by research findings shared in reports and research publications.

Statistical significance

Overall, it could be understood that statistical significance is a term indicating that the results obtained in an analysis of data from a sample are unlikely to be due to chance at some specific level of probability, given the veracity of a null hypothesis. Thus, a p value represents the probability of calculating a statistical test from the data from a sample (*e.g.*, a mean difference between two groups) that is equal to or more extreme than that observed in the sample data assuming that the null hypothesis is actually true. In other words, the p value measures how compatible the data from the sample is with the null hypothesis (*e.g.*, there are no differences between the groups).[6-8]

Significance tests have become an integral part of the process of quantitative research in scientific disciplines, including nursing. These tests complement the scientific method and offer an objective dimension in the analysis of studies to answer questions from the practice. Studies use a predefined threshold to determine when a p value is small enough to support a hypothesis in the study. Conventionally, this threshold is set at a p value of 0.05, equivalent to a type-I error probability level (alpha level or p) of 5% and whose determination is achieved through hypothesis tests. However, there may be situations and justifications for studies to use a different threshold, if appropriate.

As outlined, researchers typically develop two types of hypotheses, a null hypothesis (H_0) and an alternative hypothesis (H_1). The null hypothesis establishes that no relation exists (or there is no difference) among groups in the study of variables of interest and any relationship that can be observed is due to chance or sampling fluctuations. The alternative hypothesis affirms that a relation or difference exists, which is not due to chance and is assumed real (example in Table 1).

Table 1. Example of an intervention study

Nurse researchers propose a study within the context of neonatal care in which they expect to evaluate if an effect exists on the abandonment of breastfeeding from an intervention denominated "Breastfeeding Support Program (BSP)". For this, they assign randomly mothers of children hospitalized in the neonatal unit to an experimental group, which receives the individualized breastfeeding support program, while other mothers were assigned to the control group, which receives standard or habitual care and education. Within this scenario, the researchers would hypothesize that a difference exists in the proportion of mothers who abandon breastfeeding one month after hospital discharge depending on whether or not they receive the intervention, which is denominated research, working or alternative hypothesis (H1). Moreover, and given that there is always the possibility of no difference among the groups, a hypothesis must also be established that reflects this lack of difference (effect), denominated null hypothesis (H0); that is, not finding differences in the proportion of abandonment of breastfeeding among the groups upon ending the monitoring.

It should be mentioned that, in studies using a sufficiently large sample, a statistical test almost always will demonstrate a significant difference, unless there is no effect at all, that is, when the effect size is exactly zero. Furthermore, very small differences, even being significant, often make no sense and do not provide value or utility for the practice. Therefore, reporting only the significant p value for an analysis is not adequate for readers to fully understand the results.[8] As reinforced by Polit,[9] an important reason for not homologating statistical significance with clinical significance is precisely because statistical significance is strongly affected by sample size and, thus, in a study with a large sample, the statistical power is high and the risk of committing a type-I error (erroneously concluding that no relationship exists among the variables) is low. Polit exemplifies it thus, "…with a sample size of 500, a modest correlation of $r = 0.10$ is statistically significant at $p < 0.05$, even though such a weak relationship may have little practical importance".[9, p.18]

Clinical significance

Given that no universal agreement exists on the definition of clinical significance, various approaches exist for its evaluation. In addition, it has not received sufficient attention in the specific nursing literature reflecting that recent progress in measuring the clinical importance have not penetrated to a large extent in nursing.[9] It is even described that its use has been carried out inconsistently and without always considering a measurable result for the patient.[10] Overall, clinical significance refers to the practical importance of a result in real life or the benefits of research results for users and patients. It often measures the magnitude of the relation between an independent variable and an outcome variable. As expressed, conceptually, the importance of clinical significance is illustrated in its comparison with statistical significance. This is that, while the p values of a statistically significant finding indicate the probability that a change is caused by chance, clinical significance establishes whether this change or difference is large enough to have implications in practice. As anticipated, it is recognized that a p value cannot express the clinical relevance or importance of the effects observed from an intervention and specifically, does not provide details on the magnitude of an effect. So, although a p value is significant (conventionally < 0.05), it is possible that the difference between groups is small. This phenomenon is especially common with larger samples in which comparisons can yield as a result statistically significant differences that are actually not clinically significant.[10]

As proposed by Bruner *et al.*,[10] numerous problems exist associated with using clinical significance in the nursing literature. Among these, they highlight the lack of consensus on the use of the term from a multiplicity of opinions, definitions, and uses. In turn, given that clinical significance is commonly based on the researcher's judgement, the term is sometimes used subjectively and the findings are prone to bias in favor of positive results. Lastly, most studies do not incorporate the patient's perspective. Thus, it is necessary to highlight that besides this vision from the clinician's perspective, there are proposals that have been gaining space in the assessment of research and its applicability in the practice and which is guided from the very patient's perspective, such as the concept of minimal clinically important difference.[11]

Application of statistical significance and clinical significance

To illustrate the relation between statistical and clinical significance, let us consider the fictitious scenario in which a group of research nurses studies a breastfeeding support program to reduce early abandonment of breastfeeding after hospital discharge (Table 1). Supposing that the result or outcome is measured in a binary scale, like maintains/abandons breastfeeding, at the end of the study, a significant difference is reported on the proportion of abandonment of breastfeeding between both groups. Although this result indicates that the difference between

the study groups is probably not due to chance, it only provides partial information, given that, strictly speaking, statistical significance has not proven anything. When a result is deemed statistically significant, it is understood that an independent variable has an effect upon a dependent variable but does not prove that something will occur, given that the p value does not express magnitude.

It is necessary to know whether or not this finding, in addition to being a statistically significant difference, has any clinical value. Reviewing the results, it is confirmed that abandonment of breastfeeding one month after hospital discharge in the experimental group was 20%, while in the control group it was 60% (Figure 1). This drastic reduction in abandonment of breastfeeding in the experimental group could be considered relevant given the known benefits of breastmilk in different settings, both for the mother and child, which supposes that the potential population benefitted would justify implementing a program within the hospital context, like the one studied. Additionally, the researchers have reported a *p* value = 0.045, which under the conventional assumption of the limit value assigned to it of 5% (0.05), also corroborates statistical significance.

