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–Nursing Research and Education–

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2020: Año Internacional de la Enfermería

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Facultad de Enfermería

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Contents

Editorial

How COVID-19 has Been Transforming the Notion of Care

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The year 2020 surprised us with COVID-19, which expanded throughout Asia and Europe and became a pandemic, reaching Latin America and our cities and everything seemed to change, including the most intimate and private relationships of social life in general, with repercussions in the human condition that lead to thinking about its setbacks. For the population not expert in epidemiology, it results quite difficult to understand what is happening and know what to do and how to assimilate discourses that break into the private sphere and – at the same time – amalgamate with social, environmental, economic, political, and other problems that even lead epidemiologists themselves to new reflections they thought already overcome. But also, within this context positive issues are unveiled, like solidarity, reflecting on consumerism, and caring for nature.

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We are told: life is most important and that is how we have assumed it from the confinement, although sometimes we are assailed by the question of whether we are reducing life to a survival detached from human dignity, wellbeing, safety, peacefulness, feelings, and emotions. The only thing that is undeniable is recognizing that today we live an unthinkable reality, which threatens with the loss of human beings under conditions of an explicit incapacity of health services to provide the necessary care; ecological, economic deterioration is exacerbated, affecting relationships and exchange among countries and among people and revealing, not because of this virus, but as effects of a crisis of the economic-political system in its distinct dimensions, the rawness of profound social debts expressed as inequities, unemployment, hunger, corruption, and intra-family violence among many other problematics.

Within this framework, theories on health and disease, as biological-psychological-social process, become increasingly more necessary to bring us closer to understanding the effects of this pandemic beyond statistical and numerical readings, such as the need to flatten "the epidemiological curve", given that although time is gained to equip the health services and to make political and health decisions, the virus continues and its effects will possibly continue for much more time with consequences not only on health, as morbidity/mortality-centric fact, but as human and social relations constructed on a long-lasting process.

Probably, this health crisis indicates the need to delve further into understanding the relationship among the biological, individual, social, and the health policy, as well as to delve into the analysis of the same health-disease concept as human vital process. Likewise, with the pandemic, there is no mechanical opportunity in sight to make political, economic, social, or personal changes. That is only possible if transformations are adopted in the micro and in the macro, in the general and in the particular, in the individual and the social. This is the framework in which the present reflection is inscribed, which – within the scenario of academic life – inquires on the changes suggested by the current situation on caring: object of the nursing profession.

Currently, health takes on an unusual sense, it is the subject of debates in different spheres despite the setbacks that exist in a privatized health system like ours and regulated by market laws. Day by day, care is a slogan proclaimed by civil and military authorities, the media, and civil society, pointing out that we all have to take responsibility to avoid contagion, through hand washing and social isolation and in regard to this general matter, the responsibility for the maintenance of life is placed in upon everyone; this task is the most decisive action of daily life today, it is a type of self-care to care for oneself and care for others (in our case, fundamentally those over 70 years of age).

Within this framework, health care becomes a fundamental issue and I consider that nursing has much to contribute to highlight it as a matter of life involved with the rights of people, with the cross-section between scientific knowledge, culture and the subjectivity of patients, families, and communities. As an object of training and practice of nursing, care does not concentrate merely on making and displaying knowledge or technical skills, but rather establishing connections, bonds, a dialogical, reciprocal condition, committed to caring for others and offering alternatives for physical well-being, autonomy, self-knowledge, and the capacity for self-care.

More than an isolated action, nursing care is a living act, an essential process in the profession, given that, as stated by authors, like Salazar,[1] Malváez and Castrillón,[2] it requires not only human-human transactions, but also their own knowledge, dedication, values, and the recognition that it is a personal, ethical, and moral relationship between the person receiving care and who offers it. As proposed by Collière,[3] based on respect for people and humanity, care is concretized in the mobilization of vital resources to help live, promote life and this definition reaffirms the value

of professional care that as inter-relational activity seeks to recover and maintain closeness with sick and healthy people, with families and communities through direct and comprehensive care.

In no way does what happens today in society with care assigned to individual and family responsibility within the homes replace or minimize professional nursing care; on the contrary, it revalues it and indicates that during and after this pandemic these professionals will play a fundamental role to make care more meaningful and, thereby, the need to enhance the relationship with citizens perhaps more disciplined and trained in asepsis, but more in need of comprehensive care that takes into account the biological, psychological, and social in which emerge learning and adverse effects of a social change as abrupt as the one we are experiencing.

Loving and rigorous and politically fair and inclusive health care is precisely what is revealed as lacking under a social system anchored in market values. This is a call to nursing professionals and students to envision future particularities of health care that in some cases is postponed to other times because the central demands of the current situation of COVID-19 so require it. Thus, is the case of caring for patients with chronic diseases, care responses to the deterioration of mental health among other situations. Similarly, it is fitting to recover creative and positive actions that, amid the contingency, populations have built what calls for strengthening a dialogue of knowledge and practices of popular and professional care. In the same manner, it is also necessary to reflect about the limitations this crisis supposes on health promotion actions and on life within the framework of comprehensive care.

Another key problem nursing researchers, such as De la Cuesta[4] and Aiken *et al.*,[5] had highlighted during non-pandemic times, which is currently gaining strength in conditions of social isolation, is the challenge of providing professional nursing care closely related to the informal care carried out at home or in some institutions for the protection of the elderly. For these researchers, it is worrying to observe that a large part of health care occurs in the private sphere and that the family is increasingly protagonist as a caregiver at home and on occasions more and more frequent in hospital institutions; naturally, it is assumed by nursing professionals and health institutions that nursing care be frequently left in the hands of untrained family caregivers. Said situation impacts upon patients' companions who assume as workers an important part of the care under conditions of loneliness, lack of knowledge, technical and human difficulties, as well as fear of being wrong or concern about not knowing how to do what is correct, which translates into conditions of risk for the safety of patients and their companions.

Concern for the participation of the patient's family or companions during the care process when they lack resources, knowledge, and skills, as strategy to complement professional resources in health services, is taken as an indicator of poor quality in nursing care and as a risk to patients. This situation sometimes responds the need to make up for staff cuts in hospital institutions and translates into work overload for nursing professionals.

Amid the uncertainty and chaos of the pandemic, the current condition suggests in the health field and specifically in nursing to meet the broad notions of care proposed by authors, like Boff[6] who proposes that "Caring is more than an act, it is an attitude; therefore, it covers more than a moment of attention, of zeal and concern, it represents an attitude of occupation, responsibility and affective commitment with the other. Attitude is a source, which generates many acts and expresses the underlying attitude".

In fruitful dialogue among different types and sources of care for life, professional care has an opportunity and a responsibility to contribute to confronting a complex and contradictory context of great possibilities for well-being, coexistence, and of limited scope, which radiate to all in conditions of

equity, rights, capacities, and potentialities. [7] In this sense, the proposal is an approach to the category of care based on empathy and compassion, from a broad field that permits identifying particularities and connection points with nursing care defined as object of the profession.

According to Carrasco, Borderías and Torns,[8] the concern for understanding care in societies is a task that increasingly gains more importance and which requires interdisciplinary approaches. In the health field, there has always been a multiplicity of care, in response to the way of understanding the causes and effects of problems that affect the body, the psyche, or the development considered "normal" in groups or individuals. These cares include popular knowledge, family care, and other social practices aimed at maintaining or restoring the health of people and of the planet. Likewise, nursing care, which also had its origin in the domestic sphere, under the responsibility of women and which, only from modern nursing, is considered the profession par excellence aimed at offering health care to people, families, and groups.

Although the daily, popular and informal care, and nursing professionals are supported by sources of different origin, they are fields that – in practice – overlap and sometimes bear tension or complementary relationships. As tension, on some occasions, popular care is unknown or confronted from the professional side and, when recognized as a complement, they are alternatives of dialogical, interdisciplinary practices and a possibility to broaden the field of the nursing profession and enhance their practice as educators beyond their own students, toward informal caregivers and those being cared for. Thus, it is expected that the current situation on which this reflection is centered, permits nursing professionals to continue with theoretical and practical elaborations about the humanization of care, which evidence the positive aspects reached in the relationship of nursing care and care at home that this contingency is assigning as individual, family, and social responsibilities.

Likewise, it is an invitation to those in the formation process in this discipline to reflect on the challenges the social and health reality supposes on the professional formation with new experiences and new questions. It is necessary to document at this time the particularities of health care in the institutional and in the community, barriers to communication and interaction in some scenarios, like the rural, and even in the academic among professors and between these and students. Likewise, it is necessary to generate proposals that from the global and local (glocal) seek international health agreements that overcome market barriers and privilege the human condition.

Finally, the need is identified for professionals and students to recognize each other as actors in caring, public health, of collectives, and in education for health and to reflect on caring for nurses, a matter that is materialized under working conditions, biosafety, recognition, protection, and guarantee of rights as citizens and as health workers.

Note. This article was first published on 29 April 2020 in the Opinion column in Portal Universitario of Universidad de Antioquia. Available on-line at: https://bit.ly/3drqxk0.

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Editorial

Nursing during Times of Pandemic: from Courage on the Front Line to Heroic Courage in Banksy's Mural

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On 12 May 2020, the world commemorated the bicentennial of the birth of Florence Nightingale, and to date, multiple publications in press media, social networks, and journal articles have related her biography and accounted for her contribution and legacy, not only to nursing, but to public health. It is precisely within this context of health contingency due to the COVID-19 pandemic that the relevance of Nightingale gains greater sense on aspects as simple, but as necessary, like handwashing and measures of basic health.

This year, additionally, the World Health Organization designated it as the *Year of Nursing and Midwifery*[(1)] and in parallel published in April the report on the State of Nursing in the World, 2020,[(2)] highlighting its fundamental role as part of the teams integrated to reach universal health coverage and other national and

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global health objectives. The report highlights that nurse's number approximately 28 million, which represents nearly 59% of the labor force of health professionals, with such being the most-numerous group. However, there are still sectors and settings in which an important gap of these professionals still persists to cover efficiently the demands of the population.

Although all the aforementioned already highlights the work and role of Nursing throughout the world, it is undoubtedly this unique moment in which the international community transversally has had the opportunity to understand more broadly what health professionals mean, and specially, nurses. But nursing during pandemics already has registries, which, although at the time did not show the actions and importance of nursing, retrospectively, its value has been verified. Thus, for example, during the 1918 influenza pandemic, nurses in New York provided care to thousands of patients with minimum federal support, but working in coordination with local community agencies to establish improvised hospitals and respond to the high demand for care.[3] Most recently, during the 2009 influenza A (H1N1) pandemic, the high compromise was again found to comply with the task of care, estimating that over 90% of nurses manifested the intention of working during the pandemic and that, as it is logical to think, there was a significantly higher probability of working if they were provided with adequate personal protection equipment (PPE). In contrast, nearly 7% reported that they would not be willing to work during a flu pandemic, independent of incentives or other factors. This demonstrated that to maintain an adequate nursing labor force during a pandemic, it must be ensured that policies and procedures include providing PPE and safeguarding the health of nurses and their families.[4]

On the one hundredth anniversary of the severe 1918 influenza pandemic, it was found that governments and health care systems from different countries are still inadequately prepared to face a health crisis of this magnitude and noted the need to implement coordinated intergovernmental tools and activities to improve the overall basic capacity to respond to global health threats.[5] It is precisely thus, how by late 2019 began one of the most complex pandemics known and which maintains global states and distinct government sectors concentrated on trying to control or mitigate the devastating effects of this pandemic.

At the date of publication of this editorial, Latin American countries will probably be suffering the most critical moments of the COVID-19 pandemic in which besides the health crisis, will highlight the inequality that has become evident in different countries globally and which are affecting public health and social wellbeing. As in other settings, this pandemic has changed all action axes of nursing, from the managerial role of nurses leading clinical teams, to health professionals, and those from academia, affecting nurses and nursing professors and researchers.

Under these conditions, health teams and nursing professionals are forming a first line in the units of critically ill patients, dealing with shortage of supplies and basic devices for care, including PPE. Many have undergone a reassignment of duties, have assumed new tasks, and have needed to modify their work systems by increasing the work load. In this regard, in situ evaluations of recent experiences have highlighted the need for clinical mobility as a way to increase the experience and improve skills and copacities within multidisciplinary teams that even permit a broader vision of the clinical and organizational panorama. Moreover, reducing the psychological impact in case of sudden reassignment to a different clinical environment.[6] However, independent of the greater or lesser experience, nursing professionals today confront not very encouraging results and evolution of patients and are witnesses to dilemmatic situations that become more frequent, generating distress within the teams.

In parallel, in a first line at community level, nurses face complex social and economic realities that prevent the population from adequately

adopting contagion prevention and disease dissemination measures. This scenario exposes them, additionally, to the frustration and emotional involvement of the nursing contingent upon confirming the impossibility of helping people to recover or maintain optimal health.

Regarding training contexts, the pandemic has limited classroom teaching and delayed clinical practices. Recommendations, and even requirements for quarantines and home confinement to ensure physical distancing have forced adopting a telework modality based on remote virtual teaching. This is where the question about whether universities have been sufficiently prepared to face these events is renewed and if they can effectively continue the teaching and education mission in a remote environment, far from the traditional campuses.[7] University work has moved to the homes and faces professors and students with new technology to at least develop the theoretical components of the study programs. [8] For its part, research has come to a halt, given the impossibility of carrying out field work and persist or have begun studies based on surveys on line or through telephone calls.

Paradoxically, everything negative and complex brought about by the coronavirus pandemic and which keeps Nursing at the limits of its capabilities and response contrasts with a resilient competency without reference, commitment, dedication, and effort that has led the members of the nursing staff to keep working, distancing themselves even from their own relatives and loved ones.

With no desire to be less rigorous and still less to fall into professional complacency, I consider that there may be few qualifiers that describe the crucial task of Nursing within the health teams, as guarantors of oportune, safe, ethical and compassionate care. Today, it has been demonstrated that all the demands to shorten the gaps and provide an adequate standard of nurses for the distinct global care contexts are but the minimum requirements for communities to receive care and quality care.

This 2020 will be remembered for a new pandemic, and probably there will be little celebration in this special year for Nursing. But six days from the bicentennial of Nightingale's birth, Banksy, the renowned anonymous artist left behind a remarkable piece titled Game Changer, with the message "Thanks for all you're doing. I hope this brightens up the place a bit, even if its only black and white."[9] This artwork of art with profound and emotional sense of appreciation and gratitude to the health teams, taking the innocence of a child as its center, it has forever exalted nurses, and nursing itself, with the heroic courage with which it has confronted and will continue to confront situations, such as the current pandemic.

Source: Banksy's painting for the Southampton General Hospital called Game Changer.[10]

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Burnout and its influencing factors between frontline nurses and nurses from other wards during the outbreak of Coronavirus Disease -COVID-19- in Iran

Original article

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Burnout and its influencing factors between frontline nurses and nurses from other wards during the outbreak of Coronavirus Disease -COVID-19- in Iran

Abstract

Objective. To assess burnout level during an outbreak of COVID-19 and to identify influencing factors between frontline nurses and nurses from other wards. **Methods.** This cross-sectional study makes comparison between two groups of nurses including frontline (exposure group) and other nurses working in usual wards (non-exposure group) in Torbat Heydariyeh city, Iran. Oldenburg Burnout Inventory (OLBI), Job stress questionnaire (JSQ), and questionnaires of hospital resources, family support, and measuring the fear of COVID-19 were used as research instruments. **Results.** The scores of job stress and burnout in the exposure group with COVID-19 infection were significantly higher than in the non-exposure group (p=0.006 and p=0.002, respectively). Although, in univariate linear regression, employment status (p=0.047), experience in taking care of patient confirmed

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or suspected with COVID-19 infection (p=0.006), hospital resources (p=0.047), and job stress (p<0.001) were considered as significant risk factors for COVID-19-related burnout. In multivariate regression analysis, job stress (p=0.031, β=0.308) was considered as an only factor that has a significant relationship with COVID-19-related burnout. **Conclusion.** The burnout level in frontline nurses was higher than other nurses, the most important influencing factor was the job stress. Regarding to negative effects of burnout on both physical and mental health nurses, it is suggested that a strong strategy be considered to reduce nurses' burnout to be able to control ongoing and future outbreaks successfully.

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

Burnout y sus factores influyentes entre enfermeras de primera línea y enfermeras de otras salas durante el brote de la enfermedad por coronavirus -COVID-19- en Irán

Resumen

Objetivo. Evaluar el nivel de burnout durante un brote de COVID-19 e identificar sus factores influyentes entre las enfermeras de primera línea y enfermeras de otras salas. **Métodos.** Este estudio transversal hace una comparación entre dos grupos de enfermeras: las de primera línea (grupo de exposición) y otras que trabajan en las salas habituales (grupo sin exposición) en la ciudad de Torbat Heydariyeh, Irán. El Inventario de Burnout de Oldenburg (OLBI), el cuestionario de estrés laboral (JSQ) y los cuestionarios de recursos hospitalarios, apoyo familiar y medición del miedo a COVID-19 se utilizaron para recolectar la información de la investigación. **Resultados.** Las puntuaciones de estrés laboral y burnout en el grupo de exposición con infección por COVID-19 fueron significativamente más altas que en el grupo sin exposición (p=0006 y p=0.002, respectivamente). Aunque el análisis de regresión univariante, el estado de empleo (p=0.047), la experiencia en el cuidado de pacientes confirmados o sospechosos de infección por COVID-19 (p=0.006), los recursos hospitalarios (p=0.047) y el estrés laboral (p<0.001) se consideraron factores de riesgo significativos para el burnout relacionado con COVID-19; en el análisis de regresión multivariante, el estrés laboral (p=0.031, β=0.308) se consideró como un único factor que tiene una relación significativa con el agotamiento relacionado con COVID-19. **Conclusión.** El nivel de agotamiento en las enfermeras de primera línea fue más alto que en el resto; el factor

que más influye fue estrés laboral. Con respecto a los efectos negativos del burnout en su salud física y mental se sugiere considerar estrategias sólidas para reducirlo y poder controlar con éxito los brotes en curso y futuros.

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

Burnout e seus fatores de influência entre enfermeiros de linha de frente e enfermeiros de outras enfermarias durante o surto de doença por coronavírus -COVID-19- no Irã

Resumo

Objetivo. Avaliar o nível de burnout durante um surto de COVID-19 e identificar seus fatores que influenciam entre enfermeiros de primeira linha e enfermeiros de outras enfermarias. **Métodos.** Este estudo transversal compara dois grupos de enfermeiros: os da linha de frente (grupo de exposição) e outros que trabalham nas enfermarias habituais (grupo sem exposição) na cidade de Torbat Heydariyeh, Irã. Os questionários Inventário de Burnout de Oldenburg (OLBI), Job Stress Questionnaire (JSQ), Recursos Hospitalares, Apoio à Família e Medo de COVID-19 foram utilizados para coletar as informações da pesquisa. **Resultados.** Os escores de estresse no trabalho e burnout no grupo de exposição á infecção por COVID-19 foram significativamente maiores do que no grupo sem exposição (p=0.006 e p=0,002, respectivamente). Apesar da análise de regressão univariada do status de emprego (p=0.047), experiência no atendimento a pacientes confirmados ou suspeitos de infecção por COVID-19 (p=0.006), recursos hospitalares (p=0.047) e estresse no trabalho (p<0.001) foram considerados fatores de risco significativos para burnout relacionados ao COVID-19. Na análise de regressão multivariada, o estresse no trabalho (p=0.031, β=0.308) foi considerado um fator único que possui uma relação significativa com a exaustão relacionada ao COVID-19. **Conclusão.** O nível de exaustão nos enfermeiros de primeira linha foi maior que nos demais enfermeiros, o fator que mais influenciou foi o estresse no trabalho. Em relação aos efeitos negativos do burnout na saúde física e mental dos enfermeiros, sugere-se considerar estratégias sólidas para reduzi-lo e controlar com sucesso surtos no presente e no futuro.

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

Introduction

The first known death from pneumonia caused by the virus named COVID-19 as a coronavirus family was reported in Wuhan, China, in December 2019.[1] In comparison with two other types of coronaviruses such as MERS and SARS, the present new coronavirus is spreading more quickly and has higher contagiousness, resulting pandemic that lead to international major health issue.[2] Due to the nature of new virus which is highly sensitive to mutation, there is no vaccine and specific antiviral treatment.[3] On the other hand, based on World Health Organization (WHO) report, generally, coronavirus are not only very stable at low and freezing temperature for a certain period, but also can persist on different surfaces for long time depending on temperature, humidity and light condition lead to global threats.[4]

According to currently available information, older adults and people of any age who have serious underlying medical condition are at a higher risk of more serious COVID-19 illness and death.[1] Regarding the possible transmission modes of COVID-19 such as droplet and contact spread, considering both the preventive health plans (e.g. Society distancing, wearing the mask in public and frequent hand washing, etc.) and well-prepared hospitals are as essential factors in the event of pandemic.[5] From another point of view, healthcare workers especially frontline medical workers are faced with hectic, unpredictable events and urgent situation made them so frustrated especially when they have to face with unknown disease such as COVID-19 that cause work-related stress overtime.[6] Excessive workloads, lack of enough time for recovery and inadequate hospital facilities, on the other hand, are as important factors that put them under persistent pressure and result in job dissatisfaction and sometimes effect on the quality of patient care that leads to burnout gradually.[7]

Job burnout is a syndrome resulting from chronic work-related stress, with symptoms characterized by emotional exhaustion including negative self-concept and inappropriate work attitude lead to lower productivity, impaired quality of work and a reduced interest in patients.[8] Due to the nature of nursing work experienced heavy workload, working long hours, night shifts and risk of exposure with infectious disease, the most studies on burnout were focused on nurses that sometimes remain as significant concerns, affecting not only work office but also individual life and sometimes can lead to increased risk of developing mental and physical health problems.[9] Since an outbreak of COVID-19 as an unknown disease that causes severe respiratory infectious disease and similar experience on SARS and MERS, nursing managers need to pay more attention to frontline nurses' burnout in association with their experiences of a nationwide MERS and SARS outbreak to be able to manage the conditions.[10] Thus, the aim of the present study is to assess and compared

burnout level between frontline nurses and other nurses during an outbreak of COVID-19 and to identify influencing factors in order to provide basic information for lowering and preventing the level of burnout.

Methodology

Study Participants and Setting

This cross-sectional study was conducted to determine the factors influencing on frontline nurses' burnout as an exposure group with experience in taking care of patients confirmed or suspected with COVID-19 infection in comparison to other nurses as non-exposure group in Torbat Heydariyeh city, Iran. Regards to our university decision to consider one hospital as a reception center and care for COVID-19 patients, the available nurses were estimated 266. So, 245 numbers of participants considering the inclusion and exclusion criteria were entered into the study (response rate 92%). According to hospital policies, frontline nurses as an exposure group have to work 12 hour-rotating shifts for one week and have a week off, while other nurses as a non-exposure group entered in the study have the same working condition as before. Moreover, all frontline nurses have to use personal protective equipment (PPE). Inclusion criteria in the study were all nurses working in target hospital, and exclusion criteria were lack of willingness to participate in the study and pregnant participants. Data were collected from March 10 to April 3, 2020 during the outbreak of COVID-19 in our city.

Ethics Approval

This study was approved by the ethics committee of Torbat Heydariyeh University of Medical Sciences. All participants fulfilled the informed written consent.

Measuring tools

Regards to literature review, we considered six essential components including burnout questionnaire and 5 various items as influencing factors on burnout such as hospital resources, family support, occupational stress, demographic information, and measuring the fear of COVID-19. The Persian version of burnout and job stress questionnaires was used in this study. The questionnaires of hospital resources, family support, and measuring the fear of COVID-19 translated into Persian language and the content validity of the measurement tools were assessed by 3 nursing specialists. The developed tools were also translated into Persian and then translated back into English. To analyze its validity, Small-case study with 30 healthcare workers was conducted before starting the main trial.

The Oldenburg Burnout Inventory (OLBI) developed by Demerouti *et al*. was used in the present study to measure burnout,[11] which consists of 16 items; eight of questions are about emotional exhaustion and job dissatisfaction. The scale ranges from 1 (strongly disagree) to 5 (strongly agree) that high score means high level of burnout. In fact, The Oldenburg Burnout Inventory (OLBI) has a high validity and reliability and It has been translated into several different languages around the world.[12] The psychometric characteristics of the Persian version of the OLBI were confirmed by Larki *et al*. through confirmatory factor analysis and estimation of internal consistency coefficients. Also Larki *et al*. declared 0.77 Cronbach's alpha coefficient.[13]

Job Stress Questionnaire (JSQ) developed by Parker and Decotiis was first used to determine the cause of organizational stress.[14] The JSQ is considered to assess the anxiety stress and time stress. This scale consists of 12 items scored on a 5-point scale ranging from one extreme to other (strongly disagree to strongly agree), with these categories scored from one to five. A high score

means a high level of stress. Parker and Decotiis[14] reported the reliability of the two dimensions of this scale using Cronbach's alpha for the time pressure dimension of 0.86 and for the job-related anxiety dimension 0.74. In the study of Iraji and Sohrabi,[15] the reliability coefficients of the questionnaire were obtained using Cronbach's alpha coefficient for time pressure of 0.83, for anxiety dimension 0.82, and its overall reliability and validity coefficient as 0.90 and 0.68, respectively. The scales to measure the hospital resource and family support level were used based on previous studies.[16,17] The scales for hospital resources including three items was ranged from 1(strongly disagree) to 4 (strongly agree) which means the more satisfaction of hospital resources for the treatment of COVID-19 lead to the higher score. According to Kim *et al*. study the Cronbach's α was considered 0.81. In our study, Content validity index was 0.78.

Family and friend supports scale including four items was ranged from 1 (strongly disagree) to 4 (strongly agree) with a high score meaning high support.[10,18] Cronbach's α of the scale in previous study was done by Kim *et al*. was 0.80. In our study, Content validity index was 0.75. Eventually, the last item as an influencing factor was measuring the fear of COVID-19 taking from previous study as mentioned before. It was a ten-point question, with higher score reflecting the greater fear of COVID-19 infection.[17]

Statistical analysis

Data analysis were done using SPSS version 21. Quantitative variables were stated as mean ± standard deviation/SD and categorical variables summed-up as number (percentage). The socio-demographic characteristics of participants between the two groups were assessed and compared using the chi-square test and Fishers exact test. The independent sample t-test was used for non-categorical variables (age, work experience, and characteristics of work-related variables). Univariate logistic regression was performed to determine the influencing factors for COVID-19-related burnout. Significant variables were selected for multiple regression analysis to further explore this association. Inferences was based on β and *p*-values; in all analyses, level of significance was defined $p<0.05$.

Results

Of all the 245 participants, 151 (61.63%) were included in exposure group to COVID-19 infection and 94 (38.37%) in non-exposure group to COVID-19 infection. The mean age of participants in exposure and non-exposure group were 31.9 (range 23-54) and 31.6 (range 22-54) years old respectively. The mean work experience of subjects in the exposure and non-exposure groups were 6.93±5.69 (1-25) and 6.25±6.24 (1-29) years, respectively. The demographic characteristics including age, gender, marital status, work experience, qualification, and history of underlying disease were similar between the two groups (Table 1). Statistically, significant differences were just found between the two groups for the following characteristic: the employment status of individuals ($p<0.001$). Actually, based on statistical analysis, the exposure group had bachelor degrees ($n=125$, 82.8% vs. $n=73$, 77.7%) more often than the non-exposure group; while they had lower associate's degree ($n=26$, 17.2% vs. $n=21$, 22.3%) in comparison with the non-exposure group.