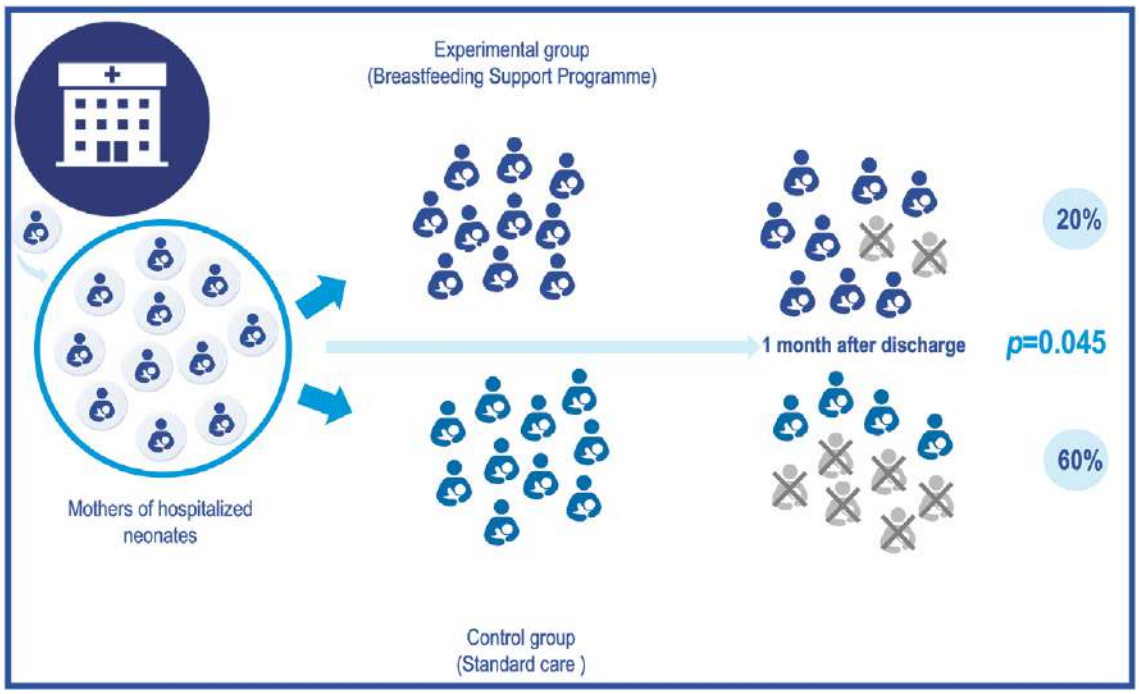

Figure 1. Example 1 of effect of a breastfeeding intervention, differences between groups and p value

Now, let's suppose another scenario where in a similar proposal researchers recruited more participants for their research, obtaining a result that highlighted that in the experimental group abandonment of breastfeeding one month after discharge was 48% while in the control group it was 52%. Although the statistical significance reported by the researchers, given the p value = 0.028, indicates statistically significant differences between the groups, it is necessary to consider whether the merely 4% reduction in the outcome studied justifies implementing an individualized breastfeeding support program. Thereby, researchers and readers of the research report will have evidence to discuss carefully this statistically significant finding, highlighting the apparently marginal clinical importance of the resources required to implement the intervention. Further, in comparing the examples mentioned, differences in p values obtained are expressed given the influence of the also different sample sizes. In this case, it is noted that although the p value from the example in Figure 2 is lower than that in Figure 1 (0.028 Vs. 0.045), clarifying that a smaller p value does not necessarily guarantee clinical significance.

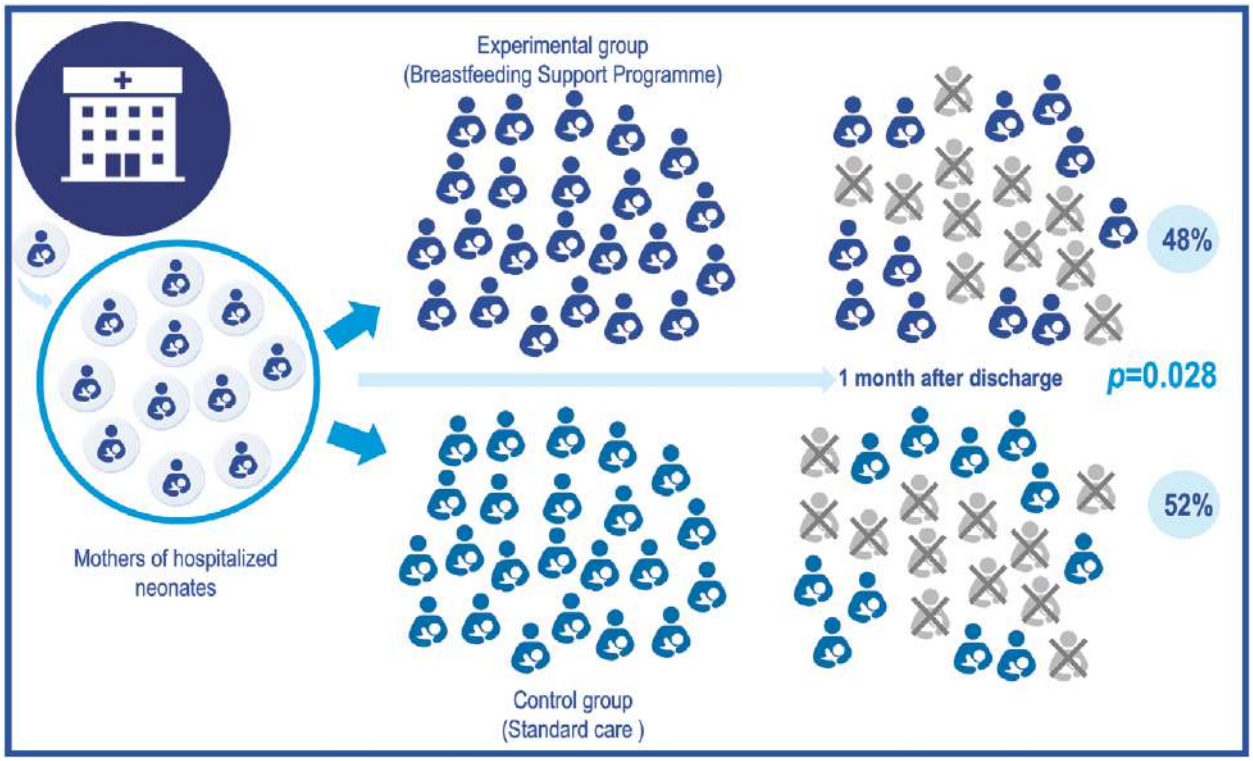

Figure 2. Example 2 of effect of a breastfeeding intervention, differences between groups and p value.

Hence, as reflected in this example, the clinical significance of the research results is best evaluated by making a judgment based on clinical experience, assessing the benefits, costs, and risks associated with the findings of each study. If the benefits (or effects) reported clearly outweigh the risks and the effect is large enough, then a statistically significant finding is also clinically significant.

To end, it is worth mentioning that besides a purely qualitative view of how large or small a difference or effect is found in the results of a study, the size of the effect is estimated with different indices. Overall, a difference exists between those analyzing effect sizes between groups and those analyzing measures of association between variables. For two independent groups, the size of the effect can be measured through the standardized difference between to measurements. Cohen's d term is an index of the size of the effect and classifies it into small (d=0.2), medium (d=0.5), and large (d=0.8) effect sizes.[8] Readers should delve into this and other concepts of effect size measurements.

Conclusion

This article has sought to reflect on the need for clinical nurses, as well as those who use research findings for their potential application, to expand the evaluation of study results beyond the merely statistical evaluation and contrast this information with clinical usefulness and its impact on patients and population. It is clear that exclusive dependence on statistical significance to assign meaning and importance to research findings continues being a problem in different areas of health sciences and in nursing. Upon contrasting conceptually, the scope of the terms statistical significance and clinical significance, it is expected that evidence-based decisions will be made cautiously, understanding that statistical significance allows inferences to be made about the results of a study, but this is not sufficient to make sound recommendations about the potential clinical benefits from those findings. Consequently, researchers and clinicians need to always assess the clinical importance of the research findings and weigh statistically significant results within the context of their importance for the practice and benefit in patients.

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Being Part of an Editorial Board: Implications and Scope for Scientific Communication and Personal Academic Development*

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Reflection article

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Being Part of an Editorial Board: Implications and Scope for Scientific Communication and Personal Academic Development

Abstract

Objective. From my experience as a member of the editorial board of the journal *Investigación y Educación en Enfermería*, the implications and scope of participating in this entity and the mutual and reciprocal benefits of this academic interaction between members of the editorial board and the journal are explained. **Content synthesis.** The key elements on operation, integration, tasks, and responsibilities of editorial boards to disseminate scientific research in different disciplines are analyzed and described, highlighting the rigor and commitment to academic ethics that allows guaranteeing the credibility of the contents published and topics addressed by a journal within a context of high competitiveness and risk of breaches of academic and scientific probity and ethics.

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Conclusion. Integrating an editorial board requires developing a fundamental role that implies a series of commitments and challenges that must be addressed with professionalism and ethics to guarantee the quality and prestige of the academic publication. In this task, achievements and goals are reached for the journal, as well as academic benefits for the editorial board members.

Descriptors: periodicals as topic; editorial policies; scholarly communication; scientific and technical publications.

Ser parte de un comité editorial: implicancias y alcances para la comunicación científica y el desarrollo académico personal

Resumen

Objetivo. A partir de mi experiencia como integrante del comité editorial de la revista Investigación y Educación en Enfermería, se exponen las implicancias y el alcance de participar en esta entidad y los beneficios mutuos y recíprocos de esta interacción académica entre los miembros del comité editorial y la revista. **Síntesis del contenido**. Se analizan y describen los elementos claves sobre funcionamiento, integración, tareas y responsabilidades de los comités editoriales para la difusión de investigaciones científicas en las distintas disciplinas, resaltando el rigor y compromiso con la ética académica que permite garantizar la credibilidad de los contenidos publicados y las temáticas abordadas por una revista en un contexto de alta competitividad y de riesgo de faltas a la probidad y ética académica y científica. **Conclusión**. Integrar un comité editorial exige desarrollar un papel fundamental que implica una serie de compromisos y desafíos que deben abordarse con profesionalismo y ética para garantizar la calidad y el prestigio de la publicación académica. En esta tarea se alcanzan logros y metas tanto para la revista, así como se obtienen beneficios académicos para los integrantes del comité editorial.

Descriptores: publicaciones periódicas como asunto; políticas editoriales; comunicación académica; publicaciones científicas y técnicas.

Fazer parte de um comitê editorial: implicações e escopos para a comunicação científica e o desenvolvimento acadêmico pessoal

Resumo

Objetivo. Com base na minha experiência como membro do conselho editorial da *Revista Investigación y Educación en Enfermería*, são apresentados as implicações e o alcance da participação nesta entidade e os benefícios mútuos e recíprocos desta interação acadêmica entre os membros do conselho editorial e a revista. **Síntese de conteúdo.** São analisados e descritos os elementos-chave sobre o funcionamento, integração, tarefas e responsabilidades dos comités editoriais para a divulgação da investigação científica nas diferentes disciplinas, destacando o rigor e o compromisso com a ética académica que permite garantir a credibilidade dos conteúdos publicados e os temas abordados por uma revista em um contexto de alta competitividade e de risco de violação da probidade e da ética acadêmica e científica. **Conclusão.** Integrar um comitê editorial exige desenvolver um papel fundamental que envolve uma série de compromissos e desafios que devem ser enfrentados com profissionalismo e ética para garantir a qualidade e o prestígio da publicação acadêmica. Nessa tarefa são alcançadas conquistas e metas para a revista, bem como benefícios acadêmicos para os membros do comitê editorial.

Descritores: publicações periódicas como assunto; políticas editoriais; comunicação acadêmica; publicações científicas e técnicas.

Introduction

Editorial boards of academic journals play a fundamental role in scientific development and advancement, as well as in the growth of disciplines and professions by providing scientific support that backs their actions. These boards, comprised by experts in specific fields, are responsible for reviewing and evaluating manuscripts submitted for possible publication based on the policies and regulations defined according to their action setting and scope. Given the aforementioned, the quality and visibility of the contents of a journal are closely linked to the editorial process, and it is, therefore, necessary for editorial policies to define criteria for accepting manuscripts, technical conditions, regulatory standards, peer-review model, frequency of publication, among other aspects.[1]

The editorial board is generally made up by outstanding members in the journal's particular field. These should be research peers whose criteria are highly respected within the journal's discipline; otherwise, their decisions might not be considered valid. Board members act as journal ambassadors and much of their quality is judged by the merits and academic credentials of its staff.[2] This way, based on the academic support of each member, one of the most important objectives of the editorial board members is to improve the impact of their journals and, in addition, thanks to this academic prestige, they seek to improve the quality of their journals.[3,4] Consequently, the importance of the scientific merit to select the editorial board members is highlighted as fundamental criterion for a sound editorial evaluation of the manuscripts the journal receives and publishes.[5]

As reported by the Springer Nature website (international scientific publisher in the field of science and medicine),[2] the functions of the editorial board in its advice and support to the editor include: advising on the direction of the journal by giving feedback on published issues and suggesting potential topics and authors; providing content by writing occasional editorials and other short articles; contacting and suggesting possible contributors; conducting peer review, helping to identify other peer reviewers, and providing second opinions about articles in case of conflict among reviewers.

Currently and for some years now, aware of the high competition to attract research work and articles of interest for a journal, a certain laxity or flexibility has been detected in the evaluation criteria to sustain the viability of the journal. Given this panorama, it is when a greater need exists for high-quality editorial boards with sufficient demanding standards, so that contents published have support that guarantees the veracity of what is published and is useful for the specific science community and society. This article, from my experience as Editorial Board member of the journal *Investigación y Educación en Enfermería*, seeks to expose the implications and scope of participating in this entity and the mutual and reciprocal benefits of this academic interaction.

The transition to becoming an editorial board member

In the life of an academic, different stages are undertaken and different functions are developed. It is likely that, in many cases, the attraction to becoming a university professor, in addition to teaching, lies in the idea of conducting research and generating knowledge in specific disciplinary settings. The development of skills for research and scientific production based on works presented at conferences, as well as the preparation of manuscripts for publication, constitute a basic point to meet an academic standard sufficient to be considered in any journal scientific or editorial board.

Further, in the construction of a specific academic profile, one comes across attractive journals and on which one projects the intention of being part of them. In my experience, in the early 2000s, I had the opportunity to hold an issue of the journal *Investigación y Educación en Enfermería*. Due to the themes and quality of the works, as well as the editorial line and aspects of style, my aspiration arose to be part of the Journal. In this experience and from these two perspectives, two approaches come together as a basis for meeting the basic conditions to be part of an editorial board. As illustrated in Figure 1, essential conditions and experiences are needed to meet the requirements to join these boards.

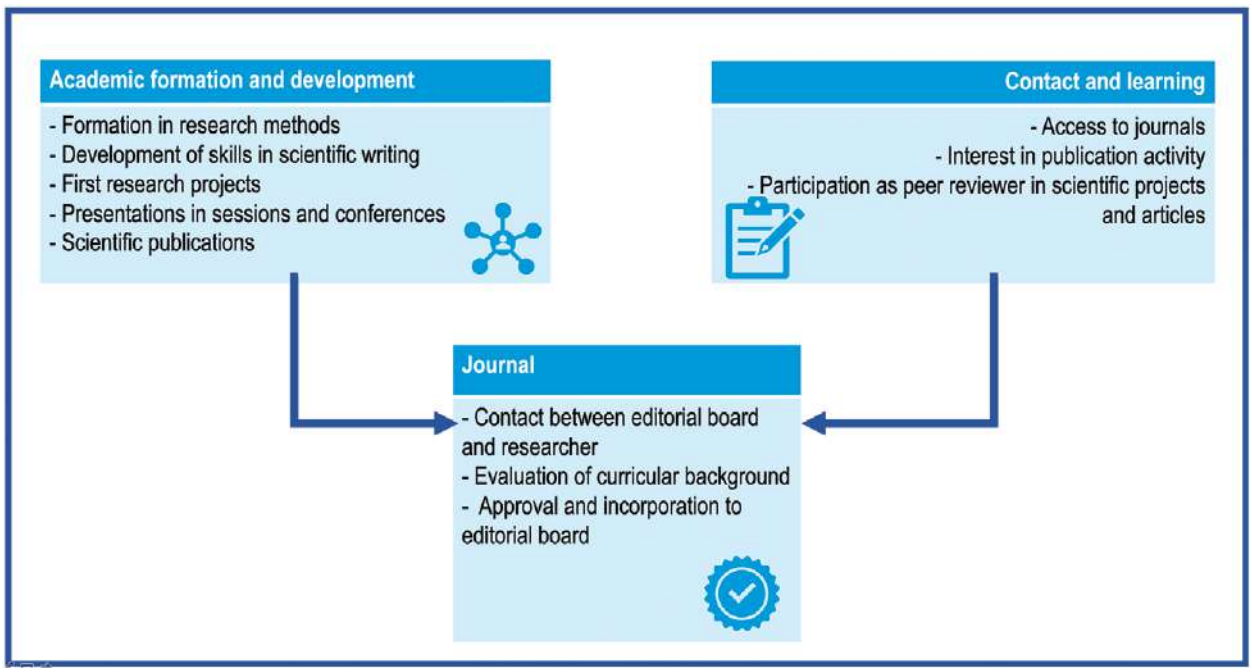

Figure 1. Necessary elements and conditions to integrate an editorial board.