In terms of employment statue, the percentage of participants with contracted and corporate recruitment were ($n=54$, 35.8%), ($n=45$, 29.8%) respectively and higher than non-exposure group ($n=10$, 10.6% vs. $n=25$, 26.6). On the other hands, the percentage of participants with official recruitment ($n=17$, 11.3% vs. $n=29$, 30.9%) and temporary job ($n=35$, 23.2% vs. $n=30$, 31.9%) was lower in the exposure group in compared with the non-exposure group (Table 1).

Table 1. Socio-demographic characteristics of the respondents by group

Variable	Exposure to COVID-19 (n=151)	Non-exposure to COVID-19 (n=94)	t or X^2	p-value
Age in years; Mean±SD	31.9± 6.5	31.6 ±7.4	-0.458	0.647
Gender; n (%)			0.960	0.327
Male	82 (54.3)	45 (52.1)		
Female	69 (45.7)	49 (47.9)		
Marital Status; n (%)			2.230	0.135
Single	47 (31.1)	21 (22.3)		
Married	104 (68.9)	73 (77.7)		
Work experience in years; Mean±SD	6.93±5.7	6.25±6.2	-0.864	0.388
Qualification; n (%)			0.980	0.322
Associate's degree	26 (17.2)	21 (22.3)		
Bachelor	125 (82.8)	73 (77.7)		
Employment status; n (%)			27.718	<0.001
Temporary	35 (23.2)	30 (31.9)		
Corporate	45 (29.8)	25 (26.6)		
Contracted	54 (35.8)	10 (10.6)		
Official	17 (11.3)	29 (30.9)		
History of underlying disease; n (%)	15 (9.9)	17 (18.1)	3.390	0.066
History of hospitalization; n (%)	27 (17.9)	21 (22.3)	0.731	0.392

The characteristics of work-related variables in the two groups with experience for taking care of patients confirmed or suspected with COVID-19-Infection and lack of experience are shown in Table 2. The total mean score of family and friends support was 2.63 out of 5 [2.60 (n=151) in the exposure group and 2.68 (n=94) in non-exposure group], the total mean score for hospital resources for treatment was 2.08 out of 5 (2.04 vs. 2.14), COVID-19 related job stress was 3.07 out of 5 (3.22 vs. 2.85) and the fear of COVID-19 as a 10-point question was also assessed and the mean score was 6.08 out of 10 (6.29 vs. 5.75). The mean value of COVID-19-related burnout scores for both groups was 2.57 out of 5 [2.61±0.27 (n=151) in exposure group and 2.51±0.23 (n=94) in non-exposure group]. As a result, statistically, job stress and burnout were the variables that makes the significant difference in comparison with other variables (p=0.006 and p=0.002); whereas there were no significant differences between the variables such as fear of COVID-19 infection, hospital resources, and family support in the two groups.

Table 2. Comparing the characteristics of work-related variables in the two groups

Variable	Exposure to COVID-19 (n=151)	Non-exposure to COVID-19 (n=94)	t	p-value
Support from family and friends	2.6±0.4	2.7±0.4	1.57	0.117
Hospital resources for treatment of COVID-19	2.0±0.6	2.1±0.6	1.28	0.202
Fear of COVID-19 infection	6.3±2.9	5.7±2.7	-1.44	0.150
COVID-19 related job stress	3.2±0.9	2.8±0.7	-3.20	0.002
COVID-19 related burnout	2.6±0.2	2.5±0.2	-2.86	0.006

In this study, univariate and multivariate linear regression analyses were conducted. Summary of variables associated with influencing factors for COVID-19-related burnout in 245 participants are described in Table 3. To summarize, employment type (p=0.047), experience in taking care of patients with COVID-19 infection (p=0.006), hospital resources (p=0.047), and job stress (p<0.001) were considered as significant risk factors for COVID-19-related burnout in univariate analysis. Furthermore, we found that COVID-19 related job stress (p=0.0314, β=0.308) is also significant variable in the multivariate regression analysis.

Table3. Analysis of variables associated with influencing factors for COVID-19- related burnout

Variables	Univariate analysis		Multivariate analysis	
	Beta (95% CI)	p-value	Beta	p-value
Age	0.020 (-0.004-0.006)	0.752		
Gender	0.043 (-0.045-0.090)	0.506		
Marital status	0.056 (-0.042-0.108)	0.386		
Work experience	0.033 (-0.004-0.007)	0.608		
Qualification	0.032 (-0.096-0.159)	0.623		
Employment type	0.128 (0.00-0.034)	0.047	0.087	0.152
History of underlying disease	0.007 (-0.094-0.105)	0.914		
History of hospitalization	-0.026 (-0.102-0.067)	0.686		
Experience in caring for COVID-19 infection	0.175 (0.027-0.164)	0.006	0.113	0.067
Support from family & friends	0.028 (-0.065-0.102)	0.668		
Hospital resources for treatment of COVID-19	-0.128 (-0.001-1.00)	0.047	-0.052	0.402
Fear of COVID-19 infection	0.098 (-0.003-0.021)	0.128		
COVID-19 related job stress	0.350 (0.068-0.138)	<0.001	0.308	<0.001

Discussion

Health care workers, especially nurses, are among those who are directly exposed to patient diagnosed with various and sometimes unknown disease cause stress and emotional exhaustion lead to burnout gradually. Regards to new studies demonstrated the pivotal role of nurses in infection prevention, infection control, and public health.[19] So, considering physical and mental health are of particular importance and identifying the source of stress in order to improve the situation and reducing job risks. The main goal of the present study was to assess and compare burnout and its influencing factors such as hospital resources, family support, job stress, demographic characteristics and measuring the fear of COVID-19 between frontline nurses taking care of patients confirmed or suspected with COVID-19 infection and other nurses working in usual wards.

Based on statistical results, demographic characteristics including age, gender, marital status, and work experience were the same in both groups, also variables of hospital resource, family support, and fear of COVID-19 didn't show a significant difference between two groups of exposure and non-exposure group; while job stress and burnout level in exposure group were higher than non-exposure group. Nurses who were tasked caring for patients with coronavirus infection, had long work shifts; while other nurses had three-shift system. Actually, long work shifts [20,21] and emotional stress such as away from family.[22] May be one reason for higher level of burnout in exposure group in comparison with non-exposure group in our study. So, physical and mental fatigue, stress and anxiety, and burnout among frontline nurses in comparison with other nurses can result from a range of factors such as resource limitations, longer shifts, and sleep disorders.[23] In contrast of our findings, the results of study by Wu *et al*., demonstrated frontline medical staffs working on the COVID-19 experienced lower levels of burnout than healthcare workers working on usual wards, and it might be because they felt the situation under control,[24] while another study was done by Kim and colleagues for assessing burnout among Emergency department (ED) nurses taking care patients with MERS-CoV infection reported higher burnout than nurses in other hospital departments, which was consistent with the results of our study.[10]

The results of univariate linear regression showed that variables such as employment statue; work experience, hospital resource, and job stress were known as influencing factors on burnout. Furthermore, based on our finding, sustainable employment condition and strong hospital resource can reduce burnout. Although, regards to study by Kim *et al*. reported poor hospital support, hospital resources was significantly higher than our study.[10]

The results of multivariate regression analysis showed job stress as the main related factor with burnout. Based on our result, the main factor among all influencing criteria on burnout is job stress; the second and third influencing factors were hospital resources and family and friend support respectively. However, some systematic review has been reported the hospital resources and family support as major influencing factors for nurses' burnout.[23,25,26]

To cope with such though situation, it is strongly suggested to be well- prepared as hospital facilities, staffs and developing systematic infection-control guidelines. On the other hand, based on previous similar studies and our findings focused on frontline staffs during outbreaks, nursing managers need to pay much more attention to health care worker and design the long-term program such as preventive plans, reducing shift work, and find the sources of stress and resolve them to manage not only the ongoing outbreak, but we will also be able to control the future pandemic.

One limitation of this study is small number of sample size, bias in filling out the questionnaire, and not considering selecting the participants from other region of country. In addition, job attitude, having the previous experience with contagious disease is better to added for future study. Due to prolonged involvement of people with COVID-19, we also suggest doing this study in a longer period of time during the COVID-19 outbreak to compare the present results with future data to achieve the better conclusion. However, this is the first study of its kind for evaluating nurses' burnout.

Conclusion

Due to the nature of nurses' job faced with various diseases and sometimes unknown cause much more stress lead to burnout overtime and based on the results, it is confirmed the burnout level is almost higher in frontline nurses in comparison to other nurses. On the other hand, numerous evidences illustrated the strong relationship between burnout and problems influenced both work and individual life resulted in uncontrolled outbreak. So, in order to lower the level of burnout, nursing managers must make more efforts to reduce job stress and burnout through finding stress sources and resolving them. It is highly recommended to develop effective and systematic burnout management programs to be able to cope against possible future outbreaks of infectious disease may lead to pandemic.

Conflict of Interest. The authors declare that there is no conflict of interest regarding the publication of this article.

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Psychometric Properties of the Functional Social Support Domain of Perinatal Infant Care Social Support

Original article

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Psychometric Properties of the Functional Social Support Domain of Perinatal Infant Care Social Support

Abstract

Objective. To determine the face, content, construct validity, and reliability of the functional social support domain of Perinatal Infant Care Social Support (PICSS) translated into Spanish and adapted for first-time mothers of term babies. **Methods.** Validation study of the functional social support domain of PICSS, which has 22 items with response options from 1 to 4; higher scores indicate greater social support. A translation, back-translation, and cultural adaptation process took place along with an expert review to evaluate face and content validity. In total, 210 mothers participated to establish construct validity and the reliability of the domain. The content validity index and factor analysis were used to identify the structure of the domain. Reliability was estimated using Cronbach's alpha coefficient. **Results.** Linguistic and cultural adaptations were performed, along with validation and reliability.

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Face validity for mothers was the following: high comprehension (94%); and for experts: high comprehension (95.83%), high clarity (96.53%), and high precision (92.82%). In relevance and pertinence, the content validity index was high (0.97). Construct validation identified two factors that explained 76% of the variance of the domain evaluated: factor 1 "Supporting presence -emotional and appraisal support" (13 items, 39%) and factor 2 "Practical support -informational and instrumental support-" (9 items, 37%). Cronbach's alpha value was 0.97. **Conclusion.** Given the robust psychometric properties of the Spanish version of the functional social support domain of PICSS, this may be used to identify the functional social support in the mothers.

Descriptors: validation studies: psychometrics; reproducibility of the results; translating; mothers; social support.

Propiedades psicométricas del dominio de apoyo social funcional del Perinatal Infant Care Social Support

Resumen

Objetivo. Determinar la validez facial, de contenido, de constructo y confiabilidad del dominio de apoyo social funcional del Perinatal Infant Care Social Support (PICSS) traducido al español y adaptado para madres primerizas de bebés a término. **Métodos.** Estudio de validación del dominio de apoyo social funcional del PICSS, el cual tiene 22 ítems con opciones de respuesta de 1 a 4, cuanto más alto sea el puntaje es mayor el apoyo social. Se llevó a cabo un proceso de traducción, retrotraducción y adaptación cultural y una revisión por expertos para evaluar la validez facial y de contenido. Un total de 210 madres participaron para establecer la validez de constructo y la confiabilidad del dominio. Se utilizó el índice de validez de contenido y el análisis de factores para identificar la estructura del dominio. La confiabilidad se estimó mediante el coeficiente alfa de Cronbach. **Resultados.** Se realizaron adaptaciones lingüísticas y culturales, validación y confiabilidad. La validez facial para las madres fue la siguiente: alta comprensión (94%); y para expertos: alta comprensión (95.83%), alta claridad (96.53%) y alta precisión (92.82%). En relevancia y pertinencia el índice de validez de contenido fue alto (0.97). La validación de constructo identificó dos factores que explicaron el 76% de la varianza del dominio evaluado: factor 1 "Presencia de apoyo -apoyo emocional y de valoración" (13 ítems, 39%) y factor 2 "Apoyo práctico -apoyo informativo e

instrumental-" (9 ítems, 37%). El valor alfa Cronbach fue 0.97. **Conclusión.** Dadas las robustas propiedades psicométricas de la versión en español del dominio de apoyo social funcional del PICSS este puede usarse para identificar en las madres el apoyo social funcional.

Descriptores: estudios de validación: psicometría; reproducibilidad de los resultados; traducción; madres; apoyo social.

Propriedades psicométricas do domínio de apoio social funcional do Perinatal Infant Care Social Support

Resumo

Objetivo. Determinar a validez facial, do conteúdo, de construto e confiabilidade do domínio de apoio social funcional do Perinatal Infant Care Social Support (PICSS) traduzido ao espanhol e adaptado para futuras mães de bebés a término. **Métodos.** Estudo de validação do domínio de apoio social funcional de PICSS, o qual tem 22 itens com opções de resposta de 1 a 4, quanto mais alto seja a pontuação é maior o apoio social. Se levou a cabo um processo de tradução, retro-tradução e adaptação cultural de acordo e uma revisão por especialistas para avaliar a validez facial e de conteúdo. Um total de 210 mães participaram para estabelecer a validez de construto e a confiabilidade do domínio. Se utilizou o índice de validez de conteúdo e a análise de fatores para identificar a estrutura do domínio. A confiabilidade se estimou mediante o coeficiente alfa de Cronbach. **Resultados.** Se realizaram adaptações linguísticas e culturais, validação e confiabilidade. A validez facial para as mães foi a seguinte: alta compreensão (94%); e para especialistas: alta compreensão (95.83%), alta claridade (96.53%) e alta precisão (92.82%). Em relevância e pertinência o índice de validez de conteúdo foi alto (0.97). A validação de construto identificou dois fatores que explicaram 76% da variável do domínio avaliado: fator 1 "Presença de apoio -apoio emocional e de valorização" (13 itens, 39%) e fator 2 "Apoio prático -apoio informativo e instrumental-" (9 itens, 37%). O valor alfa Cronbach foi de 0.97. **Conclusão.** Dadas as robustas propriedades psicométricas da versão em espanhol do domínio de apoio social funcional de PICSS este pode usar-se para identificar nas mães o apoio social funcional.

Descriptors: validation studies; psychometrics; reproducibility of results; translating; mothers; social support.

Introduction

When a woman becomes a mother, she faces big challenges regarding the new role with extensive physical, psychological, and social work[1] and, consequently, she must readjust her daily routine and priorities to respond to her care and that of her child.[2] For a first-time mother, this transition is more difficult because of not having prior experience.[3]

Research findings indicate that first-time mothers require social support during the transition to maternity[4-6] Social support may be functional and structural. Functional support refers to exchange activities in a relationship and this support is divided – in turn – into informational (information exchanged between individuals or a group, which has a positive result for the recipient), instrumental (transactions in which direct aid or assistance is offered), emotional (emotional concern for the recipient), and of appraisal (statements or expressions of agreement or correction of some action or point of view). Structural support are the support sources or networks, which can be: formal, like the support offered by the health staff, or informal, especially from their partner or mother.[7]

Social support reduces the tension generated by the new maternal role that favors the affective bond,[8] it is associated with greater confidence of the mother[9] and diminishes the risk of postpartum depression.[10] Bearing in mind the positive impact of social support on the maternal and child health, it is a challenge for nursing to design interventions that favor the different types of social support in first-time mothers and evaluate their effectiveness, which require valid and reliable scales. The literature reviewed by the authors showed no valid and reliable instrument in Spanish that measured specifically the different types of social support in first-time mothers with term babies, within the context of infant care during the postpartum period.

Perinatal Infant Care Social Support (PICSS)[10] is an instrument in English, designed to measure social support in first-time mothers within the context of infant care practices, supported by the theory of social support. The PICSS is comprised by two domains, one to identify structural support, and another to identify functional support, having adequate validity and reliability;[11] however, the PICSS has not been translated, adapted, or validated into Spanish. Considering that the structural domain of the PICSS is not susceptible to psychometric tests[11] and that the functional domain of the PICSS measures different types of support, the aim of this study was to determine the face, content, and construct validity, as well as the reliability of the functional social support domain of the PICSS translated into Spanish and adapted for first-time mothers of term babies.

Methods

Validation study conducted in Colombia during 2018. The participants were contacted in the puerperium service and in outpatient consultation at the San Luis Materno Infantil Clinic in Bucaramanga, an institution attending women from different cities. The inclusion criteria were: first-time mothers with only child, to term, healthy and who were in the first six months postpartum. Mothers with morbidities were excluded.

Domain of functional social support of the PICSS. This was created and validated by Nurse Patricia Leahy-Warren of the University College Cork, Ireland. It is comprised by 22 items distributed into four dimensions (informational support, instrumental support, emotional support, and support of appraisal) evaluated using a four-point Likert-type scale (totally disagree = 1; disagree = 2; agree = 3; totally agree = 4). The minimum score is 22 and the maximum is 88, with higher scores meaning greater social support.[10,11]

Translation, back-translation, and cultural adaptation. The study followed the guidelines by Muñiz *et al*[12] The translation of the original version of the Functional Social Support domain from English to Spanish was made independently by two bilingual nurses and an official translator. Upon obtaining the three translations, the review committee (official translator, philologist, and three expert nurses in maternal-infant health) compared the translations and in consensus originated the initial version, according to the agreement between the original semantics of the questionnaire and the comprehension of each of the items and according to the context of the study population. This Spanish version of the domain was back-translated by another official translator and by two bilingual nurses, who did not know the version in English. With the three back-translations, the review committee reached consensus on the initial version. It was delivered to the author of the PICSS, the initial version into Spanish, together with the initial version of the back-translation for its approval. Thereafter, the adjustments requested were made and the review committee in consensus originated the second version of the domain, which was approved by the author of the PICSS and, then, tested in a pilot study with 10 first-time mothers to obtain the definitive version of the functional social support domain of the PICSS, translated into Spanish and with cultural adaptation.

Experts. To select the experts, the study considered the classification criteria by Fehring,[13] according to which a minimum score of 5 is needed from the total of 14 to be considered an expert, thus: PhD (4 points), Masters (3 points), Specialization (2 points), article published on maternal-infant health (1 point), teaching experience of at least one year in maternal-infant health (1 point), professional experience of at least one year in maternal-infant health (2 points), research in the area of maternal-infant health (1 point). This information was evaluated through the curriculum vitae available on the webpage of Colombia's Ministry of Science, Technology, and Innovation. Upon selecting the experts, they were sent an e-mail letter inviting them to participate. The first validation round had participation from 27 experts (7 with PhD, 16 with Masters, and 4 with Specialization) from 17 universities corresponding to 11 capital cities in Colombia; the second round had participation from 4 experts (1 with PhD, 2 with Masters, and 1 with Specialization) different from those in the first round, from four universities corresponding to four capital cities. The average of years of teaching experience in the area of maternal-infant health was 12 years (range: 4 - 29), of professional experience in the area of maternal-infant health was 16.77 years (range: 8 - 37), of number of articles published in the area of maternal-infant health was 4.59 (range: 3 - 22), of number of investigations conducted in the area of maternal-infant health was 5.03 (range: 3 - 20).

Face validity. This validity saw participation from another 10 first-time mothers who were between

the first and sixth month postpartum, belonging to different socioeconomic and educational levels. The mothers evaluated the criterion of comprehension, with the score: 1 = I don't understand it, 2 = I understand it poorly, and 3 = I understand it. And the experts, in addition to this criterion, evaluated the criterion of clarity, with the score: 1 = it is not clear, 2 = it is not very clear, and 3 = it is clear. Lastly, they also evaluated the criterion of precision, with the score: 1 = it is not precise, 2 = it is not very precise, and 3 = it is precise[14] The degree of comprehension, clarity, and precision of the items was determined through percentages: High = equal to above 85%, Median = 80% - 84.9%, and Low = equal to or below 79%.

Content validity. The experts evaluated the criterion of pertinence, with the score: 1 = not pertinent, 2 = poorly pertinent, 3 = pertinent, 4 = very pertinent. And the criterion of relevance, with the score: 1 = not relevant, 2 = poorly relevant, 3 = relevant, 4 = very relevant[15] The content validity index (CVI)[16] was calculated for each expert with the following formula: number of items with a score entre 3-4 divided between the total number of items, followed by the estimation of the general content validity index, using the formula: sum of the CVI calculated for each expert divided between the total number of experts. The CVI for each item was determined to evaluate their pertinence and relevance. The calculation was made by using the formula: number of experts agreeing on the relevance value or the pertinence value of each item divided between the numbers of experts. A quantitative analysis was performed of the content validity by bearing in mind that scores equal to or above 0.80 have high content validity.[16]

Thereafter, a qualitative analysis was made of the observations given in the first round of experts to each of the items in the following manner: in the second round, a group of experts from the area of maternal-infant health different from that participating previously, to control information selection bias (that is, they would be inclined to prioritize their own observations), reviewed each of the observations and through consensus agreed. Required adjustments were made in the different items. To make modifications in an item, agreement consensus was needed from over 50% of the experts.

For the construct validity and reliability, sample size was determined according to the criterion of 10 participants by the number of items in the scale[17] The final number of participants analyzed in this study was 210. Mean age was 24.39 years (SD±5.66). The participants belonged to socioeconomic levels: 1 and 2 (47.62%), 3 and 4 (49.05%), and 5 and 6 (3.33%); 39.05% were housewives; 25.71% were employed and 35.24% performed other activities; 35.24% had university formation; 33.33% high school formation and 28.57% technical or technological formation; only 2.86% had only primary education; most were in common-law relationships or were married (86.19%). The type of delivery was vaginal (51.43%) and the rest via cesarean (48.57%). On the moment of collecting the information, 87.61% of the mothers had less than a month of postpartum.

Construct validity. The factor analysis began with the exploration of the total correlations of the items through Pearson's correlation coefficient, followed by the application of Bartlett's sphericity test and calculation of sample adequacy through the Kaiser-Meyer-Olkin (KMO) statistic, which considered acceptable a coefficient > 0.65.[18] Factor extraction was conducted by considering a minimum value of 0.3 in the correlation coefficients of the factors and eigenvalues >1 to be considered important; also, an explained variance >60% was expected, varimax orthogonal rotation was used. Analyses were conducted in Stata v12.0.

Reliability. Cronbach's alpha coefficient was used to calculate the estimations of internal consistency in the total sample and in each of the dimensions

of the functional social support domain of PICSS. A coefficient of 1.00 indicates a perfect reliability and a coefficient of 0.00 indicates reliability does not exist.[19]

Ethical aspects. The study adhered to Resolution 008430 of 1993 by the Colombian Ministry of Health, which establishes the standards for health research. Furthermore, the study kept in mind the international ethics guidelines for research on human beings as mandated by the Helsinki Declaration. All the participants submitted a written informed consent. This research was approved by Universitat Rovira i Virgili in Spain and by the Hospital Bioethics Committee at the San Luis Materno Infantil Clinic in Bucaramanga, Colombia.

Results

Face validity and content validity. The face validity score by the mothers was: high comprehension (94%). The face validity score by the experts was: high comprehension (95.83%), high clarity (96.53%) and high precision (92.82%). In relevance, the content validity index was 0.97 and in pertinence, the content validity index was also 0.97. Adjustments were made of the items by consensus agreement.

Construct validity. The model showed simple adequacy (KMO = 0.94, Bartlett's test p <0.001), thus, the factor analysis was performed. Pearson's pairwise correlations of all domain items had values between 0.35 and 0.94. Two factors were determined with eigenvalues >1: the first with 14.47 and the second with 2.22, which after the varimax orthogonal rotation explained 39% and 37% of the variance, respectively, for an accumulated 76% explained variance. Bearing in mind the items that compose each of the factors in the rotated matrix, factor 1 is named "Supporting presence (emotional and appraisal support)" (13 items) and factor 2 is named "Practical support (informational and instrumental support)" (9 items). In both factors the factor loads were above 0.62. Communality values for all the items were in the range of 0.36 and 0.88 (Table 1).

Table 1. Higher score on factor loads with varimax orthogonal rotation

Items	Factor 1	Factor 2	Communalities
V01- I can get information on how to feed the baby		0.88	0.87
V02- I can get information on how to change the nappies / dress the baby		0.89	0.88
V03- I can get information on how to console the baby/make the baby comfortable		0.87	0.88
V04- I can get information on how to bathe the baby		0.86	0.84
V05- I can get information on taking care of my body after child birth		0.64	0.73
V06- I can learn from other mothers' experiences	0.70		0.76
V07- I can get information regarding baby care	0.71		0.78
V08- I can get hands on help with my baby to feed the baby		0.75	0.65
V09- I can get hands on help with my baby to change the nappies / dress the baby		0.85	0.84

Table 1. Higher score on factor loads with varimax orthogonal rotation (cont.)

Items	Factor 1	Factor 2	Communalities
V10- I can get hands on help with my baby to console the baby / make the baby comfortable		0.85	0.88
V11- I can get hands on help with my baby to bathe the baby		0.81	0.75
V12- I have someone to help me with routine housework	0.62		0.55
V13- I won't be on my own taking care of my baby	0.69		0.66
V14- I have time for myself	0.55		0.36
V15- I have people I can count on when things go wrong	0.84		0.85
V16- I have someone who takes care of and concerns about me	0.84		0.72
V17- I have someone to talk to about how I am feeling	0.86		0.81
V18- If I need advice there is someone who will assist me to work out a plan for dealing with the situation	0.82		0.81
V19- I have people I can talk to and share my experiences with	0.81		0.80
V20- I have people who will show me appreciation for the care I give to my baby	0.84		0.86
V21- People close to me understand that it is okay for me to need help	0.80		0.80
V22- I can get positive feedback from health care professionals about my ability to care for my baby	0.72		0.61

Reliability. Cronbach's alpha for all the functional social support domain was 0.97 (95%CI = 0.97-0.98). By dimension, factor 1 had a slightly inferior coefficient (0.96, 95%CI = 95.42-96.93) with respect to factor 2 (0.97, 95%CI = 95.80-97.80). Values per each item are shown in Table 2.

Table 2. Varimax orthogonal rotated factors, item-test correlation and Cronbach's alpha

Items in Spanish	Items in English	Item-test correlation	Total alpha if item is eliminated
Factor 1. Presencia de apoyo (apoyo emocional y de valoración)	**Factor 1. Supporting Presence (emotional and appraisal support)**		
V06-Puedo aprender de las experiencias de otras madres	I can learn from other mothers' experiences	0.86	0.96
V07-Puedo obtener información sobre el cuidado del bebé	I can get information regarding baby care	0.87	0.96
V12-Tengo a alguien que me ayuda con las tareas domésticas de rutina	I have someone to help me with routine housework	0.76	0.96

Table 2. Varimax orthogonal rotated factors, item-test correlation and Cronbach's alpha (cont.)