Learning and assessment of the rigor of a scientific journal

From the experience in *Investigación y Educación en Enfermería*, and on a retrospective analysis of the evolution during 15 years (since my incorporation in 2008) to what it is today, the actions and strategies the Journal has undertaken to achieve the position of excellence it boasts as a high-impact publication, and its incorporation into reference bases of the highest prestige, become evident.

What lies behind these achievements exposes all the integrated work involving actions from the Institution, policies defined by directors and editors at different times, and the joint work with the editorial board and the team of peer reviewers. This results in a highly rigorous operation with a solid and organic structure to achieve higher standards of management and efficiency. A crucial point has been the rigorous selection of its editorial and scientific team, incorporating the most-suitable people.

We can, thus, recognize that journals aspiring to the highest standards need to form an editorial board in which at least these conditions are met: Academic reputation. Board members must be recognized in their respective fields through their experience and contributions to research. Academic reputation contributes to the journal's credibility and attracts quality authors and researchers.

Diversity of experience and knowledge of its members. A solid editorial board must have members who represent a wide range of experiences and perspectives. Diversity in terms of fields of study, academic background, and methodological approaches enrich editorial decision making and guarantee the journal's relevance for a broad audience.

Ethics and professionalism. It is fundamental for the editorial board members to be committed with rigorous ethical standards and be able to transparently address possible conflicts of interests.

Commitment and availability. Being part of an editorial board implies a significant investment of time and effort. Members must be willing to review manuscripts, participate in editorial discussions, and provide guidance to authors and reviewers. Long-term commitment is essential for the journal's success.

Review skills. Board members must have solid review skills to evaluate critically manuscripts submitted to evaluation. They must be capable of identifying methodological weaknesses, bias, errors, and limitations of works received.

With the foregoing, and from an analysis of a reciprocal relation, it is possible to establish that in the interaction between editorial board members and the journal commitments and mutual benefits are integrated (Figure 2).

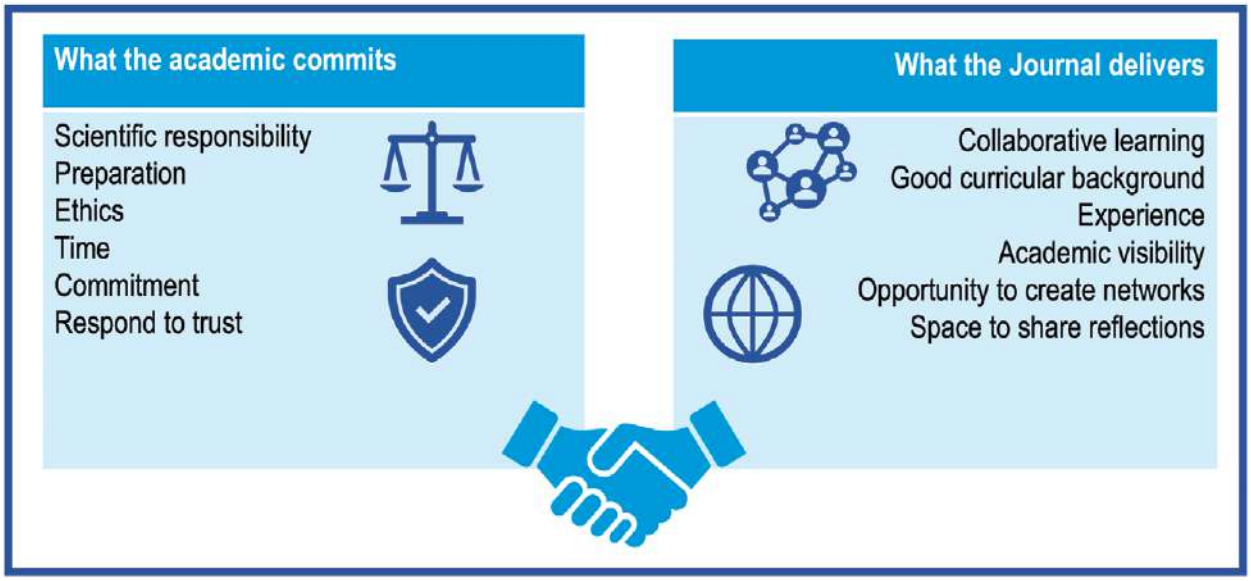

Figure 2. Reciprocal relation between the academic and the journal in the editorial board.

An interesting view is one that exposes the benefit of integrating an editorial board for the institutions in which the board member works, as well as for the institutions from which they graduated, both in terms of visibility and as an indicator of other forms of productivity. Editorial board representation provides a measure of the influence and visibility of any institution in a given discipline. In this, competing views highlight the influence, visibility and productivity of research for the institutions employing the editorial members, while others have argued that the alma mater of an editorial board member is a more stable indicator because it does not change as does occur with the labor institution.[6]

Essential tasks and commitments of the editorial board

In the combination of the elements proposed, some key reasons emerge that demonstrate the importance of an integrated operation that combines the journal's interests, as well as the interests and aspirations of the editorial board members. For this to occur, it is understood that the following operating conditions are met:

- Guarantee of quality and scientific rigor: editorial boards are responsible for evaluating the scientific quality of manuscripts. This includes verifying the methodology, results, and interpretation of the findings.
- Impartial evaluation: editorial boards must ensure that the peer review process is fair and impartial. This involves selecting appropriate reviewers and ensuring that judgments are based on academic and scientific merit, rather than personal prejudice or bias.
- Academic integrity: editorial boards play a crucial role in detecting and preventing plagiarism, duplication of publications, and other forms of scientific misconduct. Their surveillance contributes to maintaining the integrity of scientific literature.
- Support to the scientific community: upon providing constructive feedback to authors, editorial boards help researchers improve their work and contribute more meaningfully to the field. They also promote effective scientific communication.

In summary, editorial boards and their members themselves play an essential role in the scientific publication process by ensuring the quality, integrity, and relevance of articles published. Their experience and commitment with scientific excellence are fundamental for the advancement of research and knowledge in various academic disciplines. A relevant point within the current context is precisely the existence of journals that, due to different reasons and objectives, do not meet the basic standards to regulate a publication of poor or clearly invalid content. This occurs, for example, with journals that do not have sufficient technical resources, to which low-quality manuscripts are submitted, that have no international recognition, and have a limited number of editors or reviewers. In these cases, less rigorous review processes are usually adopted to complete issues of the journal in its struggle for survival.[6] The other threat is constituted by predatory journals, which are journals that only seek a profitable business at the expense of researchers attracted by the idea of publishing quickly and massively in exchange for a publication fee, but with minimal control and regulation of what is published.[7] Predatory journals already exist widely in nursing and bring along lack of transparency regarding editorial processes. Reviewers and editors of these journals contribute to the problem by lending their names to a dubious journal, sometimes ignoring that their names are being used. Due to the aforementioned, although being invited to participate as a reviewer, editorial board member or even editor can be flattering, one must make sure that it is a publication that deserves affiliation and that adds and does not take away from the curriculum.[8]

Conclusion

This article sought to capture the implications and scope of what it entails to be part of an editorial board and to give an account of the functions and tasks that, as a team, it must undertake and develop to provide guarantees of scientific credibility and the contribution that journals can and should provide to a particular academic community and to society at some level. Participating in an editorial board of a scientific journal is a significant responsibility that entails various implications for the board members and for the scientific community as a whole. This fundamental role implies a series of commitments and challenges that must be addressed with professionalism and ethics to guarantee the academic publication's quality and prestige. But it should be recognized that this task not only reaches achievements and goals for the journal, but also provides the opportunity to obtain academic benefits for the editorial board members.

Note: this article is based on the presentation: Fifteen Years in the Editorial Board: Challenges and Achievements for Joint Growth presented in the activity commemorating the journal *"Investigación y Educación en Enfermería 40 years disseminating knowledge"*, August 2023; Medellín (Colombia).

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Essay

40 Years of History of the Journal *Investigación y Educación en Enfermería.* Advancing in Knowledge*

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Forty years ago, when the journal *Investigación y Educación en Enfermería* was founded, it had the vision of being the main means of expression of the Faculty of Nursing at Universidad de Antioquia. Within this projection, from its beginnings, it sought to be the channel for the exchange of knowledge by nursing professionals in the country and in Latin America. To celebrate these anniversaries, a compilation was made of the most important information in the history of the journal, inviting us to reflect on the many achievements it has granted to our Faculty; also, recognition is given to everyone who has contributed to the journal and to the profession.

First decade

The first issue of the journal was launched in September 1983. At the time, the Editorial Board

* Article included in the celebration of the 40th anniversary of the Journal Investigación y Educación en Enfermería

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Investigación y Educación en Enfermería

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was made up of Consuelo Castrillón Agudelo, who was its first director, and by Amparo Zapata Villa, Jaime Mercado and Orlando Sáenz Zapata, who were the first participants of the Editorial Board. Dean Liria Pérez Peláez was in charge of launching the journal. The research lines proposed for the publication of articles were: epidemiology, education, health services administration, social medicine, and basic sciences. In this first edition, the journal's content was composed by four research articles, three on education, a commented publication and the dissemination of the event "Nursing Research Colloquium"; this first issue had a cost of $200 Colombian pesos. In 1984, 16 standards were regulated for article publication, and the International Standard Serial Number (ISSN) 0120-5007 was acquired, which is the international identification number assigned to periodical publications. The back cover of the second issue mentioned the journal's distribution committee made up of Beatriz Zuluaga, Constanza Forero, and Clara Sánchez. The front cover design and diagramming was carried out by publicist Mario Peláez. This year, 19 articles were published – distributed in two issues.

During the following years, under the direction of **María Consuelo Castrillón Agudelo** (1983 – 1987), the following progress was made: inventory of research conducted by nurses or with some participation in the department of Antioquia. To have a distinctive cover, color played an important role in identifying the journal and giving it a characteristic seal. From this perspective, the green journal was identified as the first issue, the fuchsia and blue journal were the following issues published in 1984, the yellow journal of 1985 focused on the health of the elderly, the publication for September 1989 was the black journal; this color was selected because it corresponded to a dark period for the University, as it was facing the murder of academics and students at the time.

Another relevant aspect during this decade was the leadership role played by **Beatriz Zuluaga Ángel** (1983 – 1990), as a member of the physical and personal distribution committee of the journal's copies. For this, contacts were established with libraries from the faculties of medicine, nutrition, and bacteriology, in addition to distributing in the Noel Clinic, the Social Security, León XIII Clinic, Hospital Universitario San Vicente de Paul University Hospital, among others. Advertising began to be sold to laboratories for financing and distribution was expanded nationwide, for which an agreement was reached with the Postal Administration to deliver to different parts of the country.

The journal's second director was **Martha Lucía Palacio Campuzano** (1985- 1988). In this period, submission to BIREME stands out, in the National Data Bank and in the National Information Center of Medical Sciences in Cuba.

Under the direction of **Silvia Orrego Sierra** (1988 – 1990), the first five years of the journal were celebrated and linked to the celebration of the 40 years of the Faculty of Nursing. In this period, a special section was made on health care during disaster situations.

From the period (1991-1992) under the direction by **Martha Lucia Toro Restrepo**; representative paintings on health were included on the cover (1991) and 19 criteria to be taken into account for the publication of scientific articles were added to the authors' instructions. In this period, use of keywords was included, allowing for easier search of topics of the articles. Advertising guidelines were expanded with Nestlé, Cisne Blanco, and Lumar. Additionally, shape changes were made to the journal's cover and the back cover in color was included as of then.

Second decade

Under the direction by **Luz Ángela Ramírez Jaramillo** (1992 – 1998) ten years of the journal were celebrated. Other challenges included: from 1996, abstracts in English of all articles; participation in the PUBLINDEX call by COLCIENCIAS (today MinCiencias) which

resulted in classification in category "A", which is why it received an important economic stimulus. For the following year, the Consulting Council was created for the first time with international expert participation; color images began to be published in the journal's articles, and the size and presentation format were also changed.

With guidance by **Amparo Zapata Villa** (1998 – 2001), it was proposed that each publication would have a specific theme for publication and together with the Editorial Board, the themes for each annual edition were defined, thus: disease prevention and health promotion (1998), nursing in Colombia and the dimension of care (1999), tribute to Virginia Henderson and Dorothea Orem (2000), health emergencies (2001), and women's health (2002). In 2000, with the tribute to theorists, the journal's format changed. In this direction, it was important to enter the digital era with the development of the first website, making it easier to read articles on the Internet.

Under the direction by **Clara Inés Giraldo Molina** (2001-2004), the journal worked on increasing the publication's scientific quality with international participation of authors, referees, and members of the Editorial Board, the foregoing led to indexing the journal in Cuiden Spain and BIREME Brazil. Also, to comply with this objective, the Authors' Instructions were expanded in detail. The last challenge for this direction was the celebration of the journal's 20 years.

Third decade

During the period of the direction by **Bertha Ligia Díez Mejía** (2004 – 2008), national and international recognition was achieved. The journal, classified by COLCIENCIAS in category "B", managed to increase to "A2". With compliance with periodicity, a pleasant and easy-to-read format, participation from a group of referees with extensive experience and recognized prestige within the profession and in the area of health, the journal began digital dissemination on the OJS platform with an important number and variety of articles from different countries. *Investigación y Educación en Enfermería* was indexed in SciELO, LILACS, Thomson Academic-OneFile, LATINDEX, DIALNET, Virtual Health Library and in the Ibero-American Council of Editors of Journals in Nursing -CIBERE-. Also, this administration decided to reduce circulation to 700 and later to 500 copies, taking into account that there was already a digital presentation, in addition to the printed one.

The direction by **María del Pilar Pastor Durango** (2008 - 2009) worked on enhancing the journal's visibility and maintaining its classification in PUBLINDEX. Progress during this period focused on systematizing processes carried out in the journal and on constructing a methodological memory of its operation that facilitates induction of new individuals. The journal transitioned in cover design towards photographs that showed different facets of nursing care. The journal's website was updated and installed on the Toné server at Universidad de Antioquia, which had manuals for its installation, configuration, administration, and interaction with authors, reviewers, and editors. The subscriber database was updated and two management systems were developed to facilitate delivery processes (subscribers) and inventory management (DBJournal). In addition, construction of a database began to update the resumes of peer reviewers and authors.