Items in Spanish	Items in English	Item-test correlation	Total alpha if item is eliminated
V13-No estaré sola cuidando a mi bebé	I won't be on my own taking care of my baby	0.83	0.96
V14-Tengo tiempo para mí	I have time for myself	0.62	0.97
V15-Tengo personas con las que puedo contar cuando las cosas salen mal	I have people I can count on when things go wrong	0.91	0.96
V16-Tengo a alguien que me cuida y se preocupa por mí	I have someone who takes care of and concerns about me	0.81	0.96
V17-Tengo a alguien con quien hablar sobre cómo me estoy sintiendo	I have someone to talk to about how I am feeling	0.88	0.96
V18-Si necesito orientación, hay alguien que me ayudará a elaborar un plan para enfrentar la situación	If I need advice there is someone who will assist me to work out a plan for dealing with the situation	0.89	0.96
V19-Tengo personas con las que puedo hablar y compartir mis experiencias	I have people I can talk to and share my experiences with	0.88	0.96
V20-Tengo personas que me mostrarán aprecio por la atención que le doy a mi bebé	I have people who will show me appreciation for the care I give to my baby	0.92	0.96
V21-Las personas cercanas a mí entienden que está bien que necesite ayuda	People close to me understand that it is okay for me to need help	0.89	0.96
V22-Puedo obtener comentarios positivos de los profesionales de la salud sobre mi capacidad para cuidar a mi bebé	I can get positive feedback from health care professionals about my ability to care for my baby	0.78	0.96
Factor 2. Apoyo práctico (apoyo informativo e instrumental)	**Factor 2. Practical Support (informational and instrumental support)**		
V01-Puedo obtener información sobre cómo alimentar al bebé	I can get information on how to feed the baby	0.92	0.96
V02-Puedo obtener información sobre cómo cambiarle el pañal / vestirlo	I can get information on how to change the nappies / dress the baby	0.93	0.96
V03-Puedo obtener información sobre cómo consolarlo / ponerlo cómodo	I can get information on how to console the baby / make the baby comfortable	0.92	0.96
V04-Puedo obtener información sobre cómo bañarlo	I can get information on how to bathe the baby	0.91	0.96
V05-Puedo obtener información sobre cómo cuidar mi cuerpo después del nacimiento del bebé	I can get information on taking care of my body after child birth	0.81	0.97
V08-Puedo obtener ayuda con mi bebé para alimentarlo	I can get hands on help with my baby to feed the baby	0.83	0.97
V09-Puedo obtener ayuda con mi bebé para cambiarle el pañal / vestirlo	I can get hands on help with my baby to change the nappies / dress the baby	0.92	0.96
V010-Puedo obtener ayuda con mi bebé para consolarlo / ponerlo cómodo	I can get hands on help with my baby to console the baby / make the baby comfortable	0.94	0.96
V011-Puedo obtener ayuda con mi bebé para bañarlo	I can get hands on help with my baby to bathe the baby	0.87	0.97

Discussion

This study conducted for the first time the process of translation and validation of the original version of the functional social support domain of Patricia Leahy-Warren's PICSS from English into Spanish.

Regarding face validity, the Spanish version of the functional social support domain had high comprehension, high clarity, and high precision. These coincide with prior studies in first-time mothers[10] and in experts,[11] who evaluated this domain as clear.

The Spanish version of the functional social support domain obtained high scores in the content validity index with respect to pertinence and relevance, evaluated by important experts from Colombia, which agrees with the high content validity presented in Ireland in prior studies.[7,11] With respect to construct validity, two factors were found, as reported by the PICSS author,[11] which also reflect conceptually the supporting presence (emotional and appraisal support) and the practical support (informational and instrumental support), evidencing that the Spanish version of this domain measures adequately the construct of functional social support in first-time mothers.

The results of the distribution of the items in two factors obtained in this study agree with findings recently reported from Ireland,[11] except for the item "I can get information regarding baby care" that was placed in a different factor. Moreover, the study cited eliminated items; rather, in this study there was no need to eliminate any because the loads of the 22 items were > 0.3. The differences mentioned may be consequence of the adaptation made to the functional social support domain in another cultural context.

In relation to the period of time in the postpartum in which the PICSS functional social support domain was applied and validated, the study conducted in Ireland[11] was applied in mothers at six weeks postpartum, while this study had participation of mothers up to six months postpartum, also finding the same two factors that represented 76% of the explained variance; hence, the present study broadens the time of the use of the domain in the postpartum, as a contribution to a valid and reliable measurement of functional social support in first-time mothers.

With respect to reliability, the high Cronbach's alpha value presented by the Spanish version of the functional social support domain, for its 22 items and by factors, shows the shows the robustness of the validated domain. This agrees with the high Cronbach's alpha values of the domain, reported in previous studies.[7,11] A limitation of this study is that it only included healthy mothers with term children, which is why future studies should include mothers with other conditions. In addition, it is recommend for each country to carry out the corresponding cultural adaptation of the functional social support domain.

The functional social support domain is a valuable tool in Spanish that only requires approximately 10 min for its self-completion, may be used during the hospital stay, upon discharge, and during postpartum follow up. In conclusion, given the robust psychometric properties of the Spanish version of the functional social support domain, health professionals can identify easily first-time mothers with low functional social support, conduct interventions that favor it, and evaluate the effectiveness of said health interventions, which is an important contribution to the nursing discipline in the area of maternal-infant health.

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Education and Health: A Care Bond. School-Nursing Model for Colombia

Original article

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Education and Health: a Care Bond. School-Nursing Model for Colombia

Abstract

Objective. To describe the construction and validation process of a *Model of professional practice of school nursing for Colombia*. **Methods.** Study under the approach of "methodological research in nursing" carried out by the Colombian network of school nursing, with the participation of 26 nurses from different institutions in a research developed in three stages: revision of antecedents, identification and prioritizing of assumptions to construct the model, and validation of the preliminary proposal with the participants and with a group of experts. **Results.** The study presents the components that were part of the construction of the *model of professional practice of school nursing for Colombia*, which includes the four meta-paradigmatic elements of this professional discipline: the receptor of care, the context, nursing, and health, as well as the prioritized assumptions that indicate how these elements interact in achieving the student´s

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wellbeing and that of the education community. It includes the report from a focal validation group with the participants in which they summarize as *education and health: a care bond*, and the concept by experts on such. **Conclusion.** The *Model of professional practice of school nursing for Colombia: education and health: a care bond*, constructed in participative manner with nurses experts in the field and validated with theoretical experts complies with the international guides for the design of this type of theoretical construction and permits guiding the care goals of students, maintain the autonomy of the nurses and their interprofessional participation in this field.

Descriptors: school nursing; nursing methodology research; models, nursing; nursing theory.

Educación y salud: un vínculo de cuidado. Modelo de enfermería escolar para Colombia

Resumen

Objetivo. Describir el proceso de construcción y validación de un *Modelo de práctica profesional de enfermería escolar para Colombia*. **Métodos.** Estudio bajo el abordaje de "investigación metodológica en enfermería" realizado por la Red Colombiana de Enfermería Escolar. Participaron 26 enfermeras de diferentes instituciones en una investigación desarrollada en tres etapas: revisión de antecedentes, identificación y priorización de supuestos para la construcción del modelo, y validación de la propuesta preliminar con los participantes y con un grupo de expertos. **Resultados.** Se presentan los componentes que hicieron parte de la construcción del *Modelo de práctica profesional de enfermería escolar para Colombia*, que incluyen los cuatro elementos meta-paradigmáticos de esta disciplina profesional: el receptor del cuidado, el contexto, la enfermería y la salud, así como los supuestos priorizados, que indican la forma en que estos elementos interactúan en el logro del bienestar del escolar y de la comunidad educativa. Se incluye el reporte de un grupo focal de validación con los participantes en el que lo resumen como *educación y salud un vínculo de cuidado*, y el concepto de expertos sobre el mismo. **Conclusión.** El *Modelo de práctica profesional de enfermería escolar para Colombia: educación y salud un vínculo de cuidado*, construido de forma participativa con enfermeras expertas en el campo y validado también con expertos teóricos cumple con las guías

internacionales para el diseño de este tipo de construcción teórica y permite orientar las metas del cuidado del escolar, mantener la autonomía de las enfermeras y su participación interprofesional en este campo

Descriptores: servicios de enfermería escolar, investigación metodológica en enfermería, modelos de enfermería, teoría de enfermería.

Educação e saúde: um vínculo de cuidado. Modelo de enfermagem escolar para Colômbia

Resumo

Objetivo. Descrever o processo de construção e validação de um *Modelo de estágio profissional de enfermagem escolar para Colômbia*. **Métodos.** Estudo sob a abordagem de "investigação metodológica em enfermagem" realizado pela *Rede Colombiana de Enfermagem Escolar*. Participaram 26 enfermeiras de diferentes instituições em uma investigação desenvolvida em três etapas: revisão de antecedentes, identificação e priorização de supostos para a construção do modelo, e validação da proposta preliminar com os participantes e com um grupo de especialistas. **Resultados.** Se apresentam os componentes que fizeram parte da construção do Modelo *de estágio profissional de enfermagem escolar para Colômbia*, que incluíram os quatro elementos metaparadigmáticos desta disciplina profissional: o receptor do cuidado, o contexto, a enfermagem e a saúde, assim como os supostos priorizados, que indicam a forma em que estes elementos interagem na conquista do bem-estar do escolar e da comunidade educativa. Se inclui o relatório de um grupo focal de validação com os participantes no qual o resumo como *educação e saúde um* ***vínculo de cuidado***, e o conceito de especialistas sobre o mesmo. **Conclusão.** O *Modelo de estágio profissional de enfermagem escolar para Colômbia: educação e saúde um vínculo de cuidado*, construído de forma participativa com enfermeiras especialistas no campo e validado também com especialistas teóricos que cumpre com os guias internacionais para o desenho deste tipo de construção teórica e permite orientar as metas do cuidado do escolar, manter a autonomia das enfermeiras e sua participação interprofissional neste campo.

Descriptores: serviços de enfermagem escolar; pesquisa metodológica em enfermagem; teoria de enfermagem.

Introduction

Promoting childhood health is undoubtedly a strategy that impacts upon the wellbeing and progress of the people.[1] The World Health Organization indicates, in said sense, that health promotion schools seeking to propitiate favourable conditions for children and adolescents to have a better present and future quality of life are a priority.[2] The professional nursing discipline has had important progress from its theoretical development, especially the broad-range conceptual models;[3] however, although progress is known in the environment with models of professional practice,[4] none was found reported in the school nursing field. Nevertheless, it has been documented that the presence of school nurses generates a positive difference in care and in the health of the school population;[5] and the performance of their role has been described.[6]

In Latin America, school nursing originated as a response to need to provide quality care to children.[7] However, it has been indicated that the support based on evidence to back the presence of nursing in schools continues being weak.[8] In Colombia, school nurse works have been carried out in private schools that seek to improve the practice permanently: this is how in 2007 and until 2011, the Colombian Association of School Nursing (ACENES, for the term in Spanish) was organized, which was transformed into the Committee of School Nursing of the National Association of Nurses of Colombia (CEE-ANEC, for the term in Spanish) between 2015 and 2018. In June 2018, the very same group decided to start the work of the Colombian Network of School Nursing, together with Universidad de la Sabana, being constituted in 2019 to qualify nursing care provided to students and other members of the education community, for its promotion and protection, prevention of health problems in the school environment and recovery and rehabilitation of health through an integral, interdisciplinary, and inter-sector approach.[9,10] In continuing with this work, the model of professional practice of school nursing for Colombia was developed, whose construction and validation process was the objective of the present work.

Methods

This was a study conducted with the approach of methodological research in nursing,[11] within the framework of the Colombian Network of School Nursing, carried out in three stages: (i) *Revision of national antecedents*, which analysed the nursing practice through a series of individual interviews and secondary sources of information that showed the need to have a school-nursing model; (ii) *Interviews to 26 school nurses*, identifying and prioritizing

the basic aspects of the school-nursing model which, from three guides developed by the Faculty of Nursing and Rehabilitation at Universidad de la Sabana, se identified initially the four meta-paradigmatic concepts in relation with the nursing practice in this field. Then, the assumptions of school nursing were specified with this same group, indicating how the concepts described should be articulated in practice to reflect the desired scenarios. Upon defining the assumptions, these were classified under parameters of importance and governance for school nursing through the iGo matrix.[12] In this matrix, participants scored from 0 to 500 each condition and for the result value of these scores was averaged, as high, medium, or low, according to parameters from the same methodology where, from the average and extreme values, the distribution of the ranges arises. This was how from the analysis of prioritized components, emerged the initial version of the model. For validation, a focal group was carried out with the participants who were asked to indicate if the model proposed reflected their contributions, knowledge, and experience. From the suggestions received, a final adjustment was made and a name, a slogan, was sought and a summary of the fundamental was made to communicate it with ease; (iii) Upon agreeing on the definitive model with the participating group, *the process of construction and components* was revised with support from two recognized experts in the field of theoretical construction of nursing, to verify its level of internal coherence and the degree of compliance with the international criteria in effect for this type of theoretical development.[13]

The study was conducted within the Colombian Network of School Nursing and received institutional approval from Universidad de la Sabana, within the project "Validation of a Strategy to Improve the Institutional Nursing Practice in Teaching-Care Alliance". All the participants signed a written informed consent.

Results

From the theoretical review, the group of participating expert nurses was defined, along with an account of their prior accomplishments and the state of the art in this field, which generated comparison parameters of the present results, as presented at the end of this section in the Discussion. In the second stage, the components of the model of *professional practice of school nursing for Colombia* emerged, which include the concepts, theoretical assumptions, and their prioritizing in the following order:

The four meta-paradigmatic concepts

First, concept of person

The subject of care by school nursing. The subjects of care by a school nurse are children or adolescents and with them the whole education community. School-age children or adolescents, registered in a school as students, are for the nurse unique persons. The school nurse also cares for the teaching staff, including directors, administrative personnel and those in general services, and sometimes their children or relatives, who could be present in the school receiving services of wellbeing. Through this bond with the children or in special events, care is provided to their parents, guardians, students from other schools and to the members of their families who attend different activities (academic, cultural, sports, or recreational) or to whom – for different reasons – are in the school facilities or accompanying activities under the responsibility of the institution as suppliers, contractors, or visitors. Care by the school nurse encompasses other colleagues who when exercising common tasks need accompaniment, socialization of their activity or ratification of their work.

Second, concept of health

School nursing seeks to contribute to the education of happy, sensitive, critical, and authentic individuals capable of constructing freely their own history and be able to contribute creatively to the cultural, socioeconomic, and environmental environment, creating a conscience of responsibility and respect for the community and for themselves through continuous renovation. The school nurse seeks to respond to the different health needs and situations presented by the students and other members of the education community looking for their wellbeing and guaranteeing their safety. For the school nurse, it is a priority to propitiate the inclusion of children or adolescents, facilitating all to develop their school activities. The nurse looks for the children or adolescents and the rest of the school community to become stronger in the capacity for caring and for them to make decisions in favour of a healthy life.

Third, concept of environment

The context of caring by school nursing. The context of caring for children and adolescents is, in the first instance, the school and bears in mind the rest of the environments where the children and adolescents develop their daily lives or those that can affect their wellbeing. The school context, according with the institution's mission, has education as its purpose. This context is flexible and includes, among others, the classrooms, the cafeteria, recreational spaces, and transportation; keeping in mind extracurricular activities, pedagogical outings, and local, national and international excursions. The school environment permits strengthening a culture of health care, but it also has risks that can affect it and which must be understood and minimized. This care context includes the families, directors, teachers, and other members of the school community. The school, at internal level, governs relationships through a school life manual, according to current regulations and, at the external level, is related with other schools for which it can be local, national, and international referent. Although the schools operate amid of a globalized and changing world, they cannot forget their responsibilities of preparing students with ethics and values in response to the institution's philosophy. Both the nurse and nursing are part of the school context, within this setting, nurses manage information, equipment, and special supplies related with health care and must guarantee the privacy and confidentiality of the information and articulate care with the required interdisciplinary, interinstitutional, and intersectoral support. Health care provided to the school community is governed by regulations from the educational, health, and work systems.

Fourth, concept of nursing; the role of nursing for the school nurse

School nurses carry out their practice through the exercise of different roles, which include:

A *caring* role, where the nurse cares during the school or extracurricular day, bearing in mind the age, condition, support network of the person being cared for, and the institutional values of respect, responsibility, solidarity, as well as of cordiality with good interpersonal relationships characterized by an environment of trust, which requires empathy, discretion, and confidentiality in the management of information. For such, it is important to always recognize the child or adolescent who requires their service as a unique person; the nurse needs to look in their eyes, listen to them, validate what they express, and care for their ailment or request. The school nurses guide their care with a care plan denominated nursing care plan, which includes: assessment, diagnosis of priorities, planning, intervention, follow up, and evaluation. Said plan must be individualized contextualized, respond to special conditions, and guarantee safety and continuity in care, as well as in the administration of supervised treatments and enhancement of individual skills, amid a process of the development of the child or adolescent.

The nurse cares for the person, under professional criterion and following the pertinent guidelines

in each case. For this, the nurse seeks support on the best evidence available and documents said care. Nurses care for acute or emergency situations, guaranteeing the assessment, first aid, and remission, according to the case, looking to stabilize and protect the person, until referral to the adequate instance with the required company, understanding and prioritizing the family's importance in this situation.

Nurses *advocate* when protecting the school community, especially children and adolescents as vulnerable individuals who require care actions, until their parents and/or guardians arrive. They *advise* on health care to students, coworkers, families, and other members of the school community to clear doubts related with health and strengthen self-care practices. They also advise those attending the context and health to generate healthy environments.

Nurses *lead healthy* behaviour in school, where they administer care guided under parameters standardized through guides or protocols. Within their action with the school community, they coordinate their activities with children and adolescents, directors, professors, parents, health professionals, and those responsible for services. Moreover, nurses identify risks, elaborate emergency plans and support management of workplace safety and health in coordination with pertinent instances to guarantee the highest possible level of wellbeing.

The *managerial* function implies for them the development and implementation of indicators related with the nursing service, research, and analysis of health trends to provide pertinent recommendations and make decisions according to the priorities of the school community, responding to health problems that affect it or may come to affect it.

Nurses, as *collaborators*, participate as members and representatives of the school community and of the institution in different committees and orientation activities related with the student's wellbeing and health, including the Institutional Educational Project (PEI, the term is in Spanish), the School Life Manual, and the pedagogical projects. They also participate as *builders and evaluators of policies* of school health, seeking for these to have the resources required for its implementation within the institution.

Bearing in mind the institutional purpose, nurses set the example and call for the student's participation in a way that allows them to internalize the behaviour and skills required for their care and for others. Among their activities as *educators*, they offer health promotion and disease prevention programs according with the course of life, which include – among others, health education, intervention in the classroom, epidemiological surveillance, and vaccination according to the broadened immunization plan, information and communication related to health care, intervention in pedagogical projects and promotion of healthy lifestyles and of a culture that protects health. All these roles and responsibilities demand of nurses to *investigate* to update and share the professional and disciplinary knowledge, to strengthen the capacity of caring for the experience of the health of the members of the school community individually or collectively.

Theoretical assumptions and their prioritizing

Table 1 shows the theoretical assumptions proposed in the study. In total, there were 36 prioritized assumptions classified into high, medium, or low levels. The assumptions of highest priority indicate which is most important for the school nurse and which has greatest control or governance, such as warm treatment, supported on the best evidence available and supported on adequate communication.

Table 1. Assumptions proposed as part of the development of the *Model of professional practice of school nursing for Colombia 2019*

	Assumptions of school nursing	Score	Priority level
1)	Kind treatment by nursing helps to establish a relationship of trust that favors caring for the members of the education community	500	High
2)	To adequately care for a member of the school community, nurses must: assess and prioritize the care of their needs; identify the care actions required; establish with the person shared care goals; assist, support, or educate as required; and evaluate and register each of the actions undertaken	495	
3)	The members of the school community who receive warm and timely care by nursing feel satisfied and grateful	495	
4)	The care the nurse offers to the school community must be technically sound and based on the best evidence available	486	
5)	To provide safe care to students, adequate communication is necessary with their parents or guardians, as well as with the different areas of the school	482	
6)	A well-implemented nursing service generates trust in the students' parents	477	
7)	Complete assessment that guarantees the information required and privacy necessary is indispensable to provide good nursing care	473	
8)	Education is a fundamental and multiplier tool for care that nursing has to promote the health of the school community and this must be adapted by taking into account the characteristics of the participants	468	Medium
9)	School nurses must maintain continuous training to respond adequately to the health requirements of the education community	468	
10)	To focalize the care required, the school nurse must understand that the child is in a period of growth and development, which generates changing needs	468	
11)	School nursing must be an integral part of the services of wellbeing offered by the school	468	
12)	School nurses must gather information from government entities related with health and transmit them in timely manner to the student community	468	
13)	Creativity and use of information and communication technologies provide school nurses a tool to support health care	468	
14)	In the school environment, nurses must ensure permanent protection of the children	464	
15)	The holistic care of the members of the school community must keep in mind the environment	459	
16)	The collective vision of health within the school community requires a program of epidemiological surveillance and corresponding actions of health promotion and disease prevention	459	
17)	To anticipate to requirements of care, in the school community, it is necessary to establish a support network for special situations and emergency cases	459	
18)	Nursing must support the institution to verify safe intra- and extra-curricular environments	459	
19)	The school environment is a privileged setting for nursing care that promotes health during the course of life	459	
20)	Caring for the education community with criteria of quality and opportunity demands having the resources necessary for said care	455	

Table 1. Assumptions proposed as part of the development of the *Model of professional practice of school nursing for Colombia 2019* (cont.)

Assumptions of school nursing	Score	Priority level
21) Improving the health care of the education community requires the co-responsibility from each of its members	450	
22) Nurses in the school environment are responsible for advising, supervising, and evaluating the auxiliary staff in their charge	450	
23) Nurses require developing management skills to suitably fulfill their activity of caring for the health of the education community	450	
24) Adequate care of the school community requires appropriate facilities to care for emergencies under current enabling regulations	445	
25) Nursing must have the human and physical resources necessary to safely care for the student population, besides covering the full school day, including extracurricular activities of academic, sports, and cultural nature	445	
26) Diminished scholar and labor absenteeism due to health motives is one of the goals of school nursing	445	
27) A school that prioritizes health care, reflects it through positioning nursing in its organizational scheme, its PEI, and its school life manual	445	
28) Nursing with adequate and pleasant areas generates in the students more pleasure to consult and seek help to care for their health	441	Low
29) Adequate nursing care demands registry and technological support for the school community	441	
30) The suitability of the school nurse permits academia to seek support on said nurse to broaden the educational offer	441	
31) To promote the safety of the school community, it is fitting to participate in identifying its risks and in planning and executing a program seeking to control and minimize them	432	
32) School nursing must stimulate the children's development supporting their capacity to solve interpersonal problems not always related with health	427	
33) A nursing program in the school environment requires assignation of its own budget	414	
34) The nurse must participate in environmental health programs required by the school community	414	
35) Execution of an inclusive policy within the education community requires special actions with the respective resources	409	
36) The strategic location and quiet atmosphere of nursing support the wellbeing of the school community	405	

In synthesis, these concepts and prioritized assumptions comprised the initial version of the model of *professional practice of school nursing for Colombia*, which when validated by the participants received the slogan "*Education and health: a caring bond".*

The model indicates that the practice of school nursing requires generating a caring bond, which unites education and health. For this, both the school environment and the kind treatment by the nurse are fundamental to establish a relationship of trust that favours caring for the members of the education community. The care nurses offer to the school community must be technically sound and based on the best evidence available. When caring, nurses apply and register the nursing process, in this, the full assessment, necessary privacy, and adequate communication with parents or guardians and with the different areas of the school, are necessary.

A well-implemented nursing service generates trust in all the members of the school community, who upon receiving warm and timely care feel satisfied and grateful. During the external validation with academic experts, these classified the *Model of professional practice of school nursing for Colombia* by employing the criteria by Kim, based on which it was established that the model designed is of functional type, given that it reflects it directly a route to guide the practice of school nursing in the country; it is a model of humanistic orientation, given that it has the child or adolescent as the priority focus of action; it is of integral nature because it reflects a systemic vision of the nursing practice; it is representative because it portrays the reality lived by nursing at school community level; and – lastly – it was seen as a model, which allows monitor through the creation of indicators based on its assumptions.

Discussion

The process of constructing and validating a model of professional practice of school nursing for Colombia generates a contribution to universal literature that reflects the search and support of theoretical models to guide the school nursing practice and its roles to guide the exercise of nurses in this field.[5] The result of present study complements prior research with similar purposes. In England, for example, through a qualitative study, a group of researchers sought to know what the perception of school nurses on their own role so that upon understanding it better, the practice would be qualified.[14] Although their findings indicate that the principal focus of school nursing is education for health, an activity that coincides with nursing roles described in this model, the authors also emphasize on institutional consultancy, workload, and search for educational resources and community work.

An integrative review conducted in Brazil on health education given by nursing in schools, indicates – as in the present work – that this component of the school nurse's role is fundamental. For them, this activity is organized in three areas that include: education for health generically; nursing and education on school health; and actions carried out in the school environment as part of the educational responsibility.[8] These three components are visible in the Colombian model of school nursing, however, their classification is complementary to such.

Consideration and integration of the school community reflected by the present development was also studied in Brazil, where it was found that the work by these nurses with the families impacts positively on the better conduct of the students,[1] and in Norway, where it was evidenced that joint work between nursing and physical educators motivates the participation of children in activities that promote their health.[16] In the United States, to explain and guide nursing within the setting of school health, a group of nurses reported the adoption of the practice model *Intervention Wheel* with 17 possible public health interventions for people in individual, family[17], or community manner. Its use, although not dealing with a specific school nursing model, like the one developed in the present work, facilitated comprehension and permitted focalizing the public health component at school level. Likewise, in Australia, the presence of nurses to implement a

structured health promotion program in the school reflected that it is possible to improve the health conducts of children and, thus, justified the funding required by these types of programs.[18] Similar findings are reported in another North American study, which indicates how the presence of full-time school nurses is necessary to diminish frequent diseases in children and adolescents and improve their academic performance.[19]

A systematic literature search on school nursing conducted in the United States grouped its activities into four: those of health promotion and prevention, those of categorization and treatment of acute health problems, management of children with chronic diseases or conditions, and psychosocial support to students; from its results, it is deducted that the presence of school nurses was associated with greater care, better school quality and higher savings, and it became evident that the members of the school's education community, including teachers, school administrators, and parents, see the school nurse as a valuable member of the education team. However, the authors point out, that it is necessary to have greater evidence and methodological rigour for school nursing to be enhanced, increase its number of members, and achieve positioning their role, motive that supports a call to work in alliance between this group and academia from universities to strengthen this field.[20] The present development, which permitted obtaining a guiding model for school nursing in Colombia, is not only a reflection of the synergy generated by the joint work between school nurses and university professors, but which also reports to a broader nursing role, with a total and inclusive vision of students in their context.

A work conducted in Australia indicates how nurses can impact the life projects of children, helping them to better understand their skills, to care for themselves and others.[21] As it occurs in the school-nursing model for Colombia, the centre of and focus of action is the wellbeing of students and their strengthening as protagonists of their history. Also contained in the present model is caring for children with diverse skills, which are supported to achieve their wellbeing and inclusion to school life. Works in the field reflect the role of the school nurse in facilitating this inclusion and call on strengthening the support that backs their actions, as well as that of other professionals,[22,23] explicitly, as done by the school-nursing model for Colombia indicating, as done in the present development, that for health promotion, student participation and satisfaction students with the programs are definitive.[24] Lastly, this conceptual progress agrees with current criteria internationally for the development of nursing theoretical models and which include internal and external criticism; theoretical representation and critical discussion; evaluation examination of nursing models and theories; and revision of formation of processes related with the practice.

This study concludes that the *Model of professional practice of school nursing for Colombia: education and health: a care bond* identified the meta-paradigmatic concepts of the professional discipline in this field, as well as the assumptions relating them in the school practice to achieve the goals proposed. Validation of the theoretical development with the participating nurses ratified their identification with it. Adding to this, the contribution by experts in theoretical development of nursing and the comparison of the development achieved with international standards based on which the process and results obtained were ratified.

This model prioritizes the closeness of nurses to favour the care of the members in the education community. It demands technical soundness based on the best evidence available and guided by the steps of the nursing process, which will permit guiding the definition and evaluation of care goals, helping to maintain autonomy, as well as its interprofessional contribution to strengthening the care bond between health and education.

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Review

Formation in Interprofessional Education in Nursing and Medical Students Globally. Scoping review

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Formation in Interprofessional Education in Nursing and Medical Students Globally. Scoping review

Abstract

Objective. This work sought to know the state of the art related to the theme of Interprofessional Education (IPE) in the training of Nursing and Medical students and the level of evidence developed thus far. **Methods.** This was an exploratory systematic review, declared as scoping review by the Joanna Briggs Institute, JBI, in which a search was performed in Embase, Science direct, Pubmed-Medline, Academic search complete, BVS, Scopus and ERIC databases, limiting between 2009 - 2019 by using the DeCS and MeSH terms of Interprofessional education, education research, healthcare professionals, nursing and medicine, selecting 39 original articles after carrying out the review process with the criteria by the JBI. **Results.** Four thematic nuclei emerged: Experiences and perceptions of interprofessional learning, Didactics related with IPE, Empirical indicators related with IPE,

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and Development of professional skills. The highest level of evidence is presented by the articles dealing with didactics; on the contrary, no articles were found that dealt with topics related with early inclusion of IPE in the medical and nursing curricula, which are currently necessary to complement the focus of patient-centered care. **Conclusion.** The thematic nuclei show that the level of evidence in the literature is varied, although mostly descriptive in scope, highlighting the development of professional skills as a result of interprofessional education.

Descriptors: interprofessional education; education, nursing; education, medical; students, nursing; medical students, medical; curriculum; review.

La formación en educación interprofesional en estudiantes de enfermería y medicina en el mundo. Scoping review

Resumen

Objetivo. Conocer el estado del arte, relacionado con la temática de Educación Interprofesional (EIP) en la formación de estudiantes de enfermería y medicina, y el nivel de evidencia desarrollado hasta el momento. **Métodos.** Revisión Sistemática exploratoria, declarada como *Scoping review* por la Joanna Briggs Institute -JBI-, en la que se realizó una búsqueda en bases de datos de Embase, Science direct, Pubmed-Medline, Academic search complete, BVS, Scopus y ERIC, entre 2009-2019 utilizando los términos DeCS y MeSH de *Interprofessional education, education research, healthcare professionals, nursing* y *medicine*. Se seleccionaron 39 artículos originales luego del proceso de crítica con los criterios de JBI. **Resultados.** Emergieron cuatro núcleos temáticos: Experiencias y percepciones del aprendizaje interprofesional, Didácticas vinculadas a la EIP, Indicadores empíricos relacionados con la EIP y Desarrollo de competencias profesionales. El mayor nivel de evidencia lo presentan los artículos sobre empleo de didácticas; por el contrario, no se encontraron artículos que trataran temáticas relacionadas con la inclusión temprana de EIP en los currículos de enfermería y medicina, pues son actualmente necesarios para complementar el enfoque de atención centrada en el paciente. **Conclusión.** Los núcleos temáticos muestran que el nivel de evidencia de la literatura es variado, aunque en su mayoría de alcance descriptivo, lo que

resalta el desarrollo de competencias profesionales como resultado de la educación interprofesional.

Descriptores: educación interprofesional; educación en enfermería; educación médica; estudiantes de enfermería; estudiantes de medicina; curriculum; revisión.

A formação em educação interprofissional em estudantes de enfermagem e medicina no mundo. Scoping review

Resumo

Objetivo. Conhecer o estado da arte, relacionado com a temática de Educação Interprofissional (EIP) na formação de estudantes de enfermagem e medicina, e o nível de evidência desenvolvido até o momento. **Métodos.** Revisão Sistemática exploratória, declarada como Scoping review pela Joanna Briggs Institute -JBI-, na qual se realizou uma busca em bases de dados de Embase, Science direct, Pubmed-Medline, Academic search complete, BVS, Scopus e ERIC, limitando entre 2009-2019 utilizando os termos DeCS e MeSH de *Interprofessional education, education research, healthcare professionals, nursing and medicine*. Se selecionaram 39 artigos originais após de realizado o processo de crítica com os critérios de JBI. **Resultados.** Emergiram quatro núcleos temáticos: Experiências e percepções da aprendizagem interprofissional, Didáticas vinculadas à EIP, Indicadores empíricos relacionados com a EIP e Desenvolvimento de competências profissionais. O maior nível de evidência o apresentam os artigos sobre emprego de didáticas; pelo contrário, não se encontraram artigos que trataram temáticas relacionadas com a inclusão precoce de EIP nos currículos de enfermagem e medicina, sendo atualmente necessários para complementar o enfoque de atenção centrada no paciente. **Conclusão.** Os núcleos temáticos mostram que o nível de evidência da literatura é variado, embora na sua maioria de alcance descritivo, ressaltando o desenvolvimento de competências profissionais como resultado da educação interprofissional.

Descritores: educação interprofissional; educação em enfermagem; educação médica; estudantes de enfermagem; estudantes de medicina; currículo; revisão.

Introduction

One of the ways to respond to the *Millennium Development Goals* with respect to universal health is related with guaranteeing the formation of competent professionals, who are focused on responding to the needs of the people through collaborative work among the different health disciplines; however, this conception tends to be removed from reality in global health systems, where confrontations among professionals play a harmful role for users. This is how interprofessional education (IPE) emerges as a response to this problem, as a teaching and learning approach that joins students from two or more professions to learn about their roles,[1,2] in which they learn with, learn of, and learn about each other to improve collaboration and the quality of health care.[3]

As presented, one of the principal problems to which interprofessional education responds is the definition of roles among health professionals, especially between physicians and nurses; this has been considered a constant problem in the clinical setting in which a thin line exists between what each one can do and can cause confusion in the roles. According with the Theory of Roles,[4] the role is a set of prescriptions that define the behavior of a group member in a given position within the group; however, when students are not in contact during their formation with other disciplines with which they will work, it is difficult for them to manage to identify the extent of their tasks or define which these are.

According with a systematic review by Reeves *et al.,*[5] IPE seeks to improve collaboration among distinct types of health professionals and from social care, premise that is based on 15 studies reviewed, which assessed the effectiveness of IPE interventions, evidencing positive results regarding patient satisfaction, conduct of the collaborating team, and diminished rates of clinical errors in the service teams. The evidence from the reviews found[5,6] are aimed exclusively at the impact of interventions, added to their focus being given within the context of collaborative practices, making it necessary to inquire if during the period of university formation, and within the curricula of Nursing and Medical programs, these incorporate strategies to promote IPE.[7] Consequently, the review proposed develops more broadly the topic of this theme, not only focusing on interventions but on the experiences provided by this education and the skills that can be improved with it.

To develop IPE, we must consider methodologies that permit students to be active, interactive, reflexive, and be centered on the patient. These methods may be used to create opportunities, to compare and contrast the functions and responsibilities, power and authority, ethics and codes of practices, knowledge and skills; to establish effective relations and develop and reinforce aptitudes for collaborative practice.[8,9] Having described its importance in professional formation, it is imperative to know the state of

the art related with the theme of interprofessional education (IPE) on the formation of students from the Nursing and Medical careers and the level of evidence developed until now, thus, determining the contributions and knowledge gaps present in the literature.

Methods

Descriptive Scoping Review[10] which sought to answer the questions: What is the current state of scientific knowledge of the IPE phenomenon in Nursing and Medicine? What is the evidence of its applicability, benefits, and limitations? What are the research gaps on this theme? The search was performed in the Embase, Science direct, Pubmed, Medline, Academic search complete, BVS, Scopus, and ERIC databases in English, Spanish, and Portuguese, limited to between 2009 and 2019, with this time range being adequate to encompass the evolution and current status of the theme, which is relatively novel in Latin America. The study used DeCS and MeSH terms of interprofessional education, education research, healthcare professionals, nursing and medicine, performing the search with equations using AND and OR Boolean operators. Although the context of this review is found globally, for effects of the search, in some of the databases the information was filtered by Latin America, North America, Europe, Asia, Africa and Oceania, which permits recognizing the places in the world where the IPE theme is more or less developed.

The inclusion criteria for this review considered original articles, which present data from research results available in full text, which included subjects like professors and/or Nursing and Medical students. The study excluded texts and theses due to their length and because they address the theme of education without being specific on the interprofessional. It also excluded reflexion articles because they do not contribute concrete and specific results, which could be classified within the levels of evidence provided by the JBI[11] and review articles because contribute secondary sources of information and contain interpretations by the authors about the primary sources, which for this review, are not relevant. The search and selection strategy of articles is detailed in Figure 1, which has been adapted from the PRISMA flowchart for Scoping Review.[12]

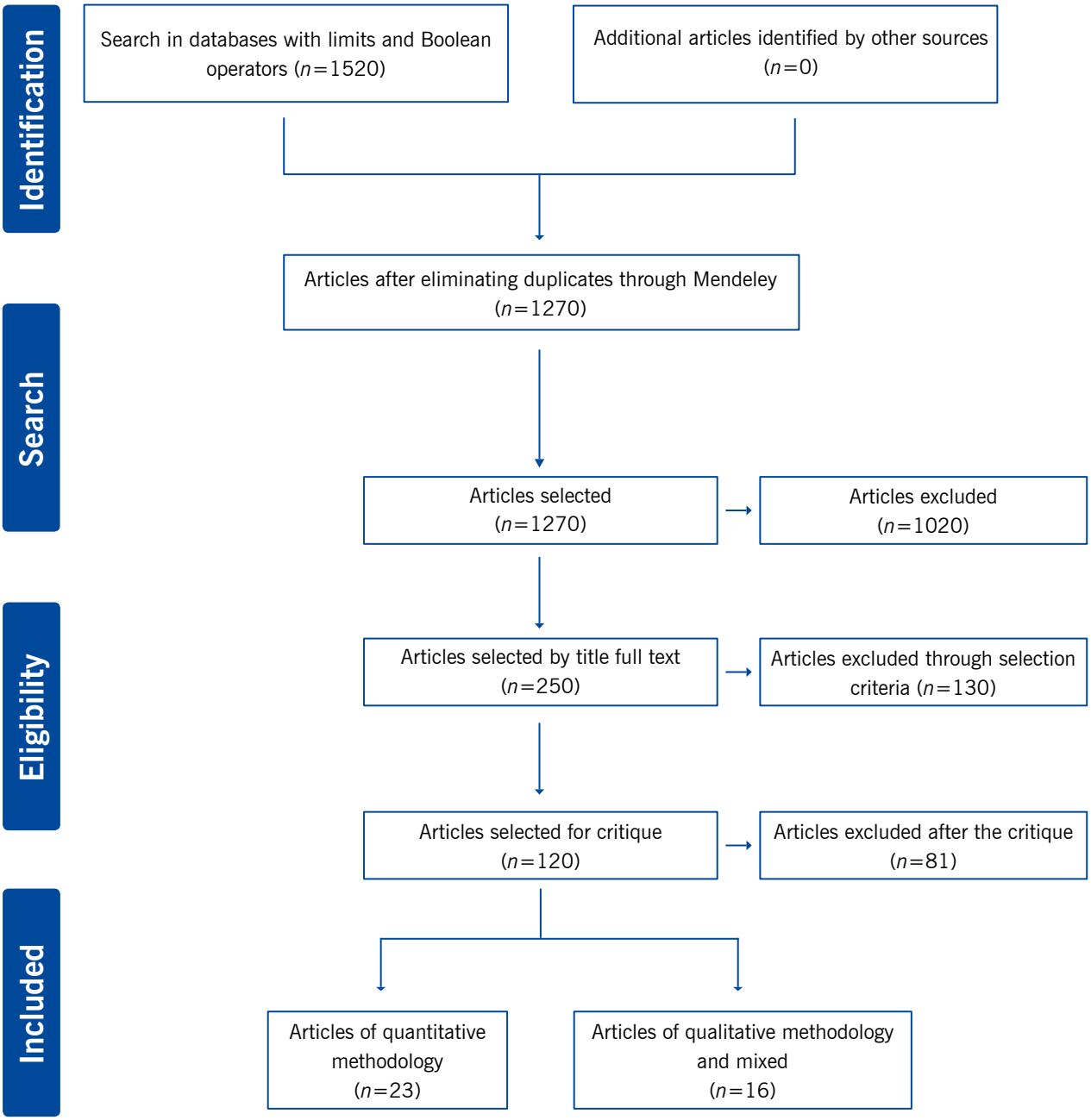

Figure 1. Flow diagram of the article search and selection strategy

For information analysis, the articles were collected in the Microsoft Excel program, where a matrix was created with their critique and analysis. To conduct the critique of the quality of the articles, the rigor criteria were used in the research, bearing in mind their approach. For qualitative studies, the review applied criteria by Guba[13] of credibility, transferability, dependence, and confirmability. Quantitative studies used criteria of internal, external, construct, and statistical validity.[14]

Regarding the analysis of theme addressed in the articles, development of the matrix defined as variables to consider the research approach, study design, data collection manner, analysis used, their principal results, and the conclusions; then, with this information condensed, the work followed the steps exposed by Peters *et al.*,[10] which include question, objective, inclusion criteria, participants, principal concept, context, search and selection of articles, extraction and classification of results and discussion.

Results

The bibliographic search led to the selection of 120 original articles, which after the critique excluded 81 of them, 45 quantitative studies which mostly had faults in their internal validity; 25 qualitative studies that did not clarify the confirmability of the data or the reflexivity in the research process and 11 mixed studies due to declaring this methodology without evidencing its integration in the results. In the end, 39 original articles were analyzed, having as criteria their thematic and/or methodological affinity, thereby, deriving into four thematic groups: Experiences and perceptions of interprofessional learning, Didactics linked to IPE, Empirical indicators related with IPE, and Development of professional skills. With respect to the methodological distribution of the articles after their integration in the principal concepts, Table 1 shows that the concept most approached was the development of professional skills by 36%. The predominant methodological approach was qualitative research by 28.2% of the total analyzed and development of psychometric research with 12.8%.

Table 1. Distribution of 39 articles reviewed according to the methodology employed and the principal concept approached

Concepts	Experimental methodological approach				Mixed *n* (%)	Total *n* (%)
	Qualitative *n* (%)	Non-experimental *n* (%)	Quantitative *n* (%)	Psychometric *n* (%)		
Development of professional skills	3 (7.7)	4 (10.3)	4 (10.3)	0	3 (7.7)	14 (35.9)
Didactics linked to IPE	2 (5.1)	2 (5.1)	6 (15.4)	0	1 (2.6)	11 (28.2)
Experiences and perceptions of interprofessional learning	6 (15.4)	2 (5.1)	0	0	1 (2.6)	9 (23.1)
Empirical indicators related with IPE	0	0	0	5 (12.8)	0	5 (12.8)
Total	11 (28.2)	8 (20.5)	10 (25.6)	5 (12.8)	5 (12.8)	39 (100)

With respect to their geographic location, 61.5% of the articles are from North America, comprising the United States and Canada. Two articles were identified in Latin America and none in Africa. Table 2 shows, not only how limited IPE research is in Latin America, but the progress in design and implementation of interprofessional formation programs in Nursing and Medicine taking place in the United States and Europe.

Table 2. Articles located by geographic location

Location	Countries reporting	Number (%)
North America	The United States (n = 21) and Canada (n = 3)	24 (61.5)
Latin America	Chile (n = 2)	2 (5.1)
Europe	Spain (n = 3), United Kingdom (n = 1), Germany (n = 2), Serbia (n = 1), Bosnia and Herzegovina (n = 1).	8 (20.5)
Asia	Japan (n = 1), Lebanon (n = 1), and Saudi Arabia (n = 1)	3 (7.7)
Oceania	Australia (n = 2)	2 (5.1)

Besides the contributions found in each of the articles reviewed, which will be presented in the discussion, the work presents the levels of evidence according with the JBI[11] and the research gaps according with each thematic category.

Discussion

The following presents the discussion among the relevant findings of the emerging themes in this review, levels of evidence, and explicit gaps.

Development of professional skills (n=14)

Contributions found

Research on IPE has demonstrated that it favors the development of professional skills, framed within knowledge, skills, and attitudes that permit optimizing interpersonal relationships with colleagues, peers, and users, besides recognizing their shared and autonomous roles and of supporting the capacity to make shared decisions. Initially, on addressing the preparation of students upon IPE, Judge *et al.,*[15] proposed a quasi-experimental study to evaluate the response capacity against IPE through cases that had to be solved by students from odontology, medicine, nursing, pharmacy, dietetics, and physical therapy. These authors concluded that the average score in the Scale of preparation for interprofessional learning in nursing, after the intervention, was higher compared with other disciplines.

Now, on approaching the professional skills developed with IPE, we approach the perception of students and its measurement with valid instruments; thus, from this qualitative approach diverse authors gathered from the students that the knowledge and skills they developed most were related with the capacity for reflexion, communication, identification of their role and that of the other, construction of team relationships, collaboration, and mediation to make decisions, to provide patient-centered quality care.[16,17] Other studies have described that when students from the health sciences learn and work in interprofessional teams, they obtain greater clarity of their role and ability to plan tasks than when they are in intra-professional teams, added to the positive impact this has on the sensitization on the role of other professions.[18,19]

Moreover, the interventions conducted based on didactics around IPE evidenced promotion in the

development of skills related with communication, teamwork, conflict resolution, decision making, roles and attitudes on care by the interprofessional team.[20-22] For Baker and Durham,[20] elaborating an IPE course permitted improving collaboration, conflict resolution, and communication among students from medicine, nursing, and pharmacy; aspects also indicated by Castillo Parra *et al.,*[23] emphasizing on the construction of new knowledge with collective learning. Other authors who used simulation for interprofessional learning described that their participants changed their preconceived ideas on physician, nursing, and pharmaceutical professionals.[21]

In a more practical level, a program was designed consisting of interviews of patients, followed by a team meeting to develop an integral care plan. Statistically, no significant changes were noted on the attitudes, but the comments from the focal groups highlighted the value of collaboration among health professions and the potential benefit of participating more than once to obtain longer lasting experience with a patient and have additional exposure to work as interprofessional team.[22] It is also highlighted that IPE on the care of individuals with chronic diseases, like diabetes, where physiopathological knowledge is transversal in medicine and nursing, permits development of clinical skills.[24] From the perspective of bioethics in the practice of health sciences, diverse studies found[25-27] managed to support that under IPE development is achieved of this vision of ethics and values in students added to the practice and interdisciplinary teamwork. Thereby, it is recognized that at curricular level the programs of health sciences have tried to wage on IPE as a way of enhancing professional collaboration, identifying the role to perform, and developing transversal values for the care of patients, in addition to the joint commitment to maintain knowledge updated to benefit the users, that is, application of evidence-based practice but interprofessional.[26] In this same sense, the study by Harper Boland *et al*.,[25] determined that with IPE students improved their skills for teamwork (p value of the pre and post difference <0.001) and their level of trust on themselves and on others, added to the students expressing greater comprehension of the differences in the values and ethics of the multiple professions, which generated increased recognition and respect for the differences within the work carried out by each profession.

Finally, the study by González *et al*.,[28] evaluates the impact of IPE in developing skills inherent to this learning, such as communication, role definition, teamwork, and decision making, finding a positive effect in the students' self-perceptions, especially with interprofessional communication, in the dimensions of oral expression, active listening, and conflict management ($p = 0.018$; $p = 0.018$; $p = 0.036$ and $p<0.001$, respectively), revealing that this type of education helps future health professionals to center on caring for people and not on the exclusivity of their roles.

The evidence collected shows that the skills developed most were role definition and teamwork aimed at the care of patients being safe and humanized, supporting the idea that the implementation of IPE in undergraduate health sciences curricula prepares students for collaborative practice, becoming the opportunity to learn from each other; however, consensus must exist and the political will of the Faculties and Deanships to include the work with other professions within their study programs.

Levels of evidence

Of the articles analyzed in this thematic, six are in a level of significance of which three are in level 2[22,23,25] because they are studies of mixed methodology and the rest in level 3[16,17,26] because they are qualitative studies. With respect to the level of effectiveness, eight articles are presented, of which four correspond to level 2C[15,18,21,28] because of their quasi-experimental designs; one article in level 3E[24] due to being a study without control group and three articles with level

4B[19,20,27] because of being investigations with cross-sectional design.

Explicit gaps

Of the articles analyzed on this thematic, some gaps are derived that guide to research in professional skills within IPE, such as:

- Describe the development of professional skills framed within interpersonal aspects and of critical judgment in the practice.
- Identify the influence of collaborative work on the development of specific professional skills in care and community areas.
- Develop educational programs to promote learning of interpersonal skills and collaborative work.

Didactics linked to IPE (*n*=11)

Contributions found

With respect to the concept of didactics, diverse results are noted on the description and development of pedagogic strategies; thus, predominating the use of standardized simulation and role play, which are evaluated positively, given that they permit acquiring skills to develop necessary skills to provide better care. Also, the use of other specific collaboration strategies with students and professionals in clinical settings, like using TeamStepps and Aspire model have permitted improving the quality and safety of care, strengthening health teams. Currently, evidence exists of new strategies, like using e–learning that has had favorable results. The active methodologies used in IPE generate a positive learning experience of soft skills perceived by students in health careers. They have reported that it helps them to develop skills to clarify roles, use democratic and horizontal models in decision making, and interprofessional communication based on respect/trust, generating greater awareness as a result of the interactive and dialogical nature of the didactics and by having an academic from communications.[29,30]

Interprofessional education in complex scenarios of high-fidelity simulation and problem-based learning with experience practice permits students to improve not only communication, but also the trust from patients in an interprofessional team, achieving that established in the study plans.[31,32] Among the basic recommendations to apply simulation, there is the suggestion of selecting adequate criteria for self-appraisal and coordination in administrative aspects; planning must include the development of teaching materials and supply of efficient technical equipment.[33] From a real professional scenario in clinical units, continuous training of the health staff is quite common, focused on generating quality and safety environments, and using diverse didactics. Two experiences, use of TeamStepps and ASPIRE model, experienced by professionals and graduate nursing students, medicine and other health careers, has evidenced positive results after sessions of interprofessional collaboration through workshops, discussions with experts, and simulations. The participants presented improvement in team structure, communication skills, leadership, situation monitoring, and mutual support.[9,34]

Among the strategies most often used in IPE, there is simulation; findings of the experiences with this type of didactic have resulted favorable. Upon evaluating the perception in the socialization and interprofessional assessment (91 students from nursing, medicine, and pharmacy), statistically significant improvements were evidenced; 92% enjoyed the interaction opportunity and 81% report that it sharpens their awareness of the roles other disciplines perform in the delivery of care.[35] Similarly, in another experience, 329 students from health professions, under the same simulation didactic, 90% was very much in agreement with the advantages and benefits of this and 60% stated that the sessions would change their professional behavior.[36]

Another experience that evaluated communication skills, exchange of information, and interaction of teamwork with 166 students from health careers, through a pre- and post-test of the

interprofessional simulation, evidenced no statistically significant differences, but the participants considered the experience valuable and declared that the observations by professors and standardized patients were very useful in their professional growth.[37] However, simulation is not foreign to some limitations and barriers in the experiences, having difficulties, like in the programming schedules, funding, and staffing.[36,37] Regarding ICT, IPE learning strategies were compared on knowledge, skills, and teamwork attitudes; for mixed learning (classroom plus e-learning) versus virtual learning (e-learning). Both groups reported significant increase in teamwork skills, but not in communication and conflict resolution; nevertheless, the mixed-learning cohort reported improvement in the domains of attitude, while the virtual-learning cohort reported improved leadership.[38]

Simulation is an excellent learning strategy because it provokes a positive impact by being a strategy that generates benefits in the development of soft skills. It is important to recognize the benefits offered by this didactic, which is why it may be worth to incorporate it to curricular plans in Nursing and Medicine careers. Other didactics that support and permit overcoming barriers must be considered, like using virtual sessions of which more research is warranted.

Levels of evidence

As per the level of evidence in this thematic, eight articles have a level of effectiveness, represented by six quasi-experimental studies classified in level 2C[9,34,38] and two articles with cross-sectional design placing them in level 4B.[31,32] Regarding level of significance, there are three articles of which one is in level 2[33] due to its mixed methodology and the other two in level 3[29,30] for being qualitative studies.

Explicit gaps

The gaps derived from the analysis of articles about this theme are aimed at aspects of IPE, such as:

- Implement and test different didactic strategies that have been developed and evaluated as effective.
- Describe the experiences of professors and students on the use of didactics, like standardized simulation, role play, and e–learning in IPE.
- Evaluate the impact of implementing these didactics within formation curricula of health programs.

Experiences and perceptions of interprofessional learning (*n*=9)

Contributions found

With respect to the experiences of students from diverse health professions regarding IPE, satisfaction exists on their participation in collaborative activities, added to the fact of knowing the emotional experience and roles of each one in the health team is important to achieve practices focused on teamwork. Additionally, these instances permit identifying benefits, facilitating aspects, as well as barriers and/or factors affecting their development.

In interprofessional learning, individuals cannot simply come together in situations to learn to work together, rapport must be developed through interpersonal skills, given that said relationship has the potential to break down some of the stereotypical perceptions professionals have among themselves, making it easier and natural for them to work together.[39] To achieve the aforementioned, recognition of emotions gains relevance; thus, interprofessional activities in diverse settings generated similar emotions in students, who considered that identifying blind spots of their own role and borrowing the co-worker's lens to comprehend what they do and experience, promotes convergence into a shared vision on caring for the users.[40]

Identifying the professional role becomes a central element as a result of IPE, given that by reflecting on their collaborative learning students recognize

a change in preconceived authoritarian ideas about themselves and on the recognition of the roles of other professions.[41,42] However, students also reported that collaboration in IPE was seen as something secondary to principal learning.[43] From the aforementioned, the presence of aspects that affect the IPE can be deduced. In this regard, leadership, working together, and a common setting for work groups are recognized as facilitating aspects, achieving as benefits better care for the user; development of optimal interprofessional relationships, and work satisfaction. Learning was hindered by inadequate staffing, productivity pressure, and programming challenges, considering this last element the principal negative factor. Barriers included leadership with hierarchical approaches, poor communication, and lack of knowledge of roles.[44,45]

In an IPE experience with 704 medical and nursing students in primary health care (PHC), perception regarding interprofessional work and interdependence evidences that 98% consider that interprofessional work is important, with women being most critical on the level of importance on teamwork ($p < 0.01$), along with being more demanding in considering it essential in PHC ($p = 0.035$).[46] In relation with the attitudes of educators with respect to an IPE experience, professors who had participated in IPE reported higher intention to participate or continue participating than professors without experience in such. The combination of the disposition perceived by administrators and attitudes toward IPE was the best predictor of the intention to participate in IPE, although no significant differences were detected among the groups of professors with respect to these attitudes.[47]

The importance of knowing these experiences and perceptions on IPE for the curricula of health programs implies incorporating these types of instances in Nursing and Medicine, given that student-centered educational programs may be favored by using IPE, where students are able to channel their emotions together, favoring their regulation among peers. Finally, today, IPE opens undoubtedly a gap that can be analyzed from the gender perspective, of how women visualize comprehensiveness and teamwork as a transcendental factor in their formation.