Fourth decade

The period of **María de los Ángeles Rodríguez Gázquez** as editor began prior to this decade (2009 – to date). During her management, the following advances have been made: since 2014, all articles have been published in English, which has increased reception of manuscripts from abroad, coming from four continents: America, Europe, Asia and Oceania. In 2019, after 36 years of being printed, the journal *Investigación y Educación en Enfermería* became an exclusively electronic publication. These are the challenges towards open science that have been advanced: the journal's articles are available from volume 1 number 1 to the present in open access on the

portal of journals of Universidad de Antioquia. Since 2017, all articles are identified with DOI and, as of 2020, authors' ORCIDS are shown and the declaration was added of the use of the Creative Commons BY-NC-SA license, in addition to being indexed in the Directory of Open Access Journals (DOAJ). As for indexing in high-profile bibliographic bases, this has been the itinerary: Medline-PubMed (2014), Scopus (2015), PubMed Central (2020), Emerging Sources Citation Index by Web of Science (2021), Journal Citation Report of Web of Science (2022). With regard to the latter, an impact factor of 2 was obtained, which meant that *Investigación y Educación en Enfermería* is the nursing journal with the highest impact in Latin America.

Table 1. Numbers published by year of the journal *Investigación y Educación en Enfermería*

Year	Numbers published
1983	First and only number published in the year
1984 - 2009	Two numbers per year
2010 – to date	Three numbers per year
1993 and 2008	Special issue and Supplement

Table 2. Recount of the most relevant advances in the history of the journal *Investigación y Educación en Enfermería*

Year	Relevant data
1983	Creation of the journal Creation of the Editorial Board
1984	16 guidelines in the Authors' Instructions First Director Formation of the Editorial Committee Formation of the Distribution Committee Assignment of ISSN: 0120- 5307
1985	Cover funded by ANEC
1986	Second dissemination of the event 5th Conference on Social Medicine
1987	First publicity page by "Proleche" Black cover (Persecution against the University)
1988	Submission to: BIREME, National Data Bank of Colombia and National Information Center of Medical Sciences of Cuba
1989	First opinion article published Between each article, advertising from Nestlé, Cisne Blanco, Lumar, among others, is published
1990	Change of journal's cover Back cover in color
1991	Back cover with paintings representative of health Authors' Instructions include 19 guidelines for publication

Table 2. Recount of the most relevant advances in the history of the journal *Investigación y Educación en Enfermería* (Cont.)

Year	Relevant data
1992	Authors' Instructions include 21 guidelines for publication
1993	Celebration of 10 years of the journal Authors' Instructions include 23 guidelines for publication
1994	The creation of the Master's Degree in Collective Health was publicized
1996	First article with abstract in English Authors' Instructions include 20 guidelines for publication COLCIENCIAS classified the journal in category A Journal's back cover includes figures from the Museum at Universidad de Antioquia
1997	Authors' Instructions changes to a more-detailed and descriptive format The Advisory Council was created
1998	First article published with an image in color
1999	Started using publicity in color Digital publication begun in the Web site: http://caribe.udea.edu.co
2000	Change in the journal's size and format
2001	Indications were attached for the creation of advertising guidelines Cover and back cover in color PUBLINDEX by COLCIENCIAS classified the journal in category C 1000 copies were printed
2002	First use of bar code
2003	New editorial news section Journal indexed in: Cuiden (Spain) and BIREME (Brazil) Celebration of 20 years of the journal
2004	Print run is reduced to 700 copies
2005	COLCIENCIAS classified the journal in category B Indexed in LILACS
2006	Print run is reduced to 500 copies
2007	Indexed in SciELO – Colombia Classification A2 in PUBLINDEX by COLCIENCIAS
2008	Indexed in: Thomson Academic-OneFile, LATINDEX, DIALNET, Biblioteca Virtual de la Salud (BVS) and in Consejo Iberoamericano de Editores de Revistas en Enfermería (CIBERE)
2010	Change of publication language from Spanish to English. All articles have abstracts in English, Spanish, and Portuguese Change in cover, back cover, and interior format Print run is reduced to 300 copies Periodicity increased to three numbers per year
2012	Indexed in: Directory of Open Access Journals (DOAJ),
2013	Print run is reduced to 300 copies
2014	Indexed in Medline Print run is reduced to 250 copies
2015	Indexed in Scopus and classified in quartile 3

Table 2. Recount of the most relevant advances in the history of the journal

Year	Relevant data
2016	Change in cover, back cover, and interior format Print on recycled paper
2017	All articles are identified with DOI Journal is no longer printed and since then is exclusively electronic
2018	Submitted to Web of Science
2019	Submitted to PubMed Central
2020	The Journal is indexed in: PubMed Central Authors' ORCIDs shown Declaration added of the use of the Creative Commons license
2021	Change of classification from 3rd to 2nd quartile in Scopus
2022	Indexed in Journal Citation Report by Web of Science, obtaining an impact factor of 2.0, which recognizes *Investigación y Educación en Enfermería* as the journal with the greatest impact on nursing in Latin America
2023	Celebration of the Journal's 40 years since its creation

Note: this article gathered information from the collection of articles published in the Journal since its start until 2023, and extracted essential data from these articles, specially:

Díez-Mejía BL, Castrillón-Agudelo MC, Zuluaga-Ángel B, Palacio ML, Orrego-Sierra S, Toro-Restrepo ML, Ramírez-Jaramillo LA, Zapata-Villa A, Giraldo-Molina CI. Journal *Investigación y Educación en Enfermería*. An approach to its history. Invest. Educ. Enferm. 2008; 26(Supl): 16-41.

Presentation. Invest. Educ. Enferm. 1983; 1(1):5-8.

Essay

An Exciting Stretch in the History of *Investigación y Educación en Enfermería*

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Constructing knowledge in nursing and disseminating it has always been the commitment and obsession of the Faculty of Nursing at Universidad de Antioquia, with the pledge to contribute to enriching the discipline and profession. Obsession that achieves its goal only through the rigorous, devoted, and articulate work of many people, and in the case of the journal *Investigación y Educación en Enfermería* by the authors, referees, editorial boards; style reviewers, editing consultants, illustration guides, monitors and typists, to mention only some.

As indicated by the directors who preceded me in the post, *Investigación y Educación en Enfermería* flourished during the early 1980s as a scientific publication of the Faculty, notwithstanding the difficulties derived from the recent incursion by Nursing into the scientific world of our country.

* Article included in the celebration of the 40th anniversary of the Journal *Investigación y Educación en Enfermería*

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For everybody, it is known how in Colombia this esteemed profession was considered a task dependent on and subject to medicine, even during the second half of the 20th century, when research work by nurses was starting to become visible, difficulties added to stumbles of economic nature encountered when needing to edit and publish texts with academic and scientific quality.

But, due to the tenacity of deans, directors, and editors *Investigación y Educación en Enfermería* managed not only to rise, keep with its two annual editions, and remain at a high level over time, but also stand out in the universe of the country's scientific publications. As a result of such difficult task, it was accepted in the ranking by COLCIENCIAS and in 1996, it reached category A of said demanding classification as a reward to the arduous work by the then director, my dear friend and colleague Luz Ángela Ramírez J.

Classification that, besides representing joy for the Faculty and the University, meant a challenge for those of us who assumed the Journal's direction, like keeping it in the country's index of scientific publications defined by COLCIENCIAS and known as PUBLINDEX, which for each For each call, the level of demand of the categories of the ranking increased.