Levels of evidence

The level of evidence in this thematic is predominantly significant, with seven articles, of which one is in level 2[42] for being of mixed methodology and the other six in level 3[39,41,43,45] due to being qualitative studies. Only two articles had a level of effectiveness in 4B[46,47] due to being cross-sectional correlational descriptive studies.

Explicit gaps

For this theme, the articles have derived gaps focused on the perceptions and descriptions of the development of IPE, such as:

- Recognize and identify one's and the other's professional.
- Integrate IPE early in the curricula of health programs.
- Understand the positive and negative aspects of IPE as improvement opportunities.
- Know the perception of subjects of care on the effect or impact of IPE on health professionals.

Empirical indicators related with IPE ($n=5$)

Contributions found

Empirical indicators refer to processes measuring the IPE phenomenon, hence, the measurement instruments will be described, considering that the literature reports that these have been aimed at evaluating preparation processes in interprofessional learning, interprofessional collaboration, attitudes toward IPE, and the results this can have on the practice. Beginning with the preparation Scale for interprofessional learning, Serbian authors made their process of adaptation and validation.[48] This instrument was designed in 1999 by Parsell and Bligh[49]

to evaluate results expected from collaborative learning in medical students; it is comprised of three factors with 19 items measuring teamwork and collaboration, professional identity, and professional roles. For the Serbian adaptation and validation of this scale, it was determined that the exploratory factor analysis with 19 items revealed two factors representing 51.1% of the total variance with internal reliability $\alpha = 0.90$.[48]

Moreover, Iverson *et al*.,[50] designed and validated an instrument to assess interprofessional learning and the results it can have on the practice. Thus, these authors, through the literature and a panel of experts identified four basic aspects to consider within the instrument: values and ethics; roles and responsibilities; interprofessional communication; and teamwork. From there, 26 items were conformed, evaluating the skill with dichotomy scale, which do not have construct validity, but in its face validity, the instrument had inter-evaluator scores ≥ 0.78 and content validity was = 0.93, considered acceptable. Retaking the thematic of ethics and professional values mentioned, a scale was designed to identify bioethical aspects shared by diverse deontological codes of the health professions. With the values identified, a Likert-type survey of attitudes was designed, which requested your giving value to your estimated ethics of each of the values in relation to your profession. Reliability was tested through Cronbach's alpha, obtaining a score of 0.905; however, the authors do not report other statistical tests to validate this instrument.[51]

Continuing with that referring to the disposition for interprofessional learning, a 27-item instrument was created from the literature to measure attitudes toward interprofessional collaboration in students and health professionals, denominated Jefferson Scale of Attitudes toward Interprofessional Collaboration (JeffSATIC). From the factor analysis performed for the construct validity, two factors emerge: working relationships and responsibility, which through Bartlett's sphericity test represents 51% of the total variance; against confidentiality, Cronbach's alpha was 0.80.[52]

Lastly, an instrument was identified to measure skills derived from interprofessional education; this was developed by authors from the United States to evaluate results related with the collaborative practice at undergraduate level. Based on a document published on the theme, they created a 42-item questionnaire applied to 481 participants for its validation. Four factors were defined: teamwork; values and ethics; interprofessional communication; and roles and responsibilities, thus, the factor analysis demonstrated that the instrument explains 79% of the variance. Each component showed a high degree of internal consistency with Cronbach's alpha ranging from 0.96 to 0.98.[53]

From these empirical indicators described, it may be concluded that greater progress is still needed to measure aspects or dimensions related with IPE, especially on the thematic of professional skills shared by health professionals, added to patients' perceptions of care from interdisciplinary teams. The instruments described are tools that must be adapted and validated to the context so they can be used in suitable manner.

Levels of evidence

The construction and validation of scales and instruments represent the progress of knowledge toward empirical indicators that permit measuring the IPE phenomenon in concrete and tangible manner; however, due to the psychometric approach, where validity and reliability results are obtained, no evidence is produced as such that should be classified in the JBI levels.

Explicit gaps

For this theme, the research gap is more methodological tan thematic, which is why it is necessary to conduct psychometric research that construct and validate instruments that measure skills in integral and scale manner regarding skills, knowledge, attitudes, and organizational environment to measure the impact of IPE on health professionals.

Finally, knowing the role of another health professional facilitates performance in relation with the limits of action and that influences undoubtedly on the leadership future nursing or medicine professionals will assume in a given situation, where recognition of what others do favors communication; thus, IPE experiences are an opportunity for students to learn. It is suggested to include this methodology in the Nursing and Medical curricula if a true effect is expected on the change of stereotypes from the other professions.

Among the limitations of this review, we have that due to this being an exploratory review, it was not possible to fully guarantee that it was systematic and was not focused on a methodology of specific studies, added to the selection bias, which excluded articles beyond the range of time established for the search and documents, like theses or degree works that could have contributed more information to the IPE thematic.

It can be concluded that the state of the art related with the interprofessional theme on the formation of nursing and medical students globally proved varied, although most of the productions were of descriptive scope. Four thematic groups are highlighted therein: Experiences and perceptions del interprofessional learning, Didactics linked to IPE, Empirical indicators related with IPE, and Development of professional skills, with the thematic of didactics having the greatest progress, with presence of experimental studies that demonstrated the effectiveness of simulation activities and e-learning to develop knowledge and skills that lead to interprofessional learning, with these coming mostly from North America and Europe, where the highest scientific production has been reached in this theme.

Research gaps primarily concentrate in demonstrating the importance of early integration of IPE in the curricular syllabus of the Nursing and Medicine careers; evaluating the different types of IPE didactics within the formation curricula of health programs and identifying the influence of collaborative work on the development of professional skills, especially interpersonal skills. It is relevant to know the perception of patients on the impact of IPE on their care and identify the influence of collaborative work on the development of professional skills, as well as on the perception of the faculty body involved in teaching interpersonal skills through interprofessional education.

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Original article

The interactive effect of preoperative consultation and operating room admission by a counselor on anxiety level and vital signs in patients undergoing Coronary Artery Bypass Grafting surgery. A clinical trial study

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The interactive effect of preoperative consultation and operating room admission by a counselor on anxiety level and vital signs in Coronary Artery Bypass Grafting. A clinical trial study

Abstract

Objective. The purpose of this study was to provide appropriate preoperative supportive conditions to improve anxiety and vital signs for patients undergoing Coronary Artery Bypass Grafting -CABG- surgery. **Methods.** This clinical trial study was performed on 90 patients undergoing CABG surgery in Farshchian Hospital of Hamadan, Iran in 2019. Sample was selected by convenience and were randomly divided into three groups: control (n=30), intervention1 (n=30), and intervention2 (n=30). The control group received only the routine preoperative counseling of ward and admitted to the operating room as usual; the intervention1 and intervention2 groups in addition received another two counseling sessions, then the intervention1 group was admitted in the operating room

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as usual, but the intervention2 group was admitted by the counselor in the operating room. Data were collected using a three-part questionnaire including demographic characteristics, vital signs chart, and the Spielberger's State-Trait Anxiety Inventory. **Results.** The results showed that there was a significant difference in the mean anxiety of the three groups after admission in the operating room (intervention2 was lower than intervention1 and control groups, $p<0.001$; and intervention 1 group was lower than control group, $p<0.001$) and also there was a significant difference between the mean systolic blood pressure, heart rate and respiratory rate of the three groups ($p<0.001$) but the mean of the variables of temperature and diastolic blood pressure in the three groups were not significantly different ($p=0.59$ and $p=0.225$, respectively). **Conclusion.** Our results revealed preoperative consultation and admission in the operating room by the consultant can reduce the level of anxiety and stability of vital signs of patients undergoing CABG.

Descriptors: coronary artery bypass; respiratory rate; blood pressure; temperature; heart rate; operating rooms; counselors; anxiety; control groups.

El efecto interactivo de la consulta preoperatoria y la admisión al quirófano por parte de un consejero sobre el nivel de ansiedad y los signos vitales en pacientes de cirugía por injerto de derivación de la arteria coronaria. Ensayo clínico

Resumen

Objetivo. Evaluar si las condiciones de apoyo preoperatorias mejoran la ansiedad y los signos vitales para los pacientes sometidos a cirugía de bypass de arterias coronarias (CABG por sus siglas en inglés). **Métodos.** Este estudio clínico se realizó en 90 pacientes sometidos a cirugía de revascularización coronaria -CABG- en el Hospital Farshchian de Hamadan en Irán. La muestra se seleccionó por conveniencia y se dividió aleatoriamente en tres grupos: control ($n=30$), intervención1 ($n=30$) e intervención2 ($n=30$). El grupo de control recibió solamente la consejería preoperatoria de rutina cuando ingresó a hospitalización y en el momento de admisión en la sala de cirugía; los grupos de intervención1 e intervención2 además de la consejería rutina recibieron otra sesión adicional; y cuando se admitió el grupo de intervención2 en la sala de operaciones, lo acompañó la misma persona que hizo la consejería. Los datos se recopilaron mediante un cuestionario de tres partes que incluyó características demográficas, un cuadro de signos vitales y los puntajes del *State-Trait Anxiety Inventory de Spielberger*. **Resultados.** Los hallazgos mostraron que hubo diferencia significativa en el puntaje de ansiedad de los tres grupos después de la admisión en la sala cirugía (en intervención2 fue menor que en los grupos intervención1 y control, $p<0.001$; y en el grupo de intervención1 fue menor que en el grupo de control, $p<0.001$). También se encontraron diferencias estadísticamente significantes para las diferencias en la presión arterial sistólica, la frecuencia cardíaca y la frecuencia respiratoria de los tres grupos, pero no para las variables de temperatura y presión arterial diastólica ($p=0.59$ y $p=0.225$,

respectivamente). **Conclusión**. Nuestros resultados revelaron que la consulta preoperatoria y la admisión en el quirófano por parte del consultor pueden reducir el nivel de ansiedad y la estabilidad de los signos vitales de los pacientes sometidos a CABG.

Descriptores: puente de arteria coronaria; frecuencia respiratoria; presión sanguínea; temperatura; frecuencia cardíaca; quirófanos; consejeros; ansiedad; grupos control.

O efeito interativo da consulta pré-operatória e a admissão à sala de cirurgia por parte de um conselheiro sobre o nível de ansiedade e os signos vitais em pacientes de cirurgia por enxerto de derivação da artéria coronária. Ensaio clínico

Resumo

Objetivo. O propósito deste estudo foi avaliar se as condições de apoio pré-operatórias melhoram a ansiedade e os signos vitais para os pacientes submetidos a cirurgia de bypass de artérias coronárias (CABG por suas siglas em inglês). **Métodos.** Este estudo clínico se realizou em 90 pacientes submetidos a cirurgia de revascularização coronária -CABG- no Hospital Farshchian de Hamadan no Irão. A mostra se selecionou por de conveniência e se dividiu aleatoriamente em três grupos: controle (n=30), intervenção1 (n=30) e intervenção2 (n=30). O grupo de controle recebeu somente o aconselhamento pré-operatória de rotina quando ingressou a hospitalização e no momento de admissão na sala de cirurgia; os grupos de intervenção1 e intervenção2 ademais do aconselhamento de rotina receberam outra sessão adicional; e quando o grupo de intervenção2 foi admitido na sala de operações foi acompanhado pela mesma pessoa que fez o aconselhamento. Os dados se recopilaram mediante um questionário de três partes que incluiu características demográficas, um quadro de signos vitais e as pontuações do State-Trait Anxiety Inventory de Spielberger. **Resultados.** As descobertas mostraram que houve diferença significativa na pontuação de ansiedade dos três grupos depois da admissão na sala cirurgia (em intervenção2 foi menor do que nos grupos intervenção1 e controle, $p<0.001$; e no grupo de intervenção1 foi menor do que no grupo de controle, $p<0.001$). Também se encontrou diferenças estatisticamente significantes para as diferenças na pressão arterial sistólica, a frequência cardíaca e a frequência respiratória dos três grupos, mas não para as variáveis de temperatura e pressão arterial diastólica (p=0.59 e p=0.225, respectivamente). **Conclusão.** Nossos resultados revelaram que a consulta pré-operatória e a admissão na sala de cirurgia por parte do consultor podem reduzir o nível de ansiedade e a estabilidade dos signos vitais dos pacientes submetidos a CABG.

Descritores: ponte de artéria coronária; taxa respiratória; pressão sanguínea; temperatura; frequência cardíaca; salas cirúrgicas; conselheiros; ansiedade; grupos controle.

Introduction

Cardiovascular disease has become a major worldwide problem and is a serious health threat that causes numerous biological, psychological and social problems and is one of the leading causes of death and disability.[1] These diseases also impose a huge cost on the health system of countries.[2] According to the World Health Organization, 17.7 million people died of cardiovascular diseases in 2016, and cardiovascular diseases account for 31% of all global deaths.[3] According to the Global Borden Disease Study Center in Iran, the rate of death from cardiovascular disease has increased from 31.9% in 1990 to 46.8% in a decade,[4] and represent 43% of the total number of deaths.[3] Coronary Artery Bypass Graft (CABG) surgery is one of the most commonly used surgical procedures for patients with coronary artery stenosis.[5] Annually, 30 000 to 40 000 people undergo cardiac surgery, and CABG constitutes 50–60% of these surgeries.[6] One of the frequent problems of patients before the surgery is higher levels of anxiety in this case as compared to that in other surgeries, since heart is closely related to human life and death.[7]

Actually Cardiac surgery is often associated with anxiety and fear in patients undergoing it.[8] Anxiety before cardiac surgery can lead to stimulates the sympathetic system and significant changes in the patient's heart rate and blood pressure,[9,10] elevates the risk of mortality,[11] increases the intraoperative anesthetic requirement and can prolonged recovery.[12] ways to control anxiety include medication and non-medication.[6] Routine use of anxiolytic medications to reduce anxiety in patients with pain can prevent the reporting of pain due to drowsiness, pulmonary complications due to reduce her ability to breathe deeply, get out of bed, or participate in treatment.[7,13] Non-pharmacological approaches such as inhalation aromatherapy,[14] massage therapy,[15] and music therapy,[16] Visitation by Operating Room Staff,[17] and preoperative education programs[18] can help reduce anxiety. Among the measures the nurse can take to minimize anxiety before cardiac surgery, giving information about surgery, promoting acquaintance dialogue, and understanding the patient are more important strategies.[19]

Given that the receptionist in the operating room is one of the last people the patient will be in contact with the patient before surgery, The researcher speculates that if this is a relationship with the patient who was already in touch with the patient, a positive interaction and Having a friendship between them will affect the patient's anxiety and vital signs. According to the researcher, no study has been conducted in this area, so the present study will be conducted to determine the interactive effect of preoperative consultation and patient admission in the operating room by counselor on the level of anxiety and vital signs in coronary artery bypass graft surgery (CABG).

Methods

The present study was a clinical trial study performed at Farshchian Hospital of Hamadan, Iran in April 2019. Using convenience sampling, 90 patients were selected for CABG surgery and were randomly divided into three groups (control, intervention 1 and intervention 2) using random sampling and weekly block method. The inclusion criteria were include the at least 18 years of age; fully conscious and knowledgeable regarding the time, place, and person; having the ability to communicate, not having a history of heart surgery, lacking physical and cognitive disorders; lacking medical education or what was related to it; not having a drug addiction; no prior medical diagnosis of anxiety and depression and not taking tranquilizer, anti-depressants, or anti-anxiety drugs at one month before surgery. The exclusion criteria were the unwillingness of patients to continue the participation in the study and their condition worsening during the study period.

The data collection tool consisted of three parts: personal traits, medical data, and Spielberg state anxiety Inventory. The state of anxiety is the same instantaneous individual anxiety expressing the person's current feeling or emotion at a time period like getting prepared for the surgery. The Spielberg anxiety questionnaire had global validity and reliability. The validity of this test, in order to reach a meaningful result, the mean anxiety for the standard and normal community was compared at 1% and 5% across all age groups, indicating the validity of the measurement of anxiety. The reliability of the Spielberger's State-Trait Anxiety Inventory has been calculated to be 0.90 and 0.86 in the studies by Roohy *et al.* [20] and Safara *et al.,* [21] respectively. In addition, its reliability and validity in the Iranian society cardiac patients was confirmed via the study of Akbarzade *et al*.[22] The questionnaire was made up of 20 multiple choice questions, with the options of "very little, little, a lot, and very much". The minimum score for this questionnaire was 20 and the maximum was 80.

After consenting to the samples at the first visit and before any intervention, the patient completed a three-part questionnaire as a pre-test. The control group received only the routine counseling program that the ward provides for all patients, but intervention 1 and intervention 2 group's in accordance with Table 1 received two one-hour counseling sessions in the day before surgery in addition to the routine counseling program. Counseling sessions were organized individually for each patient by the counselor, counseling sessions were held in the conference room of the ward, and the counselor, the patient and the experienced nurse were present at these sessions. At admission to the operating room, the control group and the intervention group 1 samples were admitted to the operating room according to the routine program of the hospital with a non-consultant in the operating room. But in order to admission Intervention Group 2 patients in operating room, they were accompanied by a consultant and patient transfer team from the ward to the operating room; consultant would admitted the patient in the operating room and perform the tasks performed on the patient's admission in the operating room; while waiting for anesthesia, the consultant stayed with the patient and acted as an emotional support and mentor in the operating room for the patient by benefiting from the positive interaction that was created during the two meetings with the patient. Then before receiving anesthesia, their vital signs and state anxiety were recorded as a post-test.

At the beginning of the counseling program and after introducing herself to the patients and explaining the purpose of the study, the researcher obtained consent from all patients. Also, participants were assured that all information collected from them would remain confidential. Finally, the data resulting from descriptive statistics, independent T-test, analysis of variance, analysis of covariance and ANOVA at the significant level of $p<0.05$. Were analyzed by SPSS V.23.

Table 1. Grouping and scheduling of consultation sessions and interventions

Session	Group	Meeting time	Topics discussed
First session	Intervention1 & Intervention2	The day before surgery at 10 am	Introduce the consultant to the patient - Information about the nature of the disease - Type of disease - Cause of the disease - Cause of surgical diagnosis - Surgical technique - Surgical complications - Anesthesia information - Anesthesia complications
Second session	Intervention1 &Intervention2	The day before surgery at 6 pm	Answering questions about the first session - Providing information about the post-surgical course - Getting to know the patient with ICU - Providing information about self-care at home.

Results

The results of this study showed that the mean age of the control, intervention 1 and intervention 2 groups were 61.9±8.02 years, 62.13±7.04 years, and 65.6±9.3 years, respectively and Mean BMI of the control, intervention 1 and intervention 2 groups were 24±3.2, 25.6±2.4 and 25.6±4 respectively In addition, no significant difference was observed in the age and BMI by the ANOVA test. Most of the patients in these three groups were male (68.9%) and most of the subjects were illiterate (55.6%) and the results of Chi-square test showed no significant difference between the three groups in terms of gender and education (Table 2).

Table 2. Demographic characteristics of the group

Variable		Control	Intervention1	Intervention2	Total	*p*-value
Age		61.9±8.0	62.1±7.0	65.6±9.3	63.2±8.3	0.15
BMI		24±3.2	25.6±2.4	25.6±3.9	25.1±3.3	0.08
Sex	Male	21 (70%)	20 (66.7%)	21 (70%)	62 (68.9%)	0.9
	Female	9 (30%)	10 (33.3%)	9 (30%)	28 (31.9%)	
Education	Illiterate	17 (56.7%)	16 (53.3%)	17(56.7%)	50 (55.6%)	0.6
	Under the diploma	10 (33.3%)	10 (33.3%)	8 (26.7%)	28 (31.1%)	
	Diploma	3 (10%)	4 (13.3%)	3 (10%)	10 (11.1%)	
	Academic	0	0	2 (6.7%)	2 (2.2%)	

One-way covariance analysis test was used to compare the pre-test score of anxiety variables and vital signs. According to the results, the *p*-values in the pre-test of the variables of heart rate, respiratory rate, systolic blood pressure and positional anxiety showed no significant difference between the three groups. But for the variables of temperature and diastolic blood pressure were significant at the 0.05 level (Table 3).

Table 3. Covariance analysis of Pre-test vital signs and situational anxiety

Variable		Sum of squares	DF	Mean squares	F	*p*-value
Heart rate	Between groups	197.1	2	98.5	2.616	0.079
	Within group	3276.5	87	37.6		
	Total	3473.6	89			
Respiratory rate	Between groups	17.1	2	8.5	2.556	0.083
	Within group	291.9	87	3.3		
	Total	309.1	89			
Temperature	Between groups	1.8	2	0.9	6.836	0.002
	Within group	11.5	87	0.1		
	Total	13.4	89			
Systolic blood pressure	Between groups	774.6	2	387.3	2.368	0.100
	Within group	14229.4	87	163.5		
	Total	15004.0	89			
Diastolic blood pressure	Between group	898.5	2	449.3	5.776	0.004
	Within group	6769.0	87	77.8		
	Total	7667.8	89			
Anxiety	Between groups	66.6	2	33.3	0.607	0.547
	Within group	4771.9	87	54.8		
	Total	4838.5	8			

Covariance analysis test revealed that collaboration effect of preoperative counseling and patient admission in operating room by counselor on anxiety, heart rate, respiratory rate and systolic blood pressure has been meaningful, but it was not significant on temperature and diastolic blood pressure (Table 4).

Table 4. Covariance analysis of Post-test vital signs and situational anxiety

Variable		Sum of squares	DF	Mean squares	F	*p*-value
Anxiety	Between group	4525.3	2	2262.7	109.22	0.001
	Within group	1719.4	83	20.7		
	Total	225396.0	87			
Heart rate	Between group	973.5	2	486.7	19.93	0.001
	Within group	2100.0	87	25.4		
	Total	609698.0	89			

Table 4. Covariance analysis of Post-test vital signs and situational anxiety (cont.)

Variable		Sum of squares	DF	Mean squares	F	*p*-value
Respiratory rate	Between group Within group Total	292.0 92.7 29937.0	2 86 90	146.0 1.1	135.43	0.001
Temperature	Between group Within group Total	1.1 99.2 123920.1	2 86 90	0.5 1.2	0.51	0.59
Systolic blood pressure	Between group Within group Total	1383.5 4668.1 1351381.0	2 86 90	691.8 54.3	12.74	0.001
Diastolic blood pressure	Between group Within group Total	38.8 1100.4 482400.0	2 86 90	19.4 19.4	1.52	0.225

In the following, Tukey's post hoc test was used to compare two-way mean anxiety, respiratory rate and systolic blood pressure in the control and intervention groups. Based on the results, there was a significant difference in the level of anxiety between the control group and the intervention group 1 and 2 ($p<0.001$). There was also a significant difference in the level of anxiety between intervention group 1 and intervention 2 ($p<0.001$). accordingly, the mean of anxiety in intervention 2 was lower than the control group and intervention 1 and the mean of anxiety in intervention 1 group was lower than control group (Table 5).between the mean of heart rate in the control group with intervention 1 ($p=0.004$), between the mean of heart rate in the control group with intervention 2 ($p=0.001$) and between the mean of heart rate in the intervention 1 group with intervention 2 ($p=0.002$) there was a significant difference that mean of heart rate in intervention 2 was lower than the control group and intervention 1 and the mean of heart rate in intervention 1 group was lower than control group (Table5).

Between the mean of respiratory rate in the control group with intervention 1 and 2 groups ($p<0.001$) and also between the mean of respiratory rate in the intervention group 1 and intervention 2 group ($p<0.001$) there was a significant difference. It's that the mean of respiratory rate in intervention 2 was lower than the control group and intervention 1. The mean of respiratory rate in intervention 1 group was lower than control group (Table 5). Between the mean of systolic blood pressure in the control group with intervention 1 ($p=0.018$), between the mean of systolic blood pressure in the control group with intervention 2 ($p<0.001$) and between the mean of systolic blood pressure in the intervention 1 group with intervention 2 ($p=0.008$) there was a significant difference that the mean of systolic blood pressure in intervention 2 was lower than the control group and intervention 1 and the mean of systolic blood pressure in intervention 1 group was lower than control group (Table5).

Table 5. Pairwise comparisons

Variable	Type of comparison	Mean difference	Std. error	*p*-value
Anxiety	Control - intervention1	8.0	1.0	<0.001
	Control - intervention2	17.6	1.2	<0.001
	Intervention1- intervention2	9.6	193.1	<0.001
Heart rate	Control - intervention1	3.8	1.3	0.004
	Control - intervention2	8.1	1.2	<0.001
	Intervention1 - intervention2	4.2	1.3	0.002
Respiratory rate	Control - intervention1	1.2	0.3	<0.001
	Control - intervention2	4.3	0.3	<0.001
	Intervention1 - intervention2	3.1	0.3	<0.001
Systolic blood pressure	Control - intervention1	4.6	1.9	0.018
	Control - intervention2	9.8	1.9	<0.001
	Intervention1 - intervention2	5.2	1.9	0.008

Discussion

The results of this study show that there is no significant difference between the pre-test anxiety scores of the three groups, which is in agreement with the results of studies such as Fazlollahpour *et al*.,[23] Amiri *et al.*[24] and Abbasi *et al*.[25] It has also been shown that pre-test three vital signs including systolic blood pressure, heart rate, and respiratory rate were not significantly different between the three groups, which is consistent with the findings of Amiri *et al.*,[24] Abbasi *et al*.[25] and Hemmati *et al.*[26] However, there were significant differences between the two groups in the pre-test of diastolic blood pressure and temperature variables, which is inconsistent with the results of Abbasi and Hemmati's study.[25,26] The results show that there is a significant difference between the mean scores of post-test anxiety of the control group with the intervention group 1 and intervention 2, which Indicates the effectiveness of the preoperative counseling program that this consistent with the studies of Karama *et al*.,[27] Rosiek *et al.*[28] and Timurie *et al*.[6]

The results also show that there is a significant difference between the post-test scores of the two groups of intervention 1 and intervention 2, which indicates the effectiveness of consultant admission in the operating room which no relevant article has been found in relation to this finding to compare the results that this indicating the novelty and importance of this study.

This study showed that there is a significant difference between the three variables of heart rate, respiration and systolic blood pressure in the control group with the intervention group 1 and intervention group 2, which indicates the effectiveness of preoperative counseling on these variables. This is consistent with the findings of the study by Amiri *et al*.,[24] Hasan Genc *et al*.,[29] Degirmen *et al*.,[30] but is inconsistent with the results of the study by García Sierra *et al.*[31] The results also indicate that there is a significant difference in pre-test of these three variables between the two groups of intervention group 1 and intervention group 2 which indicates the effectiveness of consultant admission in the operating room on these variables no study was found to compare these results that this indicating the novelty and importance of this study. But the results of this study showed that comparison of post-test and pre-test two variables of temperature and diastolic blood pressure were

not significantly different in the three groups. This finding is in line with the results of studies such as the García Sierra *et al*.[31] and is inconsistent with the findings of the Zarei *et al.*,[32] and Degirmen *et al.* [30] studies.

Based on the findings, it can be concluded that preoperative consultation and admission in operating room by counselor can reduce the level of anxiety and stability of vital signs in patients. According to the data it can be decided that the admission in operating room by counselor will increase the effectiveness of the surgical consultation, reduce the level of anxiety and stabilize the vital signs of the patients. This approach can be considered as a strength and superiority of the present study than previous studies which suggest that cardiac surgery centers should adopt these results in order to reduce the anxiety and stability of the vital symptoms of patients.

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Meaning of Receiving Artificial Nutritional Support in People in the Postoperative Period of Abdominal Surgery

Original article

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Meaning of Receiving Artificial Nutritional Support in People in the Postoperative Period of Abdominal Surgery

Abstract

Objective. This work sought to describe the meaning of receiving artificial nutritional support in people in the postoperative period of abdominal surgery. **Methods.** This was a qualitative study of grounded theory, following the guidelines by Corbin and Strauss. The information was collected through 26 in-depth interviews with 21 participants, interned in a tier III health care hospital in the city of Tunja, Colombia. **Results.** The study describes four categories, which account for the way in which the person experiences physical, physiological, emotional, and social changes when receiving artificial nutritional support. The categories include stopping eating and becoming artificially fed, decreasing the ability to move to recover movement, experiencing the difficulty of having

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artificial nutritional support, and reaching the disease to transform life. The data analysis shows that the basic surgical pathology and the artificial nutritional support are sudden events that fragment the daily life of the person. These individuals demand the mobilization of religious, family, and social resources to strengthen the person's internal and external environment and, thus, achieve the health situation. **Conclusions.** The analysis of the meanings shows how the person reflects and interprets the reality of receiving artificial nutritional support, an event that has implicit physical discomfort, emotional changes, and physical appearance, which are determinants in the behavior and practice of artificial nutrition. However, artificial nutritional support becomes for the person an alternative to live and recover the state of health.

Descriptors: nutritional support, parenteral nutrition, enteral nutrition, qualitative research, postoperative period.

Significados de recibir soporte nutricional artificial en personas en postoperatorio de cirugía abdominal

Resumen

Objetivo. Describir los significados de recibir soporte nutricional artificial en personas en periodo postoperatorio de cirugía abdominal. **Métodos.** Estudio cualitativo de teoría fundamentada, siguiendo los lineamientos de Corbin y Strauss. La información se recolectó a partir de 26 entrevistas en profundidad a 21 participantes internados en un hospital de tercer nivel de atención en salud de la ciudad de Tunja (Colombia). **Resultados.** El estudio describe cuatro categorías que dan cuenta de la forma en que la persona experimenta cambios físicos, fisiológicos, emocionales y sociales al recibir soporte nutricional artificial en el postoperatorio de cirugía abdominal: dejar de comer y pasar a ser alimentado de manera artificial; disminuyendo la capacidad de moverse hasta recobrar el movimiento; experimentando lo difícil de tener el soporte nutricional artificial, y la enfermedad llega para transformar la vida. La patología quirúrgica de base y el soporte nutrición artificial son eventos súbitos, que fragmentan la vida cotidiana de la persona. En consecuencia, demandan la movilización de recursos religiosos, familiares y sociales para el fortalecimiento del medio interno y externo de la persona y lograr así asumir la situación de salud. **Conclusión.** El análisis de los significados muestra cómo la persona reflexiona e interpreta la realidad de recibir soporte nutricional artificial, evento que tiene

implícito molestias físicas, cambios emocionales y en la apariencia física, los cuales determinan en el comportamiento y prácticas de la persona. El soporte nutricional artificial se convierte para la persona en una alternativa para vivir y recuperar el estado de salud.

Descriptores: apoyo nutricional; nutrición parenteral; nutrición enteral; investigación cualitativa; periodo posoperatorio.

Significados de receber suporte nutricional artificial em pessoas no pós-operatório de cirurgia abdominal

Resumo

Objetivo. Descrever os significados de receber suporte nutricional artificial em pessoas no pós-operatório de cirurgia abdominal. **Métodos** Estudo qualitativo da teoria fundamentada, seguindo as diretrizes de Corbin e Strauss. As informações foram coletadas através de 26 entrevistas em profundidade com 21 participantes, internados em um hospital de terceiro nível para atendimento de saúde na cidade de Tunja (Colômbia). **Resultados** O estudo descreve quatro categorias que explicam a maneira pela qual a pessoa experimenta mudanças físicas, fisiológicas, emocionais e sociais, recebendo apoio nutricional artificial no período pós-operatório de cirurgia abdominal: parar de comer e se alimentar artificialmente, reduzindo a capacidade de se mover para recuperar o movimento, enfrentando a dificuldade de ter suporte nutricional artificial e levar a doença a transformar a vida. A patologia cirúrgica básica e o suporte nutricional artificial são eventos repentinos, que fragmentam o cotidiano da pessoa. Eles exigem a mobilização de recursos religiosos, familiares e sociais para fortalecer o ambiente interno e externo da pessoa e, assim, alcançar a situação de saúde. **Conclusão** A análise dos significados mostra como a pessoa reflete e interpreta a realidade de receber suporte nutricional artificial, um evento que implica desconforto físico implícito, mudanças emocionais e aparência física, determinantes de comportamento e prática diante da nutrição artificial. No entanto, o suporte nutricional artificial torna-se para a pessoa uma alternativa para viver e recuperar o estado de saúde.

Descritores: apoio nutricional; nutrição parenteral; nutrição enteral; pesquisa qualitativa; período pós-operatório.

Introduction

The person in the postoperative period of abdominal surgery may be subjected to drastic changes in the way of being fed due to complications associated with the surgical event, co-morbidities, and torpid evolution of the health status, situations that often require management with artificial nutritional support, as the only way to meet the bodily metabolic demands and prevent hospital malnutrition.[1] In the person with surgery, artificial nutritional support has a positive impact upon stopping catabolism activated by the release of stress hormones and inflammatory mediators;[2] inhibition of this process prevents hospital malnutrition, along with its complications, like bedsores, defective healing, increased incidence of the wound dehiscence, fistulizations, postoperative infections, hypoalbuminemia, generalized involvement of the immune system, and bacterial translocation.[3] Besides, it has been documented to reduce hospital stay, readmission rates, mortality,[4,5] care costs[6] and, lastly, relieves feelings of tiredness or fatigue in the person.[7]

Although the clinical results of artificial nutrition are known, it is necessary to know the experience of the person undergoing this situation, given that studies reveal that food not only serves to feed the body, but also has emotional meaning and social value.[8] In addition, it provides the person pleasure and sensations given by the flavor, consistency, and smell of the food[9], which are lost when having artificial nutritional support. Likewise, health situations, like those experienced by the person with abdominal surgery with artificial nutritional support are considered stressful events, which require being described to, as of knowing the meaning, be able to implement interventions aimed at the patient and facilitate the care process, guiding nursing professionals to have a holistic view of the phenomenon under study and contribute new scientific evidence for patient-centered care and on human needs that go beyond the physical body. However, when conducting the scientific literature review regarding the theme, it is scarce globally, which is why the objective of this study was to describe the meaning of receiving artificial nutritional support in individuals in postoperative period of abdominal surgery.

Methods

This was a qualitative study of grounded theory, following the guidelines by Corbin and Strauss, who denominated it as a theory derived from data collected systematically and analyzed through a research process.[10] It is based on principles of symbolic interactionism. To conduct the study, the researchers did not begin with a preconceived theory, which permits describing and

explaining complex phenomena of the individual's daily experience in natural scenarios;[11] rather, they started from the data obtained from the participants.

Participants were selected through convenience. The principal investigator revised the records of the clinical charts to verify compliance of the inclusion criteria: person hospitalized in postoperative period of abdominal surgery, over 18 years of age and with artificial nutritional support and excluded those diagnosed with cancer, bariatric surgery, and cognitive disorders, as established by the clinical history. Thereafter, the researcher attended the person's unit to explain in clear and detailed manner the study components. Similarly, doubts emerging during information process were cleared. After explaining the study characteristics, the informant candidate was given reasonable time (between 1 and 2 days) to decide whether or not to participate in the research. During this time lapse, the principal investigator maintained contact and performed care actions, which permitted creating and strengthening empathy ties. Theoretical data was obtained from 26 in-depth interviews to 21 participants; five of them had double inquiry during a second moment to delve into the information collected. The interview began with the question: What do you think about having artificial nutritional support or being fed via a catheter and/or venous catheter? The interviews were recorded and stored in a voice recorder. Moreover, the principal investigator registered the memos in the field diary, which were valuable when performing the data analysis, given that the memos provide density and conceptual integration to the research.[10]

It must be clarified that the interviews were conducted in the units (rooms) of the hospitalization service, which have the necessary elements to provide comfort to the person, a characteristic permitted privacy and facilitated expression and communication between the participant and the researcher; the interviews lasted between 35 and 77 min. Finally, the interviews were transcribed, analyzed, and coded, giving way to the four categories that make up the meanings assigned by the person when receiving artificial nutritional support during the postoperative period of abdominal surgery. Theoretical saturation was considered when the information obtained during the interview did not provide new data during coding.[10]

The study was approved by the ethics committee at Universidad de La Sabana and by the tier II level of care health institution, E.S.E Hospital San Rafael in Tunja, Colombia. The person's participation in the study was done in free and autonomous manner, by signing the informed consent. Additionally, the study considered that stipulated in Resolution Nº 008430 of 1993, Article 11, which defines minimum-risk research,[12] given that the interview inquires about sensitive elements that affect the participant's psychological aspects and emotionality. Likewise, the research had minimum impact upon the environment, did not contaminate, according to that stipulated in the 2016 Good Environmental Practices.[13] Regarding methodological rigor, to determine the quality of this study and avoid threats against its validity and reliability, the study used the guidelines proposed by Guba and Lincoln (1985): Credibility, transferability, and confirmability.[14]

Results

The study recruited 21 individuals with a mean age of 57±15 years. Male gender predominated with 13 individuals; 17 people had parenteral nutritional support; highlighting excelled, appendectomy surgery plus peritonitis in six participants. Analysis of the theoretical data, following the guidelines by Corbin and Strauss, permitted defining the four categories that account for the meaning the person assigns to receiving artificial nutritional support during the postoperative period of abdominal surgery.

The following describe each of the categories in function of their properties and dimensions.

Stopping eating and being artificially fed

Food does not set well. The abdominal surgical pathology is mainly manifested with alterations in the intake and tolerance of food. When the individuals eat, they have discomfort, like nausea, vomit, abdominal pain and distension, symptomatology that improves with modifications in diet or with partial or total elimination of the food: *...even when I started eating a little bit, I would tolerate maybe two spoonfuls and nothing more; I could not drink juice until perhaps two hours later, I would drink it and it would start dancing in the gut and that couldn't be, until it became ...* [E02-01, 113-116].

Associating the health condition with food. While hospitalized, the individuals reconstruct the events of the disease process, whether through their own deduction or during dialogue with the health professional, which allow them to conclude that food is one of the determinant elements of the health condition, the nutritional state, and prevention of complications during the postoperative period. Furthermore, they recognize in eating cultural, social, and economic representations of the region: *Fatty meat, excess of potatoes, excess of flour, you are told not to eat this or that and it is what you eat most; that is why I am suffering these consequences (patient)* [E06-01, 57-59].

Needing artificial nutritional support to feed. Health institutions perform medical and surgical management of the individuals with abdominal pathology. In addition, they conduct nutritional assessment, evaluation of the compromise and functionality of the gastrointestinal tract during the postoperative period, which permits determining the need to set up artificial nutritional support. Artificial nutrition is indicated in this population group to supply the metabolic demands imposed by the disease and to manage and prevent hospital malnutrition. The person upon this new way of being fed feels sadness, depression, and cholera, given that they will no longer eat for an undetermined time and goes on to being fed in artificially, with feeding becoming an involuntary and abnormal act: *The day I was told I was malnourished, that had to get that (points to the parenteral nutrition) that I would get the other, I asked God what I should do. I got somewhat sad ...* [E04-01,57-59].

Identifying differences between being fed with the artificial nutritional support and feeding orally. The start of the administration of artificial nutritional support permits the individual to identify a series of differences between consuming foods through the natural path (the mouth) and going on to being fed through an artificial path, using medical devices (advanced transpyloric probe and/or central or peripheral catheters). The differences reported by the individual are: feeding without using the mouth, replacement of utensils for devices, and not knowing where the food goes to: *No, it is no longer the same to all these apparatuses I have there (infusion pump), because you grab a spoon and knife (to eat), it is not the same with those apparatuses"* [E01-01, 128-129].

Yearning to eat again. Although the person is receiving artificial nutritional support and the sensation of hunger has disappeared, the desire for eating and perceiving the flavor and consistency of the foods in the mouth remains. Throughout the process of receiving artificial nutritional support, the person yearns to go back to eating like before, through the mouth. *...the only thing is my health and being normal and immediately they will remove the nutrition, the nutritionist and they will give me food through the mouth* [E07-01,132-133].

Diminishing the capacity to move until recovering movement

Losing the strength to move. The individuals assign this meaning, given that prior to starting the process of the abdominal surgical pathology they were active and independent, performed by themselves all the tasks or activities undertaken. Upon the onset of the disease, the nutritional status is compromised due to vomiting, nausea, lack of appetite, pain and alteration in the intestinal transit, symptomatology that interferes with the appropriate contribution and use of the nutrients. Hence, without the adequate caloric-energy intake, the individuals feel discouraged and with loss of strength to walk and perform any type of activity, leading them to being bedridden and being dependent: *At that moment, I felt no strength, I felt no strength, I could not move my arms, I could not, likewise, move my legs – I couldn't, I did not feel them with strength, I couldn't …* [E17-01, 51-52].

Limiting the body's movement when having the devices. The supply of the artificial nutritional support requires the installation of invasive devices, which are connected to infusion pumps that deliver exact volumes of nutritional components. When connected to the medical equipment, the person feels that rather than contributing to recover their health, they obstruct and limit the body's movement, obligating them to seek help from the family or the nursing staff; this makes them feel dependent and useless: *It is always uncomfortable, walking with so many hoses (the enteral nutrition catheter), because I had them in the nose, the hands, they had me from one side to another* [E02-01, 293-294].

Obtaining the strength to move from the artificial nutritional support. After the onset of the artificial nutritional support, the individuals identify clearly the positive impact of artificial nutrition on bodily function; they feel more encouraged to go forth, they are capable of moving on their own, this leads them to inferring that they have gained strength and independence: *You get strength from food, it is the key to go forth, if it has to be replaced, if it needs changing, then you have to change it, at least while the health theme improves* [E18-01, 68-70].

Experiencing the difficulty of having artificial nutritional support

Modifying the physical appearance when having artificial nutrition support. When being with the invasive medical devices needed to administer artificial nutritional support, the individuals feel and look differently, perceive that the physical image has modified, the body is not the same as before. Hence, they have to start dealing with physical changes involved: weight loss, looking different due to the devices that invade and hang from the body. Thus, during trajectory of the disease, the individuals yearn to return to being what they were before and that the physical changes are momentary: *My sister took pictures of me this morning, I'll see if I look at them, to see how I am, because it is always the difference from being well groomed, quite pretty, to being here (hospital), what a difference, one must look different, different with that catheter stuck in there (in the neck)* [E04-01, 246-248].

Changing one's self-perception when having artificial nutritional support. During the process of receiving artificial nutritional support, the person remains connected to medical equipment 24 h per day, a condition that makes them perceive themselves as tied as if they were animals, dependent on a machine and with loss of freedom. Additionally, they assign a serious trait to the clinical condition. This is how artificial nutritional support not only generates changes in the person's physical aspect, but also permits the construction of a new self image, eminently negative, leading them to feel anguish and at the same time counteract it with the desire to being free at some point during the trajectory of the disease: *Well, I don't know, because that nutrition (enteral nutrition) is suppose to feed the whole*

body and you are nourished with that, but tied up there like a lamb [E11-01, 137-138].

Feeling physical discomfort with the devices of the artificial nutrition support. The advanced transpyloric probe causes more physical discomfort than the central venous catheter. The principal discomfort reported by individuals with a probe includes discomfort when breathing and unpleasant feeling in the mouth and throat. However, having any of the two invasive devices is an unpleasant experience for the person, generating sadness, sense of loss of freedom and anguish: *It gives me tremendous anguish (the probe), it does not let you, it does not let you get one wheeze at ease (cough), it makes breathing difficult* [E12-01, 88-89].

Losing the enjoyment of food. When substituting the intake of food through the natural path (mouth) and moving to the supply via an artificial path, the individual loses the capacity of deciding the type and amount of food to consume. Likewise, they lose the perception of flavors and consistency of the foods; the habit in eating schedules; now the food is administered continuously 24 h per day: *You do not sense flavor, what flavor will the nutrition have (parenteral nutrition) because if you sensed the flavor, you would say that tastes like, it is okay in salt or it needs some salt. How are you supposed to approve of it?* [E07-01, 97-98].

Finding the motives to remain with artificial nutritional support. Accepting artificial nutritional support is not a simple act of approving the installation. The person must be aware that the benefits of the artificial nutrition depend on the permanence and the care taken during the administration. Thus, the person learns to deal with and care for the medical devices that provide the artificial nutrition. *You have to be careful when bathing, sleeping; when sleeping I have to do it on my side and still, otherwise, it can get creased (the advanced probe); one night it got creased (the probe), what a problem it was to reload that hose* [E09-01, 98-100].

The disease arrives to transform life

Socializing with people. The person's interaction in a health institution produces changes in the family and social dynamics. With respect to the family, the bond with significant others is fragmented, a temporary separation emerges, which must be assumed through the reorganization of the family structure: *...because I can't be the same there (at home) looking over my children, taking them to school; seeing how they are, what snacks are they taking to school, seeing if they arrived, did they do their homework... (weeping)* [E19-01, 118-120]. Regarding the social part, the person is sharing with the rest in an environment with the specific characteristics of the culture and goes on to occupying an unknown and hostile space due to the rigid norms imposed by health care: *...friendships like those you had at first, with coworkers to go and talk, chat, any person calls you, come over here, come that I don't know what, how are you doing...* [E16-01, 51-53].

Being sick. Although the individuals have gastrointestinal-type manifestations, which indicate that something is occurring in the body, they deny the possibility of thinking about a health problem, until the symptomatology becomes acute, obligating them to seek medical help to treat the health breakdown they are suffering: *You are very reluctant to coming to the; like the saying, nobody likes going to a hospital and to a jail, so you sort of refuse and sometimes you take a pill, drink some herb tea, you sort of skirt the issue of going to the hospital, but the moment comes when you have to, so you must* [E14-01, 147-150].

Needing help from other people for daily personal care. Surgical management of the disease, along with unexpected changes in the evolution and treatment of the health condition, like the start of the artificial nutritional support or performance of several surgical interventions, originate in the individual dependence to carry out basic daily life activities, like bathing, dressing, personal care and acre of the skin; activities which are assumed by

the family or nursing staff: *...in the physical part it is the same, they also give me foot massages, they rub my back, change my position in bed, all those things, they help me shower* [E19-01, 76-78].

Reaffirming the belief in God. After several days of hospital stay, the person lives distressful situations of the medical management, feels that the trajectory of the disease is full of ups and downs; one day they feel vital and positive regarding the situation and the next, they don't want to continue. However, living the experience of being sick and having artificial nutritional support produces the reaffirmation of the belief in God, who guides the path of all the people involved in the health recovery. The closeness with God leads the person to reflect about life, death, and human transcendence. Moreover, it permits transforming the vision towards the future and offering the tools to accept the health condition positively: *... I know God is there, and I place myself at God's mercy; I tell God, there is my body, I know you are doing your work with me, at that moment and that is how I believe it, all this process I gave it God and I know He will keep me going ahead from here (hospital)* [E21-01, 29-32].

Discussion

The following compares the results of this research from the significance with other investigations and theoretical proposals related with the study phenomenon. The first category is *stopping eating and being artificially fed*. The abdominal pathology of surgical management is characterized by gastrointestinal discomfort, counteracted by the person by eating very little or by not eating, measures that generate physical decay and emotional changes in the person. Said findings are related with the qualitative study by Rattray *et al.,*[15] that explored the experiences of patients when starting the feeding process after colorectal surgery. The research revealed that some participants, when experiencing nausea due to the surgical pathology, undertake a series of actions to mitigate the symptom, like, modifying the diet, giving up on foods they normally eat and selecting those they can swallow independent of the enjoyment or avoiding eating food completely.

Furthermore, the person in the postoperative period of abdominal surgery with compromise of the gastrointestinal tract, malnutrition, or nutritional risk is candidate for management with artificial nutritional support, a clinical situation that generates in the person feelings of sadness by stopping eating and depression due to the health condition, results that coincide with that reported by Hope *et al.*[16] in which patients are depressed due to the health condition and the hospitalization. Lozano-Ballena *et al*.,[17] enhance the scientific evidence when correlating the patient's nutritional status with abdominal surgery and the short-term surgical results; malnutrition is associated significantly with increased hospital stay, rate of mortality after 30 days, and minor medical complications.

In this sense, the article on the scientific literature review about clinical malnutrition by Ulíbarri *et al.,*[3] highlights the importance of conducting a nutritional evaluation of the surgical patient, but upon urgent surgical interventions or those that cannot be postponed, nutritional support must be included in the treatment plan for these patients, by following this same research theme and method.

The second category, *diminishing the capacity to move until recovering movement*; the person in the preoperative and postoperative periods is subjected to prolonged fasting due to the clinical condition of the disease and restrictions imposed by the health condition, circumstances that generate consumption and depletion of the bodily energy reserves. These alterations in the metabolism are perceived by the person with loss of strength to move, weakness and decay, manifestations that when perpetuated lead the individual to becoming

dependent on others. The cohort observational study by Sorrel *et al.,*[18] supports the findings of this research. Upon revealing that parenteral nutrition at home affects the person's quality of life, the aforementioned associated with diminished mobility and psychological problems due to restrictions imposed by the artificial nutrition. Additionally, the medical devices (infusion pump) limit body movement; over time, the individuals learn to move with them until they finally get used. Results consistent with the study by Wong *et al*.,[19] who used the grounded theory methodology to describe the experience of living with parenteral nutrition at home and a stoma. The authors reported two problems experience by participants with parenteral nutrition; the first is the loss of mobility in the home due to the infusion pump and the nutrition bag; the second is the maintenance of the infusions for long periods of time.

In turn, the participants in the present study stated the need for help to perform basic daily life activities due to the loss of energy and strength caused by the disease and the nutritional imbalance. Thus, it i show artificial nutritional support provides the nutritional elements fundamental to recover strength and movement. Tobberup *et al.,*[20] found in a systematic review and meta-analyses, a prospective randomized controlled study that evidenced positive changes in physical performance in the six-minute walk test in patients assigned randomly to receive parenteral nutrition.

The third category, *experiencing the difficulty of having artificial nutritional support*, is related with changes the person perceives regarding the physical appearance, perception of themselves, and loss of satisfaction and pleasure generated by eating by their own means. These results agree with the systematic review of qualitative and quantitative studies on the attitudes and barriers in feeding due to endoscopic gastrostomy, conducted by Jaafar *et al.,*[21] who reported that one of the negative aspects in adapting and incorporating nutrition through probe on the person's lifestyle is the loss of pleasure for food. For the individual, food becomes a fuel and not an activity of leisure or pleasure. Another difficult experience lived by the individuals when having the devices of artificial nutritional support (central venous catheter and advanced transpyloric probe) is the modification of the physical appearance. These findings agree with the study by Wong *et al.,*[19] which reported that the research participants experienced loss of self image and increased self-conscience, elements that can trigger psychosocial problems.

In the fourth category, *the disease arrives to transform life,* the meaning from the person's perspective makes the experience lived by receiving artificial nutritional support to permeate all the spheres of the person's existence. The people in this study state in their testimonies that the family provides them love and aid in personal care activities. Said results agree with the qualitative thematic analysis study by Halliday *et al.,*[22] about the experiences of patients and caregivers of living with nutrition probe in the postoperative period of esophago-gastrectomy and which reported that the family and loved ones are the principal source of support to comply with daily activities.

Agreeing with the reaffirmation of the belief in God, in that reported by Gariella *et al.,*[23] the researchers conducted a cross-sectional pilot study on the importance of spirituality and religiosity in 101 patients with burn injury at various stages of reconstructive surgery, revealing that patients in postoperative place God as first priority in life. Besides, the participants spent more time in prayer and meditation. Balboni and Balboni[24], in a cross-sectional multicentric study, which sought to describe how spirituality operates in the experience of cancer, reported that patients state being moderately religious and spiritual, but religiosity and spirituality increase with the onset of a life-threatening disease. Results that in the religiosity part are similar to that manifested by the individuals in the present study, who referred

that surviving the disease and the loss of strength made them reflect about life and death, a situation that got them closer to God.

Finally, it is concluded that the individual upon receiving artificial nutritional support assigns a series of meanings to this life event, which begins with the presence of gastrointestinal symptomatology and culminates with abdominal surgical intervention, an event that potentiates malnutrition or nutritional risk, making it necessary to start artificial nutritional support. Upon said circumstance, the individuals deconstruct the meaning of feeding by their own means and assign a new one: that of being fed to maintain life. In this process, there are changes in the person of a social, emotional, and self-perception nature, to finally make sense of the experience. In addition, it permits health professionals to change their views about the person with artificial nutritional support, who is not a passive receptor or an object of medical treatment, but a person who receives the benefits of artificial nutrition. Hence, the person must be cared from the biological, social, and emotional aspects, thus, the study invites to delve further into the phenomenon.

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Original article

Implications of institutional racism in the therapeutic itinerary of people with chronic renal failure

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Implications of institutional racism in the therapeutic itinerary of people with Chronic Renal Failure

Abstract

Objective. To understand the implications of institutional racism in the therapeutic itinerary of patients with chronic renal failure (CRF) in the search for diagnosis and treatment of the disease. **Methods.** Descriptive, qualitative study developed with 23 people with CRF in a regional reference hospital for hemodialysis treatment in Northeast Brazil. Two techniques of data collection were used: semi-structured interview and consultation to the NEFRODATA electronic medical record. For systematization and analysis, the technique of content analysis was used. **Results.** Black and white people with CRF showed significant divergences and differences in their therapeutic itineraries: while white people had access to diagnosis during outpatient care in other medical specialties, black people were only diagnosed during hospitalization. In addition, white people had more access to private health

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plans when compared to black people, which doubles the possibility of access to health services. Moreover, even when the characteristics in the itinerary of black and white people were convergent, access to diagnosis and treatment proved to be more difficult for black people. **Conclusion.** The study showed the presence of institutional racism in the therapeutic itinerary of people with kidney disease in which black people have greater difficulty in accessing health services. In this sense, there is a need to create strategies to face institutional racism and to consolidate the National Policy for Comprehensive Health Care of the Black Population.