In this order of ideas, it is worth noting how scientific journals, over time, went from being entities of particular dissemination of the scientific and academic production of professors from the Faculties of each publishing institution, to being publications where it was an imperative of scientific quality the international participation of authors, referees, members of advisory boards, and publishers, who, in addition, had to have an academic and scientific career demonstrated by their graduate training and by their recent articles in journals recognized in national and international contexts.

Another characteristic of PUBLINDEX consisted in that, for the most demanding categories, the number of scientific quality articles was periodically expanded, which always meant an important effort for journal directors or editors to collect, for each issue, a significant number of high-quality scientific articles, and, which – furthermore – obtained the endorsement from qualified and undoubtedly very demanding referees.

But the difficulty was established because the modification of criteria was announced at the time of the call, that is, a few days prior to submitting all the information of the publication to PUBLINDEX – and not at the beginning of the call period, two years before –making it impossible to comply with some criteria in the numbers already edited of the journals that would enter the call; inconveniences that led to disharmony among the PUBLINDEX directors and directors and editors of the University's journals and, even from other institutions in the country. This meant that it was possible that, despite the conditions of the publications in terms of the number of high scientifically demanding articles and other academic and administrative criteria, their position in the ranking would be maintained, or worse still, they would descend a level. That is, staying in a category meant having successfully improved the quality of the publication, a matter difficult to understand by those who were not direct participants in those processes.

Consequently, during this period, moments of unrest emerged among editors and directors of the University's journals, motivating the reconstitution of the Institution's Committee of Editors of Scientific Publications, which for a considerable time – over three years – had stopped meeting. This collegiate body, during 2003 and 2004, undertook the intense task of preparing a proposal to update the regulations of the Alma Mater's serial scientific publications. A regulation represented in a Rectoral Resolution draft aimed at replacing Superior Agreement 108 of September 1988, and by which the policies and regulations for the Institution's academic journals were proposed in

such a way that an updated regulatory instrument was available for the administrative management of serial publications, and to achieve greater financial and editorial support from the University.

Also worth mentioning is that the call for indexing of scientific journals, which COLCIENCIAS published every two years, appeared on its website precisely when we were approaching the vacation period and, thus, began a tortuous journey of immense suffering aimed at collecting, at any cost, information required by the Index, data mostly found in the authors of the articles, referees, and other collaborators and that we only obtained after many attempts. Thereby, the individuals working in the IEE Journal at the time, Alex Gómez, enthusiastic and committed monitor; Ana Lucía Noreña, professor assistant to the director, who focused her interest and responsibility on the objectives of the publication; and the director were the last to leave for vacation, however, with the satisfaction of having sent whatever was necessary to participate in the call again.

Despite the vicissitudes, it was a pleasant job thanks to the efforts of the entire team during the period in question; *Investigación y Educación en Enfermería* remained in the COLCIENCIAS Index, given that it obtained the ranking in 2001 and 2003. The last ranking was recognized by members of the Institution's central administration, when in 2003, as director, I was selected by the Vice-rector for Research to be a member of the "Fund Committee to support scientific journals and scientific dissemination" as advisor for the Committee for the Development of Research (CODI, for the term in Spanish) at Universidad de Antioquia. Likewise, the director for "IATREIA", the journal of the University's Faculty of Medicine requested support and accompaniment from the IEE director to position said journal in the COLCIENCIAS Index.

Now, the day-to-day life of a director included multiple activities, not necessarily simple, like receiving articles for possible publication, controlling the article's compliance with criteria, reading it, identifying and selecting referees, collaborating peers from the country and from the international scientific community. Perhaps among the most delicate tasks was the need to contact possible referees – who in line with the requirements had to be "sage" and, therefore, very busy individuals – request their collaboration in revising the article and ask them to do so within a reasonable time, all without any other remuneration than their recognition as members of the publication's group of referees; in addition to the precarious economic conditions available to manage the journal.

Likewise, permanently, as the publication's director, I had to invite personalities from the scientific world of Nursing and Health to participate, either as authors or evaluators, or as participants in the editorial and advisory boards. Also, I had to be aware of developments in the world's scientific publications, for which it was advisable to look for ways to be part of the groups and networks of editors in Nursing and Health, seeking to solidify and enhance the development of our publication.

In our journal's internationalization process, we carried out actions on several fronts, like agreements with Universidad de Alicante, Spain, and with Universidad de Guadalajara, Mexico, conceived to co-edit texts of academic interest for undergraduate and graduate training, in addition to a contract to translate research books with Sage Publishing House in the United States, as explained ahead. Participation in the meeting of directors of Ibero-American nursing journals began with support by Professor José Ramón Martínez, from Universidad de Alicante, member of our group of collaborators. Another matter of international projection that brought us joy was the recognition of *Investigación y Educación en Enfermería* among the first 10 scientific nursing publications in Latin America, given the quality of its articles.

Recreating the Journal's pages with artistic illustrations was another obstinacy conquered due to support from the University Museum embodied by the director during said period, Dr. Roberto León Ojalvo, and the curator of the visual arts section, Mauricio Hincapié, who carefully reviewed the content of each issue to guide me in the selection of possible images that could harmonize with the theme of each article and the most relevant illustration for the cover of the journal.

Particularly, being the director of *Investigación y Educación en Enfermería* meant, besides being responsible for the functions of professor and researcher in the Faculty, to assume the coordination of the Editorial Project that had begun during the direction of my colleague and friend Amparo Zapata Villa. A project created to address one of the weaknesses found in the self-evaluation process for accreditation purposes of the Faculty's Nursing Degree Program, conducted in 1998, which can be inferred from the self-evaluation report of that time that found a scarce average number of scientific publications by the faculty group, "observations not published".

In turn, one of the purposes of the celebration of twenty years of *Investigación y Educación en Enfermería*, in 2003, consisted in the edition of a special offprint of the publication with the Cumulative Index of *Investigación y Educación en Enfermería*: 1983 – 2003, which presented the information in three sections, Author Index, Title Index, and Subject Index. This work was possible due to the commitment by the then director of the Faculty's Library, Olga Inés Gómez, who together with librarian Marta Cecilia Galeno, organized and categorized the articles published from 1983 to 2003.

This beautiful task of directing a journal also brought moments of mistakes and difficulties, some salvageable through the support from the department's directives and from professors committed to nursing knowledge; others insurmountable, such as weaknesses in the motivation to subscribe to the journal by a large number of professors, or insufficient application of articles from the Journal in teaching and professional tasks, that is, due to its lack of use as an important source of learning and due to the scarce proposal of articles of their authorship for possible publication. Nevertheless, difficulties were offset by many moments of rejoicing generated by the Journal's ongoing developments and achievements.

One of the most pleasant successes for the direction of the publication was the creation of a new section in the journal, called "Encounters and Disagreements (*Encuentros y Desencuentros*) in the experience of caring", which arose as a response to the encouragement by Professor Carmen de la Cuesta and in harmony with a commitment by the Faculty, as it was, and continues to be, to strengthen "Care" as an academic object, but also from professional practice. In this sense, IEE was created to disseminate care experiences, whether they had been appropriate or, on the contrary, unwise, while in both cases it would be supported with theoretical and academic argumentation supported by professors in charge of the respective reflection according to the theme of the specialty. It was sought for professors to take advantage of this section to apply it in learning experiences about care and its significance in everyday life.

This new space had a tutor on her own initiative, Professor María Eugenia Molina, who, identified with the importance of this publication space, practically took on the task of encouraging students to dare to write care experiences that would have been significant for them. Professor Molina was in charge of the academic or ethical reflection of many of the experiences published in this section during the period of the story. Thus, *'Encuentros y Desencuentros'* became a permanent space of the journal dedicated to our disciplinary and professional ideal.