Descriptors: racismo; renal insufficiency, chronic; health services accessibility; ethnic inequality.

Implicaciones del racismo institucional en el itinerario terapéutico de personas con insuficiencia renal crónica

Resumen

Objetivo. Comprender las implicaciones del racismo institucional en el itinerario terapéutico de pacientes con insuficiencia renal crónica (IRC) en la búsqueda del diagnóstico y tratamiento de la enfermedad. **Métodos.** Estudio descriptivo, cualitativo, desarrollado con la participación de 23 personas con IRC en un hospital regional de referencia para tratamiento de hemodiálisis en el noreste de Brasil. Se utilizaron dos técnicas de recolección de datos: entrevista semiestructurada y consulta a la historia clínica electrónica NEFRODATA. Para la sistematización y el análisis, se utilizó la técnica de análisis de contenido. **Resultados.** Las personas negras y blancas con IRC mostraron divergencias y diferencias en sus itinerarios terapéuticos: mientras que las personas blancas tuvieron acceso al diagnóstico durante la atención ambulatoria con otra especialidad médica, las personas negras solo fueron diagnosticadas durante la hospitalización. Además, las personas blancas tenían más acceso a planes de salud privados en comparación con las personas negras, lo que les brindaba una doble posibilidad de acceso a los servicios de salud. También se agrega que, incluso, cuando las características en el itinerario de las personas blancas y negras eran convergentes, el acceso al diagnóstico y al tratamiento fue más difícil para las personas negras. **Conclusión.** El estudio evidenció la presencia de racismo institucional en el itinerario terapéutico de las personas con enfermedad renal, en el que las personas negras tienen mayor dificultad para

acceder a los servicios de salud. En este sentido, es necesario crear estrategias para enfrentar el racismo institucional y consolidar la Política Nacional para la Salud Integral de la Población Negra.

Descriptores: racismo; insuficiencia renal crónica; accesibilidad a los servicios de salud; inequidad étnica.

Implicações do racismo institucional no itinerário terapêutico de pessoas com insuficiência renal crônica

Resumo

Objetivo. Compreender as implicações do racismo institucional no itinerário terapêutico de pacientes com insuficiência renal crônica (IRC) na busca pelo diagnóstico e tratamento da doença. **Métodos.** Estudo descritivo, qualitativo, desenvolvido com 23 pessoas com IRC em um hospital de referência regional para tratamento hemodialítico no Nordeste do Brasil. Foi utilizado duas técnicas de coleta de dados: entrevista semiestruturada e consulta ao prontuário eletrônico NEFRODATA. Para sistematização e análise utilizou-se a técnica de análise de conteúdo. **Resultados.** As pessoas negras e brancas com IRC apresentaram divergências e diferenças em seus itinerários terapêuticos: enquanto as pessoas brancas tiveram acesso ao diagnóstico durante o atendimento ambulatorial com outra especialidade médica, as pessoas negras só foram diagnosticadas durante internação hospitalar. Ademais, as pessoas brancas tiveram mais acesso a planos privados de saúde quando comparados às pessoas negras, o que confere dupla possibilidade de acesso aos serviços de saúde. Acrescenta-se ainda que, mesmo quando as características no itinerário das pessoas negras e brancas foram convergentes, o acesso ao diagnóstico e tratamento se mostrou mais dificultado para pessoas negras. **Conclusão.** O estudo evidenciou a presença de racismo institucional no itinerário terapêutico de pessoas com doença renal, em que pessoas negras possuem maior dificuldade de acesso aos serviços de saúde. Nesse sentido, há necessidade de criar estratégias para o enfrentamento do racismo institucional e para consolidação da Política Nacional de Saúde Integral da População Negra.

Descritores: racismo; insuficiência renal crónica; acesso aos serviços de saúde; iniquidade étnica.

Introduction

The demographic transition process evidenced in Brazilian society in recent years has presented challenges for federal management, especially with regard to new health needs as a result of the change in the morbidity and mortality profile. In this context, there has been a reduction in deaths from infectious diseases and a progressive increase in chronic non-communicable diseases.[1] Chronic Renal Failure (CRF) is part of the list of chronic non-communicable diseases that had a significant increase in incidence and prevalence. This condition is understood as the final stage of chronic kidney disease, when the kidney is unable to maintain hydroelectrolytic balance and patients begin to require kidney replacement therapy. It is a progressive disease whose main risk factors are systemic arterial hypertension, diabetes mellitus and family history.[2] Treatment can be carried out using three therapeutic modalities: peritoneal dialysis, hemodialysis and kidney transplantation.[3] However, despite treatment, the mortality of these people is high, being higher than 20% in the first year of dialysis.[4] It is believed that this high percentage of deaths at the onset of treatment is related to difficulties to access early diagnosis.[3]

The increase in incidence was confirmed in the Brazilian Chronic Dialysis Survey, which detected an increase of 31 500 patients on dialysis from 2012 to 2016, reaching a total of 122, 825 people with CRF at the end of 2016.[5] Stresses it is said that this increase in the onset of the disease is evidenced mainly in the black population, in which the incidence rate is three times higher when compared to white people.[6] International studies also pointed out that the prevalence of CRF is four times higher in people of African ethnicity when compared to those of European ethnicity.[7] Something similar was found in the United States, where kidney disease predominantly affects African Americans.[8] The problem extends to kidney transplantation, a type of kidney replacement therapy that increases the quality of life of patients. When compared to white patients, African-Americans have less than half the chance of having access to this therapeutic modality.[4]

It is noteworthy that the literature often shows studies that discuss the prevalence of CRF and its main underlying diseases, such as diabetic nephropathy, only from a biological perspective, justifying the higher prevalence among black people with genetic predisposition,[9] but overlooking the worsening of the condition that results from the precarious living conditions of this population. Furthermore, it is essential to highlight that CRF has a more serious evolution or difficult treatment in the black population as a result of the structuring racism that impacts on the health conditions of this population contingent.[10] It is added that racism not only impacts the birth, life and death conditions of black people, but also produces and reproduces unequal access due to race/

skin color.[11] When racism is institutionalized, it acts as a determinant for the onset of the disease, search for diagnosis and treatment of CRF.

As it is a progressive and asymptomatic disease in the early stages, broad access to health services must be present throughout the paths taken by patients so that early diagnosis and correct treatment be possible. The path taken by patients in the search for the diagnosis and treatment of certain pathologies is called the therapeutic itinerary (TI).[12] It is believed that the study of TIs of black and white people with CRF can be used to help the health teams that follow-up this population to understand the racial, social and cultural context in which these individuals are inserted. This type of study also contributes to identify factors that facilitate and/or hinder the access to the health services of each group, aiming to contribute to decision making regarding the approaches adopted in different lines of care. In this sense, this study aims to understand the implications of institutional racism in the therapeutic itinerary of patients with CRF in the search for diagnosis and treatment of the disease.

Methods

The study is a product of the master's thesis of the first author of the study entitled "Implications of racism in the access of people with chronic kidney disease to health services", developed in 2019 in the Department of Masters in Professional Nursing (MPE) of the Health Department at the State University of Feira de Santana (UEFS), Bahia, Brazil. As a characteristic of the MPE, questions about the theme emerged after observations in the reality experienced while assisting people with CRF, most of whom were of black race/skin color.

This is a descriptive study with a qualitative approach developed in a regional reference hospital for hemodialysis treatment, located in a municipality in the northeast of Brazil. This hospital unit is a private law institution affiliated to the Unified Health System (SUS) and private health plans. The service serves people diagnosed with acute and CRF, and provide conservative follow-up for CRF patients in the non-dialysis phase.

The study included 23 people diagnosed with CRF over the age of 18 who undergo hemodialysis at the institution. People diagnosed with acute CRF and people with chronic CRF in the non-dialysis phase were excluded. Data collection took place in the months of June and July 2019. Patients were randomly approached in the waiting room before the treatment was performed, and the study was presented and, after their signing of the informed consent form, the interview was conducted. Two techniques were used for data collection: interview and consultation of secondary data through electronic medical records.

Two data collection instruments were used: a semi-structured interview accompanied by a script containing closed questions about sociodemographic aspects and open questions about the object studied, and a script for the collection of clinical information in medical records. Regarding the sociodemographic characterization of the participants, the information sought was: sex, race/skin color, education, income, receipt of social benefits, way of admission to the nephrology service, and access to conservative treatment. For the interviews, the guiding questions were: tell me what happened to you until you found out you had CRF; describe the facilitators and barriers faced to access diagnosis and treatment. The interviews were recorded and transcribed verbatim for analysis of their content.

Data collection was completed when empirical information saturation was reached. After the transcription, the interviews were returned to the participants for comments and/or corrections. In order to guarantee rigor in qualitative research, the checklist of qualitative research was adopted in all stages of the 32 items present in the guidelines of

the Consolidated Criteria for Reporting Qualitative Research (COREQ). Data were organized in two tables based on the self-declared race/skin color: blacks and whites. Then, a comparative chart of the itinerary of the groups was elaborated, organized from the convergences, divergences and complementarities, so that it was possible to understand the manifestations of racism and its implications in the patients' therapeutic itinerary. This systematization followed the characteristics of the proposed content analysis, being treated from the stages of pre-analysis with transcription and quick reading of the interviews; exploration of the material with codification and structuring of convergences, divergences and complementarities; and treatment of results with construction of inferences and confrontation with data in the existing literature.

The study complied with ethical precepts with respect to the interviewees' autonomy, confidentiality of data, and acceptance to participate in the study by reading and signing the informed consent form. To guarantee anonymity, the participants were identified by the letter "I", followed by a number that corresponded to the order of the interview and respective self-declared race/skin color. The study was approved by the UEFS Research and Ethics Committee with CAAE 90202618.0.0000.0053.

Results

Among the 23 study participants, 52.2% were women, 52.8% declared to be white and 48.2% black. Regarding education, 25% of white patients attended higher education, while only 9.1% of black patients had had access to superior education. With regard to income, 81.8% of black people and 66% of white people had an income of up to 1 minimum wage (US $ 235 = R $ 1045 reais). In addition, only 18.2% of the black participants did not receive the benefit of continued provision for low-income people, while 41.7% of the white people did not receive this benefit.

Regarding the way of admission to the nephrology service, 81.8% of the black people were referred after the symptoms worsened and after hospitalization, while 58.3% of white people were referred from outpatient care (Family Health Strategy - FHS, conservative treatment or other medical specialties). It is also noteworthy that, among cases of outpatient care, only white people had access to follow-up at the FHS (8.3%) and conservative treatment (50%), which correspond to outpatient follow-up with a specialized nephrology team before the start of the hemodialysis.

The interviews revealed that people with different racial characteristics had different therapeutic itineraries. Table 1, described below, presents in a systematic way the aspects of the content of the speeches of black and white people, structured from the convergences, divergences and differences of the speeches.

Table 1. Systematization of the therapeutic itinerary of black and white people with CRF

Convergences	1 - Assistance resulting from the exacerbation of symptoms. 2 - Chronic renal insufficiency as a secondary disease. 3 - Lack of basic care in the therapeutic itinerary. 4 - Presence of the private sector in the search for diagnosis.
Divergences	1 - Conservative treatment exclusively in the case of white people. 2 - Access to private health plans exclusively in the case of white people.
Differences	1 - Access to diagnosis resulting from care in other specialties: white people during outpatient care and black people during in-hospital care.

It was noted that the therapeutic itinerary for both black and white patients began with the worsening of the disease and exacerbation of symptoms, manifested with malaise, shortness of breath and generalized edema: *I was started feeling bad at home, very short of breath and very swollen, then they took me to the hospital and there they found out I had the disease* (I3, black); *I started to swell, first it was the legs, then it was the face. That was how I found out. I did the test and found that I had a kidney problem*. (I20, white).

Another convergence between people of black and white race/skin color was the inexistence of basic care in the therapeutic itinerary of these people, and thus the diagnosis and referral resulted from in-hospital care. Difficulty in accessing the diagnosis was also evident, since the patients needed multiple consultations in different cities: (...) *My blood pressure was 18/14 and I stayed at the UPA all the afternoon. I left with the referral because I did several tests there and they found nothing. Then I went to Vitória da Conquista, because it was a more developed city. I had several consultations, I went to several doctors, but everything was private and they found nothing. My condition got worse and I couldn't eat anymore, that was when I decided to go to Goiânia. I repeated all the exams until the nephrologist confirmed that I had kidney disease* (I7, black); *I already had a problem with my uterus, I was already being monitored by her [gynecologist] and I arrived a with very high blood pressure, then she said: you can't be like that and sent me to the cardiologist. He was investigating, investigating, then on the ultrasound he requested (...) there was [kidney problem]* (I23, white).

The lack of basic care in the itinerary implied the presence of the private sector in the search for diagnosis of black and white people. In this sense, there is a difficulty in access that is directly associated with the enormous fragmentation of care, high financial cost for correct follow-up, and low resolution in small cities: *It was complicated because I spent a lot. Until I arrived in Goiânia I went to several doctors, did several tests and had to pay for everything. I paid R$ 300 reais for a consultation and the doctor said that he could not help, I even spent R$ 1,000 reais on exams and could not find a solution* (I7, black); *The whole treatment was private, until the moment I was admitted because I had very swollen feet* (I4, black)*; (...) I only use the FHS service during the vaccination campaign. I don't do routine monitoring* (I14, white).

This high cost is directly related to fragmented assistance and a strong presence of the private sector. However, the private sector is only present in the itinerary until diagnosis. After the discovery of the disease, SUS becomes the main agent

providing care, because the cost of treatment is high. Another converging characteristic between the two racial groups is that many patients had access to the diagnosis of CRF from the existence of another disease: *I did not feel the kidney first, I felt the heart first. I had a consultation with the Cuban doctor and he said: 'go to Carinhanha fast because your heart is swollen'. I was feeling short of breath, short of breath, anything I did caused me short of breath. Then I came to the hospital in Carinhanha, spent one night, and the next day early, they sent me to Guanambi. I was admitted to the hospital for 10 days and they found that because of my heart [problem] the kidney was affected* (I5, black); *my problem was caused by schistosomiasis, I was undergoing treatment for schistosomiasis, you know that it causes water belly, right? Then my belly started to grow and I went to São Paulo. When I got there, I had two surgeries, I removed the spleen, but the nephrologist said that I had a kidney problem, with beginning of nephritis* (I21, white).

On the other hand, a marked divergence between black and white people was that only the latter underwent conservative outpatient treatment before the start of kidney replacement therapy: *I did not do it [previous follow-up]. My follow-up started during the treatment. So much so that I went through several doctors and nobody found out, when I got sick and very bad that they took me to* Conquista *and I found out. When I realized I was already in the machine* (I1, black); *I did [follow-up] here with nephrologist since 2013 (...) I started to do a check-up every 3 months, it depended a lot on the tests he requested. When I made had the consultation, he would already give me the exams for me to do and the next time I would bring them [the results]* (I23, white).

In addition to the the fact that only white people did conservative treatment, another divergence between the two racial groups was that only white patients had access to supplementary health through private health plans, which facilitated access to follow-up, tests and treatment: *The kidney had stopped working with antibiotics, my kidney was stopped. I went back to the doctor who had evaluated me years before, I made a health plan that had a promotion in which there was immediate start of coverage, then I scheduled the consultation and went* (I19, white); (...) *and then I spent 4 years being followed-up in Montes Claros, but the consultation was private, I had the* planserv *that only provided care in Bahia. Then I did the private consultation and the exams she passed I did here in Bahia using the health plan. I never used SUS* (I16, white).

It was also perceived, especially in the statements of I16, the limits of private care, since health plans do not have universal coverage, which makes access spaces limited and predetermined.

Discussion

Two analytical categories emerged from the analysis of the chart: 1) Fragmentation of care and racism involved in the convergences of the pilgrimage of people with renal failure; 2) Divergences and differences in the therapeutic itinerary of black and white patients and racism materialized in the lack of access for black people.

Fragmentation of care and racism involved in the convergences of the pilgrimage of people with renal failure

The search for assistance goes through the representation that the groups have about the meaning of health.[13] Thus, the fact that black and non-black people seek assistance after the exacerbation of symptoms represents, in part, a limited possibility of taking care of the health, where the search for curative care occurs to the detriment of preventive care. We can affirm, given the statements, that the search for services aimed at health promotion and disease prevention is something that escapes the role of valuing this

population, considering that the service health care is sought only in times of real need (urgent and emergency situations).

Furthermore, both the fact that the discovery of CRF was made during the treatment of a secondary disease, as well as the search for care when there was exacerbation of symptoms points to the lack of primary care as an integral part of the therapeutic itinerary of black and white patients. It should be noted that, according to ordinance 389 of March 13, 2014, the FHS has the responsibility to develop actions to prevent risk factors related to CRF, perform early diagnosis and refer patients to specialized care when diagnosis is confirmed. In addition, it is up to the FHS to define the criteria for the organization of care for people with CRF.[14] In this sense, we believe that the absence of the FHS in the itinerary has a more significant impact on the assistance to black people because this public presented a greater economic vulnerability and fewer years of schooling, found in the sociodemographic description, which implies less possibility of access to health services.

We believe that the lack of FHS in the patients' itinerary negatively impacted the search for the consolidation of the National Policy for Comprehensive Health Care of the Black Population (PNSIPN). The PNSIPN focus the attention on diseases which are prevalent in the black population, especially diabetes mellitus and systemic arterial hypertension, the main causes of CRF, and which should be followed-up in primary care.[15] The fact that black and white patients seek health care only when uremic symptoms start, including abdominal pain, nausea and vomiting, may indicate that they are unaware of the performance of the FHS as a reference for entry into the SUS, and/or that they do not have access to this service. It may also indicate that we have not yet overcome the care model existing prior to SUS, which is based on a merely curative, hospital-centered search and centered on the figure of physicians. However, such aspects do not explain the essence of the findings. After all, we agree with Marx when he says that phenomena and events are simple projections of reality, which was called by Kosik[16] pseudo-concreteness. The search for concrete then goes through the fundamental question: why after thirty years of the construction of SUS, we still have not overcome the hegemonic hospital-centered model of care for people, regardless of their race/color?

It is believed that the explanation of involves the presence of the private sector in the search for diagnosis. Despite being seen as complementary, the interests of the public and private system seem to be antagonistic in many of their nuances, which affect the access to health care for black and white people. This is because in capitalism, health has two contradictory faces: it is both a right and a commodity for generating profit in the private sector. In view of this, we agree with Mészaros[17] when he points out that the capitalist mode of production affects and influences all sectors of society, integrating people, regardless of their race/color, into a larger order.

This higher order seeks an intense accumulation of all socially produced goods, including health, to maintain the power of the ruling class, in the face of the dependence and exploitation of the dominated class. Thus, the presence of the private sector in an important way in the therapeutic itinerary of white and black people with CRF shows that capitalism, transvested in the shape of the private service, was reorganized after the Constitution of 1988 to act in parallel with SUS: while one seeks universality, comprehensiveness and equity, the other acts to generate wealth.[18]

Furthermore, the presence of the private sector demonstrates, intrinsically, how complex the process of alienating people is, since a fetishism has been created in the social imagination, regardless of race/color, which characterizes the private service as efficient, fast and problem-solving, while SUS is represented by queues at hospitals and difficult access. However, the speeches of the participants showed that, although

there was the presence of the private sector in the itinerary of white and black people, black people were only diagnosed when the symptoms were evident, which shows that access to the diagnosis was more difficult for this public. In this sense, it is clear that even in the convergences, it is possible to identify marks of institutional racism and inequity.

Divergences and differences in the therapeutic itinerary of black and white patients and racism materialized in the lack of access for black people

Although racism is present in the convergences, it is believed that it is from the divergences and differences in the therapeutic itinerary that the materialization of institutional racism can be identified in a more expressive way. Racial discrimination in health occurs in a subtle way, little perceived and difficult to be seen. It is implicated in the organizational processes, which result in the difficulty of access, in the negligence that leads to unequal results, something evidenced in the distinct itinerary between the black and non-black groups.[10]

In this category, it is observed that the exclusive access by white people to conservative treatment and to private health plans facilitated access to early diagnosis and better quality of life. Despite the participants, in general, presented CRF as a secondary disease, the self-declared blacks did not undergo routine follow-up in other specialties before the start of hemodialysis, while the self-declared whites did outpatient follow-up with numerous specialties such as cardiology and gynecology, which facilitated the access of this group to the diagnosis of CRF. Another important detail was that despite the symptoms and despite having financial conditions to pay for private consultations (represented by the statement of I7), black people needed hospitalization to be diagnosed with CRF, unlike white people who were diagnosed in outpatient consultations.

Furthermore, white people were the only ones who had access to private health plans, and thus they did not depend exclusively on the public sector. Access to health plans is directly related to people's financial capacity, whether due to economic power or stability in public employment with the right to health insurance. The public-private offer was discussed by Pilotto and Celeste[19] who found that the double possibility of offer favors people who have a private health plan, and this can generate inequality and inequity when it is taken into account that some people only have the public system as their horizon of access. Therefore, if black people do not have access to private plans, their access to diagnosis is more difficult compared to white people.

According to data published by the National Supplementary Health Agency in August 2019, the sector accounted for 47,332,911 beneficiaries of private health care plans, which corresponded to approximately 22.5% of the population, with greater coverage in the south, southeast and central regions.[20] It is thus noted that having access to private health plans is a privilege achieved by a small portion of the population, which reinforces the perception that it is a privilege that few have access to. Furthermore, according to the Brazilian Institute of Geography and Statistics, in 2016, 75% of the poorest population in the country corresponded to black people.[21] In this perspective, it can be inferred that because the Brazilian black population is mainly in the group of lower purchasing power, it has greater difficulty in accessing private health plans. In this sense, it is possible to see that this population depends exclusively on the State to access socially produced goods, including health care.

According to Marx and Engerls,[22] the State has the primary function of maintaining the status quo, that is, creating rules, laws and organizing society to reduce social tensions, keeping power under the control of a small portion of the population. The State is hardly able to function as

an instrument that guarantees rights in its fullness, indirectly naturalizing inequality. Furthermore, it is essential to mention that the current system is based on neoliberalism, which has the precepts of deregulation of the economy, reduction of the State and of social rights and expansion of privatizations, which in practice devaluates the SUS.[23]

It is also worth mentioning that, unlike blacks who started CRF treatment during in-hospital care, a significant portion of white people had access to conservative treatment, in the case of those who were diagnosed early, something fundamental to guarantee the quality of life and prepare to start kidney replacement therapy. Through conservative treatment, people do follow-up with a multidisciplinary team, including specialized physicians, nurses, nutritionists, psychologists and social workers. Thus, it is possible to delay the progression of the disease and improve the outcome in dialysis treatment through the control of comorbidities, prescription of diets and drugs, and choice of the best therapeutic option for the final stage of CRF.[24]

Furthermore, through conservative treatment, patients are psychologically prepared for treatment dependence, in addition to making the vascular access for possible hemodialysis, avoiding more invasive urgent surgical procedures.[24] In this aspect, the lack of access by black people to conservative treatment impacted on their treatment and quality of life, with the onset of early dialysis therapy due to the lack of guidance for controlling the progression of the disease.

From this observation, it is possible to affirm that racism is configured in a system that structures and determines opportunities, negatively impacting on the health conditions of the black people.[25] The problem is not limited to the underdevelopment of Brazil, since the racism has also been discussed as an important factor in the morbidity and mortality of blacks in the United States and the United Kingdom.[26] Thus, it is also noted that racism is a social determinant of health present in several countries with different cultural and economic characteristics.[27]

It is concluded that institutional racism is present in the therapeutic itinerary of people with kidney disease, in which persons of black race/skin color have greater difficulty in accessing health services, negatively impacting the early diagnosis and treatment of CRF. In addition, white people presented a double possibility of assistance through the public and private sector, which allows for better treatment conditions.

However, the transformation of reality goes beyond the verification of the existence of racism. As it is a hegemonic structure, it is believed that the confrontation of institutional racism involves macro- and micro-organizational political articulation. In the macro-organizational scenario, the articulated performance of municipal, state and federal managers is necessary to overcome the hospital-centered model, strengthen primary care and consolidate the PNSIPN. In addition, it is necessary to structure a new economic policy that helps to protect this group and helps them to reach decision-making power in the State.[12] This directly and indirectly requires greater access to income, education and work. In the micro-organizational stance, it is necessary to articulate with social organizations, such as the black movement, with a view to implementing strategies for valuing cultural aspects, expanding the listening channels, identifying and denouncing direct and indirect manifestations of racism.

It is in this micro-organizational context that the present study fits. From the results presented, it was possible to verify that institutional racism negatively impacts the health of the black population. To face this issue, it is necessary to gather efforts of service managers, professionals and users in the search for a change in this paradigm. The study not only provides subsidies to these groups but also contribute to the continuous training of health professionals with a view to transforming daily practices, reducing the neglect of black people and inequities.

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Report of the Experience of Living with High Blood Pressure in Light of the Theory of Caring

Original article

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Report of the Experience of Living with High Blood Pressure in Light of the Theory of Caring

Abstract

Objective. To analyze the report of the experience of the person with high blood pressure, in light of the theory proposed by Kristen Swanson, **Methods.** This was a qualitative research with autobiographical-type narrative design. To collect and analyze the information, the work used open in-depth interview with 12 individuals, participant observation, and field notes. **Results.** The study recognized the beliefs, customs, and cultural practices of the person living with high blood pressure and identified the care needs. The participants shared their feelings, finding that each confronts this disease differently and learns to care for themselves in particular manner. **Conclusion.** In the analysis of the narratives of the experience of people with high blood pressure, five care processes

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by Swanson were recognized: maintaining the beliefs, knowing, being with, doing for, and permitting.

Descriptors: hypertension; self care; nursing theory; qualitative research.

Relato de la experiencia de vivir con Hipertensión Arterial a la luz de la teoría de los cuidados

Resumen

Objetivo. Analizar el relato de la experiencia de la persona con hipertensión arterial, a la luz de la teoría propuesta por Kristen Swanson, **Métodos.** Se trata de una investigación cualitativa con diseño narrativo tipo autobiográfico. Para la recolección y análisis de la información, se utilizó la entrevista abierta a profundidad, a doce personas, la observación participante y las notas de campo. **Resultados.** Se reconocieron las creencias, costumbres y prácticas culturales de la persona que vive con hipertensión arterial y se identificaron las necesidades de cuidado. Los participantes compartieron sus sentimientos, encontrando que cada uno afronta esta enfermedad de manera diferente y aprende a cuidarse de forma particular**.** **Conclusión.** En el análisis de las narrativas de la experiencia de las personas con hipertensión arterial se reconocieron los cinco procesos de cuidado de Swanson: mantener las creencias, conocer, estar con, hacer por y permitir.