The agreement with Sage Publishing in the United States consisted in translating from English to

Spanish four qualitative research texts: "Basics of Qualitative Research, Techniques and Procedures for Developing Grounded Theory", by Anselm Strauss and Juliet Corbin; "Critical Issues in Qualitative Research Methods", by Janice M. Morse as editor; "Making Sense of Qualitative Data: Complementary Research Strategies" by Amanda Coffey and Paul Atkinson; and "Writing Up Qualitative Research", by Harry Wolcott.

Sage Publishing agreed that the translation would be conducted as long as there was an academic review of the translation by Professor Carmen de la Cuesta, an expert in qualitative research. This meant judiciously reading each of the translated texts, a task in which Professor Gloria María Franco and myself accompanied Professor Carmen, a pleasant and professionally enriching experience. The presentation or delivery of these four texts to the academic and research community had the participation of one of the authors, Harry Wolcott, who, besides accompanying us at the academic event, led a workshop on the topic of his book aimed at the University's research professors.

Being director of our journal and of the editorial project represented a marvelous adventure, because in addition to what has been reported, the demand of being in front of a computer for hours on end, allowed me to travel through virtual space and venture into different contexts and countries that offered peer publications with immeasurable promise, full of opportunities that warranted consideration in our publication. Also, this experience provided the possibility of meeting and interacting with members of the global academic and scientific nursing and health community, a group engaged in building knowledge for health care, so desired and necessary for professional practice.

The University's Department of Publications was a fundamental partner for the editorial project; several courses on writing to publish aimed at the Faculty's professors were carried out with people from the department, which had to conclude with an essay or text proposal for possible publication once writing was completed. Texts of academic interest for the Faculty were also published, along with the editing of four texts on qualitative research translated within the framework of the agreement with Sage Publishing.

Recently, I was reviewing documents of interest to nursing and particularly on the occasion of the reports of the ICN Congress held in Montreal from June 30 to July 1 of 2023, in its publication "Charter for change: Our nurses, Our future", once again the importance of nursing professionals is recognized in providing care and for the leadership they exercise in global health systems; essential personnel to achieve healthy communities, however, the invisibility of nurses is reiterated, despite progress and developments of the profession. In this regard, I believe nursing professionals continue with the challenge of making our work and professional achievements visible; among many actions, we must promote scientific publications, disseminate in an academic manner and with scientific support our teaching experiences, research and professional practice.

I do not want to end without recognizing the permanent support for the edition of the Journal by institutions and companies, which, through their advertising and during the entire period of my administration, contributed significantly to the financial part. In this sense, Tena, Anec Seccional Antioquia, Ecosesa, and Corpaúl, among others, were unwavering partners of this academic and editorial purpose.

My everlasting gratitude to all those allies and accomplices of this extraordinary academic and professional experience.

Note: the foregoing narrative is supported in the editions of the journal issues from September 2001 to March 2004.

Essay

A Great Challenge: Preserve or Improve the Classification of the Journal *Investigación y Educación en Enfermería**

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The first issue of the IEE Journal was published in September 1983 and it was the beginning of a permanent growth process for the dissemination of knowledge in Nursing, product of research, theoretical reflection, and exchange of care experiences. It was regulated by Agreement 027 of 02 August of 2005 by the Academic Council of the Faculty of Nursing at Universidad de Antioquia, which defines it as "the dissemination body, through which technical and scientific knowledge is disseminated referring to health and disease and to processes related with such, to the practice of Nursing and of other health and related disciplines. It also constitutes a channel to exchange knowledge and experiences with national and foreign disciplines of the social and health sciences".

* Article included in the celebration of the 40th anniversary of the Journal Investigación y Educación en Enfermería

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Investigación y Educación en Enfermería

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Since its creation, the Journal was directed by nurses of high professional, scientific, and personal quality; hence, assuming its direction was a great challenge: surpass or at least maintain the Journal's classification at the national level and enhancing its visibility among professionals from other countries. Dean Beatriz Helena Ospina Rave invited me to participate as the Journal's director by mid-2008 because its current director would step down to enjoy retirement. This offer filled me with pride, while it implied assuming a great responsibility to perform in a new position for me, where I had no experience. However, motivated by the director, Professor Bertha Ligia Diez Mejía and with her guidance and companionship, I assumed the challenge, in the midst of the Journal's 25th anniversary celebration.

Bearing in mind the Action Plan and the 2007-2009 Operational Plan of the Faculty of Nursing at Universidad de Antioquia, the mission of the Journal *Investigación y Educación en Enfermería*, and the strategies proposed to achieve the goals defined, progress during this period focused on systematizing the journal and constructing a methodological memory of its operation that facilitated the induction of new people. During my direction, three issues and a supplement were published, a training process for writing scientific articles that had begun with the previous director, Professor Bertha Ligia Diez, continued in which the journals began with an article that guided future authors for good writing. The intention was that articles published in each issue would respond to similar themes and that research results from different methodological approaches would be included, with the participation from authors external to the Faculty, as a recommendation by the databases of serial scientific publications.

There was a transition in the cover design that initially included works of art related to health, as a contribution by the University Museum, but later as a recommendation from members of the academic community and with the approval of the Editorial Board, photographs were included showing different facets of nursing care. Regarding the Journal's systematization, progress was made in implementing the Open Journal System, a free-use tool that facilitates editing of specialized journals from the Internet; in addition to allowing them to have a website with different aids for readers.

The journal's website was updated and installed on the University's Toné server, which had manuals for its installation, configuration, administration, and interaction with the authors, reviewers and editors. Likewise, the full text of the issues was available since 2003 and all previous issues were scanned, with some requiring revision and new scanning for entry onto the Web.

All the information in the journal was backed up manually, at least twice a week, to avoid information loss due to misuse, technical failures, or computer viruses. The database of subscribers and readers was updated and two management systems were developed to facilitate delivery of copies (subscribers) and inventory management (DBJournal). In addition, a database was constructed to update the resumes of peer reviewers and authors.

Establishing editorial management processes required much time and dedication, but it was necessary to standardize everything. This involved publishing the journal, facilitating the induction of those who arrived, and serving as permanent reference material for all who participated in the processes of editing, publishing, distributing, and inclusion in different databases of each journal issue, as well as coordinating with other departments of the Faculty of Nursing and Universidad de Antioquia, in addition to those responsible for each process.

The Journal was already indexed in the SciELO, LILACS, PUBLINDEX, Oceano and AcademicONFILE databases. During my period as journal Director, all information requested up to volume 27, number 1 of March 2009 was delivered for the verification process for inclusion of the Journal in the Redalyc database. Regarding the CINAHL database, the data was not updated because this required subscription payment by the University, but at the time it was not valid.

For the Journal's classification in PUBLINDEX to continue in force or increase in category, the information was updated according to the requirements by COLCIENCIAS (today Ministry of Science, Technology, and Innovation), immediately after publishing each number of the journal. However, during the short time I remained as director, I did not receive a new classification.

Marketing continued by promoting the journal in events scheduled by the Faculty, ANEC, ACOFAEN, and other associations and health institutions in which professors or students participated, and who fulfilled the role of volunteer promoters of the journal, encouraging subscription, sale or donation of some numbers from the journal and who supported the updating of the inventory. The journal was also promoted and article writing was encouraged during the induction of new students to the Faculty of Nursing at undergraduate and graduate levels, and in different research seminars.

The IEE Journal, during my period as director, had contributions and determined support from many people and to whom I express my eternal gratitude. The time I spent at the journal was full of valuable lessons, of new experiences, and much commitment to ensure that the journal had greater international visibility and more agility in the review and publication of good scientific articles; however, life had prepared new experiences and great challenges for me that I had to assume as professional and citizen commitment.