Descriptores: Hipertensión; Autocuidado; teoría de enfermería; investigación cualitativa.

Relato da experiência de viver com Hipertensão Arterial à luz da teoria dos cuidados

Resumo

Objetivo. Analisar o relato da experiência da pessoa com hipertensão arterial, à luz da teoria proposta por Kristen Swanson, **Métodos.** Se trata de uma investigação qualitativa com desenho narrativo tipo autobiográfico. Para a coleta e análise da informação, se utilizou a entrevista aberta a profundidade, a doze pessoas, a observação participante e as notas de campo. **Resultados.** Se reconheceram as crenças, costumes e práticas culturais da pessoa que vive com hipertensão arterial e se identificaram as necessidades de cuidado. Os participantes compartiram seus sentimentos, encontrando que cada pessoa afronta esta doença de maneira diferente e aprende a cuidar-se de forma particular**.** **Conclusão.** Na análise das narrativas da experiência das pessoas com hipertensão arterial se reconheceram os cinco processos de cuidado de Swanson: manter as crenças, conhecer, estar com fazer por e permitir.

Descritores: hipertensão; autocuidado; teoria de enfermagem; pesquisa qualitativa.

Introduction

Currently, high blood pressure (HBP) has become one of the first causes of morbidity and mortality globally. According to the WHO, in the world there are 1.130-billion people with this disease. By 2015, one in every four 4 men and one in every five women had hypertension; the purpose is to reduce HBP prevalence by 25% by 2025.[1] Due to the high number of patients and its complications that can cause death, the pathology is considered a public health problem throughout the world, becoming a risk factor for high-cost chronic and degenerative diseases, like cerebrovascular, cardiac, arteriosclerosis, and renal diseases, among others.[1] High blood pressure demands strict regular and constant compliance with the therapeutic regime, which implies changes in life habits because the treatment has a pharmacological component and a non-pharmacological one (diet, physical activity, stress management). However, most patients abandon the recommendations from the health staff as of the first year after being diagnosed because they believe they are feeling better, forget to take the tablets, or get tired with the treatment.[2] Also, health professionals and the very health system face the problematic of the lack of adherence to the treatment.[3]

Knowledge patients have acquired about the disease and treatment lets them act consciously,[4] bearing in mind the characteristics, effects, risks, and adequate behaviors to manage HBP. The selection of the diet[5-7] in elderly adults is of great importance for the patients' care, given that it permits their obtaining a balance in their health status to avoid complications. Regarding the perception of life of the patient with HBP, it changes upon knowing of their diagnosis; at the start, the reaction tends to be of rejection and resistance to adopting other eating habits and lifestyle;[2] thereafter, they reflect and know they will have to care for themselves for the disease not to cause complications.[4] However, there are patients who do not modify living conditions.[6] From the emotional sphere, diverse feelings are experienced that often the health professional is not capable of understanding; each being is unique and must be cared for independently.[7] Beliefs with respect to managing the disease play an important role when establishing care guidelines, as well as the culture with the life habits.[8]

In nursing, theoretical referents exist that are part of the essential component of the discipline, one of them is the theory of caring by Kristen Swanson,[9] which represents care based on the maintaining belief in patients, anchored on knowing the reality of the other, transmitted through being with, and enacted by doing and enabling.

It was deemed pertinent to use this theory in the research, given its relevance for the nursing discipline and thinking on the wellbeing of the individual

with HBP to achieve manifesting their feelings, thoughts, and behaviors. Additionally, using this theory will permit moving toward taking care actions in this type of individuals, starting from the fact that they tend to have difficulties in finding the relationship between the theoretical referents and the practice. The study sought to analyze the report of the experience of the person with high blood pressure in light of the theory of caring.

Methods

This was a qualitative research with autobiographical narrative-type design,[10] applying the theory of caring. This project was carried out from June to August 2018 in the San Vicente de Ramiriquí Hospital in Boyacá, Colombia. The sequence of actions considered to approach the narrative study was thus: (i) *Election of the context and participants*: these were contacted with the database provided by the manager at the San Vicente de Ramiriquí Hospital, in the municipality of Ramiriquí in the department of Boyacá (Colombia); (ii) *Immersion to the field* was conducted through recognition and subsequent revision of the site to recreate the life history, experiences, and events; (iii) *The Selection of participants* agreed on attending the meeting of the Program of caring for chronic patients held once a month in the health institution. The research objective and the guarantee of confidentiality of the information shared were explained. The work also consulted the clinical histories to enrich the study; (iv) *Application of the theory* by Kristen Swanson, explored the meaning of the experiences narrated and documented. The first story was developed to collate and cross it with sources from the theory, verifying the facts and perspectives from the different participants; and (v) *Units, categories and themes of the narratives,* establishing coherence between that said in the interview and how it was said through observation and field notes.

The report was made, then these results were revised by experts in qualitative research and who have applied theories; thereafter, it was returned to the participants to introduce the definitive version. The sampling was selective, judgmental, or intentional because it offered in-depth and detailed information on the purpose of this research. Inclusion criteria considered elderly adult patients diagnosed with HBP for at least six months prior to conducting this study, who voluntarily participated in the research. Some were approached personally, after attending the scheduled medical control and others via telephone. Initially, fifteen patients were summoned, two of which did not accept to participate due to work occupations and one withdrew during the middle of the study due to personal reasons. With this group, the first interview exercise was begun. The narratives were transcribed exactly as the person expressed them, in maximum spontaneity, giving as much freedom as possible. To preserve the identities of the participants and give the reports poetic nature, their names were changed for those of some flowers.

To gather and analyze the information, which were conducted simultaneously, the open, in-depth interview, participant observation, and field notes were used. The hospital director provided a room for the meetings with the participants; it was a place with privacy and tranquility for the participants. During the interview, the researchers supported on their experience, carried out several extensive sessions (on average, three meetings with each person) and detailed, starting with guiding questions, like: How do you care for yourself since you were diagnosed with HBP?, Do you know what is the cause of your disease? According to the answer, new questions were made. These were recorded and transcribed textually with prior signing of the informed consent, agreeing on the meeting with the participants. Three meetings took place, in each of them the story was again addressed and progress was made in the depth of the story. The interview lasted from 30 to 60 minutes. A conscious position was assumed, placing trust on the person telling the story.

The techniques and analytic procedures mentioned permitted the researchers to develop a substantive theory, compatible with the phenomenon observed. The analysis was a cyclical, flexible, dynamic and creative process, while systematic. The concepts were denominated and categories defined, through the constant comparative method. Coding was performed at three levels: (i) *Open coding*: this level performed an initial descriptive analysis of the codes (specific words of the participants) and of line by line and phrase by phrase, looking for words to generate codes and define categories. The data were compared and each interview with the previous, underscoring relevant words and phrases that expressed aspects of the phenomenon under study; (ii) *Axial coding:* this level identified, the relationships between the codes and categories. Hence, the data was again joined through induction and abstraction to establish connections between codes and categories, similar categories were grouped and new data with emerging codes to construct initial relationships; and (iii) *Selective coding:* this level integrated the categories, in search of a central one, to construct a larger theoretical scheme. Triangulation of information was carried out when calling on other informants, databases from the health institution, and personal documents, like clinical history, in search of the confirmation.

To grant validity to the research, rigorous methodological criteria were kept in mind during the research, such as credibility, dependency or consistency, and confirmability. The research was approved by the ethics committee at the San Vicente Hospital in Ramiriquí, dated 20 June 2018. Ethical principles were kept in mind with the signing of the informed consent.

Results

This study had the participation of 12 patients (7 men and 5 women), ages ranged between 50 and 91 years. Nine of them have endured the disease for over five years; 40% live with their children; 35% live with their spouse and children; and 25% with other relatives. The following will describe the principal research results, according to the five caring processes proposed by Swanson.[9]

Maintaining Belief

The orientation of caring for patients with HBP stems from a fundamental belief in them and their capacity to overcome obstacles imposed by the disease. Elderly adults tend to have physical and emotional changes in their health status; the fact of living with HBP faces them with challenges they must confront to learn to assimilate the disease. Among the caring beliefs, they recognize those of religious type and others that have been passed on from generation to generation from home practices: *I have learned to prepare my remedies, take them, then I go to the medical check-up and keep the tension controlled, mandarin juice and that of apple with spinach and celery relieve my stress and lower my tension* (Alhelí, female, 56 years)*; Well I say… what can we do now! Those are the evils of old age and you must adapt to everything; I have accepted positively this disease, these are the things God sent us, I faced reality and learned the most-serious consequences to raise awareness* (Narciso, male, 77 years).

I tell you, sometimes I drink the herbal teas with lemon, with lots of faith for them to do me good, let God's will be, whatever He wants for me. I use pork lard and rub it where it hurts. For example, if my heart aches, I rub it there, but I have to do it immediately once I get the discomfort because if I do it later it does not work; I apply a little on my forehead in two crosses with massage and it goes away. (Orquídea, woman 91 years); *the truth is that I use home remedies, figs, parsley leaves and lemon balm, all that to make herbal tea. I also use lemon bee brush when my nerves are altered. I confess that the disease has*

affected me tremendously, given that I cannot do the same as before, every year I use to raise four cattle in the moor farm, and now I only have one cow and a calf in the paddock, I can no longer take care of them the same way, I even had to sell the farm to burry my husband and a son and some money was left over and I have it in the bank for the children to study (Violeta, female, 73 years); *I use garlic, I peel them, chop them up and eat them raw with water, I use two or three garlic cloves each time my pressure rises; when I eat them, I feel I improve and the fast beating of my heart stops.* (Azucena, female, 69 years).

Knowing

Understanding the patients' lives permits recognizing knowing their care needs, which have to do with the lack of information about the disease and its treatment, as well as the importance of comprehending and respecting the eating habits and benefits generated by complying with the medical prescription and recommendations offered by the health staff. This is a compromise between the care giver and the subject of care: *For me, going to the hospital is a routine procedure, they care for me, give me a prescription, I claim the medications and leave to continue with my tasks. I prefer not to ask so that I am not kept late, that is why I really do not know what is the cause of this disease and why they give me so many medications* (Clavel, male, 51 years)*; They always make me arrive 10 minutes before the medical consultation, I need to rest for five minutes, then they take my vital signs and weigh me. After this, they send me with the massage doctor and with the nurse to perform some exercises* (Gardenia, female, 68 years)*; When I go to the medical consultation, they ask me how I'm feeling; if I tell them I am well, they prescribe medications for three months, but only give me enough for one month. Then I go claim my medications, there they give me some recommendations. I always look at the color, size, and shape of the pills, but do not stop to look at the name. They explain which ones I have to take in the morning and which ones in the afternoon (Azucena, female, 69 years); Sometimes I am not satisfied with the care because I've told the doctor that the yellow pill does nothing to me, but he keeps prescribing it, I only take the red ones when I start to get a headache, but I don't have enough information of what happens to me* (Geranio, male, 68 years); *learning to eat without salt has been somewhat difficult; however, I have gotten used, I try to eat fruits, vegetables and sometimes I take the skin off the chicken, but I won't refuse to eat a good farm chicken. I'm told I have to exercise, but the truth at this age I don't like to, sometimes I get scared because my tension rises sky high* (Tulipán, male, 79 years); *I want to tell you that I do my massages, if my tension rises I make two crosses on the forehead and lie down a while and when I feel normal I get up again to do my chores* (Orquídea, female, 91 years).

Being with

The participants managed to share some feelings and trust was generated with the researchers who understood their specific situation. Certain fears were highlighted, especially that of death as something unexpected for some and predictable for others. The relationship established permitted motivation to know more about the disease: *you have to die of something, I can't tell you what because, for example, doctors have told me I'm dying of hypertension or through a heart attack or of a stroke, of those three things I might die. Every day when I lay down, I think about death, we don't know the day or moment, but it will arrive.* (Orquídea, female, 91 years); *I almost can't go anywhere alone, I am afraid; I have fainted at home, I already paid for a mass to ask God to help me, He is the biggest doctor.* (Violeta, woman 73 years); *I do not fear death, if it arrives, it arrives, someday it must be, you don't have to fear it. It is like a plant, it is born, grows, reproduces, and dies and that's how we are, sooner or later the moment arrives. I see many who want to die, but death arrives when Dios wants not when you want* (Crisantemo, male, 63 years).

Doing for

Each individual copes with the disease differently: some seek support from the family and consolation from friends, while others are more reserved with the health situation: *I usually don't tell my family what happens to me, I only get up and take my medications or me rub myself because I fear causing them worry and stealing their peace at work and study, I prefer to stay quiet and place myself in the hands of God, which cures all evil, sometimes a neighbor comes to visit and she listens to my regrets* (Orquídea, female, 91 years)*; For me, it has been very hard to live with this disease since I was diagnosed, but over time I began to assimilate it. My children have become great support and, thus, everything has been a little more bearable.* (Gardenia, female, 68 years); *I have gotten used to the hypertension, with God's help and especially my family that always supports me to deal with this disease. As I said, in this you must have will power, although sometimes you want to give up, but, finally, everything is a habit, but I get tired of taking so many pills (medication)* (Clavel, male, 51 years).

Enabling

This process was evaluated from two aspects; on the one hand, self-care actions were discovered and on the other hand, it favored the expression of opinions regarding the disease: *I know I should take the medications for life and at the time indicated by the physician; on the contrary, this disease will worsen and I can die. I also stopped eating so much salt, I am mindful of what I eat, now I am more aware that I must do my part, I am checked by some doctors and the nutritionist. They also told me to exercise, but sometimes my legs hurt too much* (Lirio, male, 73 years); *Now I behave more, I do exercise and walk every day, I've lost weight and that has also helped me to control the disease, my daughter tells me I should do what the doctor says, go to controls and watch my eating. However, I don't like eating without salt, I cut back on carbohydrates, eat vegetables, and drink lots of liquids especially water (*Geranio, male, 68 years).

Since I got the disease, I never touch the salt shaker, not even to eat an egg, but I don't have time to do exercise. I try to take the pills at the times ordered, I keep them in my shirt pocket, but sometimes I forget, then I take them until I remember (Narciso, male, 77 years); *I stopped drinking alcohol because I used to drink with my husband, two shots in the morning, after lunch and at night given that we had a grocery store we also drank with friends, but not to get drunk only moderately. Alcohol is poison; I also consumed too much hot sauce. Once I ate fried foods with lots of hot sauce and suddenly a vessel exploded (a blood vessel burst). I was taken to the hospital and the bleeding would not stop. (Violeta, female, 73 years); No more salty potatoes, juices blended in sweets because my sugar level will rise and the cholesterol and alcohol has been difficult to leave; it was always hard to change my feeding habits. I also had to change friends and bad company doesn't bring anything good* (Violeta, female, 73 years)*; I think I got this disease by eating too much salt and eating too much fat, I loved fried foods, junk food and cooked with lots of salt, I also ate fried pork, greasy soups and many carbohydrates, besides, at home we were always fighting* (Jacinto, male, 75 years); *I got this disease due to the loss of my son, sadness and desperation overtook me and since then I got sick, stress at work was terrible and that also raised my tension* (Gardenia, female, 68 years); *I think I got sick because I was not exercising or walking, given that I spend my time sitting, I do not engage in any activity to improve my pressure* (Tulipán, male, 79 years).

Discussion

Through Swanson's theory, the human is perceived as a unique person, manifested through feelings, thoughts, behaviors, and life experiences.[9]

According with the testimonies presented in each process, it should be highlighted that *Maintaining beliefs* occurs through religious practices and use of traditional medicine with home treatments to control blood pressure.[11] The population in Boyacá has strong cultural roots that could cause lack of adherence to the pharmacological treatment. This concept coincides with the results in the study by García, R *et al*., which found big benefits in using natural remedies compared with the pharmacological treatment, in addition to being safer because they do no harm in the organism.[12] Another recommended use also accepted by the participants in the research is garlic to diminish blood pressure.[13,14] However, the effect changes according to how it is taken, the best way is in extract because it increases the concentration of S-allyl-cysteine that is tolerable and functional; rather, when eating it whole, one of its components denominated Allicin, is volatile and unavailable.[14] According to the aforementioned, it is possible to state that people's beliefs along with the biological, cultural, and family factors are important to assimilate the treatment, hence, the importance of establishing agreements between the patient and the health staff about the treatment's parameters.[15]

Regarding *Knowing*, patients state that they have little information about the disease and the reason for the treatment, but try to comply with it; this coincides with García *et al*., and Ried, F, who conclude that users try to obey the medical prescription even if they do not strictly follow the indications,[12,16] or as stated by a participant, they take the medications only in case they have any symptom (dizziness or headache) or when they have high blood pressure.[17] Learning to eat without salt has been a difficult habit to acquire, is one of the testimonies in this study that coincides with Negreiros and Asakura who report the low-sodium diet as one of the practices with greatest inconvenience to follow the treatment.[18] Literature reports the benefits related to physical activity;[19] however, in this study it was not found practiced by all the participants.

Listening and sharing the individual's feelings of concern and sadness are included in *Being for,* which reported fear of death and the worry caused by having a serious disease. The affliction, suffering and fear of having BPH are also expressed as a threat to life that leads to suffering with resignation.[5,17]

Doing for was manifested through consolation and support from the family, neighbors, and friends. This coincides with Moura *et al.,* regarding support from relatives and friends complying a role in adapting to new habits in hypertensive patients, thereby, strong commitment is required from everyone.[20, 21]

The analysis of the concept of *Enabling* described the self-care actions; one of them is to walk every day. This practice is considered as low-cost and minimum-risk physical activity that most humans can perform. Evidence shows that it offers positive effects in lowering systolic pressure, diastolic pressure or both.[22] The participants expressed their opinions to protect health, with diminished intake of salt and fats and moderate practice of physical activity. It is necessary to participate self-care to comply with the treatment,[23] some of the practices include diminished salt intake, increased intake of fruits and vegetables, and enhanced physical activity.[24-26] Many patients have modified their eating habits by following the recommendations by the health staff, in spite of not agreeing and that it is not pleasant to their taste; the changes consist principally in diminishing intake of fried foods, sugar, and salt and adding fruits; the whole family joins these new habits.[7]

This study concludes that in the analysis of narratives of the experience of patients with high blood pressure, the five caring processes by Swanson were recognized. The integral assessment nursing makes of these individuals is fundamental, respecting their beliefs, learning to know it, sharing their feelings and fears as fundamental concepts of care and, thus, permitting to advance in the disciplinary development.

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Morinian Complexity and the Nursing Curriculum

Essay

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Morinian Complexity and the Nursing Curriculum

Abstract

This scientific essay argues about the relevance of including Edgar Morin's complex thinking in the Nursing curriculum development. The curriculum determines the professional profile of Nursing teachers and future nurses, comprising the cognitive, moral, clinical, affective, research and trade union competencies necessary for professional survival. Complexity allows us to build new creative and critical curricula, with multidisciplinary thinking, connecting fragmented knowledge, defending one's own cultural identity, based on the Philosophy of care, and responding, in parallel, to the challenges of a politically imposed globalization, which is elective. The design of curricula that respond to the demands of the 21st century requires competent curriculum engineering able to triangulate Nursing, Education and Philosophy, given that citizens are been trained and not only specialized workers. The sciences of complexity humanize and complement the

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Cartesian and positivist scientific approach, influenced by the patriarchal paradigm. The curriculum changes its structure by including complex thinking references.

Descriptors: education, nursing; nursing care; curriculum.

Complejidad moriniana y currículo enfermero

Resumen

Este ensayo científico argumenta sobre la pertinencia de incluir el pensamiento complejo de Edgar Morin en la cultura de elaboración de currículos de formación de Enfermería. El currículo determina el perfil profesional de las enseñantes y de las futuras enfermeras comprendiendo competencias cognitivas, morales, clínicas, afectivas, de investigación y sindicales necesarias para la supervivencia profesional. La Complejidad permite construir nuevos currículos creativos y críticos, con pensamiento multidisciplinar, conectando conocimientos fragmentados, con defensa de la identidad cultural propia, basada en la Filosofía del cuidado, y respondiendo, en paralelo, a los desafíos de la globalización políticamente impuesta, la que es electiva. El diseño de currículos que respondan a las demandas del siglo XXI exige ingeniería curricular competente en triangular mínimamente la Enfermería, la Educación y la Filosofía, dado que se forma a personas ciudadanas y no solo a obreros especializados. Las ciencias de la complejidad humanizan y complementan el enfoque científico cartesiano y positivista, influenciado por el paradigma patriarcal. El currículo cambia su estructura por la inclusión de referentes del Pensamiento complejo.

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

Complexidade Moriniana e currículo enfermeiro

Resumo

Este ensaio científico argumenta sobre a pertinência de incluir o pensamento complexo de Edgar Morin na cultura de elaboração de currículos de formação de Enfermagem. O currículo determina o perfil profissional dos ensinamentos e das futuras enfermeiras compreendendo competências cognitivas, morais, clínicas, afetivas, de investigação e sindicais necessárias para a sobrevivência profissional. A Complexidade permite construir novos currículos criativos e críticos, com pensamento multidisciplinar, conectando conhecimentos fragmentados, com defesa da identidade cultural própria, baseada na Filosofia do cuidado, e respondendo, em paralelo, aos desafios da globalização politicamente imposta, a qual é eletiva. O desenho de currículos que respondam às demandas do século XXI exige engenharia curricular competente em triangular minimamente a Enfermagem, a Educação e a Filosofia, dado que se forma a pessoas cidadãs e não só a obreiros especializados. As ciências da complexidade humanizam e complementam o enfoque científico cartesiano e positivista, influenciado pelo paradigma patriarcal. O currículo muda sua estrutura pela inclusão de referentes do Pensamento complexo.

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

Introduction

> "In the same way that light bathes all things and each thing receives and reflects the rays that it is capable of receiving and reflecting, so the inspiring flow of the search for the Path passes through the souls of men and each soul retains what is capable of retaining and reflecting. "
>
> -Mabel Collins. *Light on the Parh;* 1885-[1]

Since the beginning of the 20th century, the importance of dealing with urgent social issues, including education, health and ecology, was preached in the educational environment, with a futuristic and possibly unintelligible vision for the international political sphere. In the middle of the last century, critical curricular trends rooted in the Frankfurt and Budapest Schools proclaimed a curriculum organized around real-life issues, meaningful to learners and with issues involving democracy. Less than a quarter of the 21st century, bio-psycho-social-spiritual problems are international and, therefore, those of female nurses have become more acute. If the changes have not been implemented in time to avoid their criticality, it is because teachers continue to stumble across old educational schemes when designing their study programs. Edgar Morin opens a promising possibility where the pedagogue has the responsibility to take the risk of walking on other paths and to teach them to the nurses.

The curriculum pathway

If the heart of the classroom is the lesson thought, programmed, delivered, directed or supervised by the teacher, soul of the classroom, the skeleton that supports the essential knowledge, essential values and fundamental professional and human abilities is the disciplinary curriculum. Scientifically, the educational curriculum is the essential structure supported by a set of criteria such as the study plan, the program, the subjects, the didactic units, the pedagogical models, the methodologies and the processes that contribute to the integral education of future nurses in their knowledge and know-how.

The curricular structure consists of concrete approaches that include four basic elements:[2,3] (i) *Objectives*: they describe the purpose of the program and the subjects answering the question: what is the purpose of teaching? They define the learning objectives of the future nurses. This component needs to be accompanied with the description of the pedagogical approach used. Currently, the objectives of Taylorian origin are called competencies;[4] (ii) *Contents*: they are the information that will be taught during the program and answer the question: what to teach? The contents are selected based on the objectives proposed with the aim of achieving the educational goals

stated in the national policies. Philosophies, theories, models, concepts, theoretical, practical and procedural principles such as laws, codes of ethics, techniques, protocols, methods, strategies and health and nursing policies are part of the contents in Nursing; (iii) *Teaching methodology*: it corresponds to the way in which the contents will be approached to achieve the stated objectives. It is linked to the selected pedagogical theory. It answers the question: how to teach? The teaching role and the role of the students are explained. Actions and activities, with the necessary means, resources, place and time are planned. The art and science of the teacher will be revealed in this crucial stage: it represents the critical link between the subject matter and the understanding that the students will make. The appropriate methodology facilitates the learning of the different contents. A technique is neither taught nor learned in the same way as a theoretical notion. With experience, the teacher develops his/her own teaching style and philosophy. The students develop their own learning style; and (iv) *Evaluation*: in this stage the progress of students during a subject are analyzed and measured, and within a study program. Likewise, the quality of the teaching intervention is also analyzed and measured. If the teaching-learning style, the amount of content, the time allocated, the group intellectual rhythm to assimilate the contents have been adequate for the proposed objectives, the adequacy will be reflected in the evaluation results. Frequent evaluations with early communication of their results are recommended. Assessment reinforces the knowledge acquired and motivates learning.

The curriculum acquires instrumental value, conceiving Education as a mere technical process that produces results, that is, nurses strictly aligned to what is programmed, to technical rationality, so that they meet the demands of the local, national and international economy. It is important to highlight that this curriculum is traditionally directed at women, according to Arroyo:[5] "the nursing profession is a female-dominated profession. The act of caring for has been associated in very diverse societies and cultures, and over time, to the female gender. "It is not uncommon to observe that female nurses care and male nurses rule, being the latter those who occupy hierarchical institutional positions[6] sometimes obtained without honesty.

The curriculum is a causal, perpetuating and reproductive means of violence, of oppression of the autonomous critical spirit and of other serious social flaws: it has the tacit objective of suppressing the opposition between genders, between the dominant-submissive relationship, it normalizes people's capacities affecting work processes in today's society.[7] This curriculum discards the possibility of analysis and criticism by nursing pedagogues.

The curriculum is an educational policy that responds to other cultural policies of colonialism such as those related to gender as well as economic, social, health, environmental and, the almost forgotten humanizing policies. A curriculum must contemplate the indispensable academic, material and physical human resources to implement it. The current trend is to develop cognitive competencies detached from ethical-social values[8] that make societies less rational and relational, more unjust and inhumane with a simulated civilization. The product of this curriculum is creating a society capable of committing the worst atrocities without remorse, demanding from others what it is not capable of giving itself.

Getting into action

A multifactorial analysis of causes, most of them vertical, rarely horizontal and almost never circular, give rise to the curriculum. Historical, sociological, cognitive, behavioral, and lately, economic reasons determine its form: reality affects the curriculum and its power lies in the fact that it affects reality. During the 1960s Edgar Morin, with his Complex Thinking, produces a titanic intellectual work, philosophically positioned

within the Anthropology of Knowledge. His vision implies the reorganization of various theories that emerged in the '40s: those of information, cybernetics, systems, self-organization, among others. His thinking is parallel to the constructivist educational current interested in the students obtaining meaningful learning and that, as Morín said: "... all knowledge today needs to be reflected, recognized, situated, problematized ..."[9] With Morin, the cult to the linear, sequential and rigid is broken, honoring the thinkers of Classical Greece who promoted the need to integrate the dialectics among all the phenomena of reality. Consequently, there is no canonical way to design the curriculum: circularity, helicality, spirality, and unthinkable forms make sense, linking knowledge, process, phenomenon with one another.[10]

The idea of circles, cycles, chains, and unions between processes and actors are close to the real reality. Causality is circular: uninterruptedly effects act on causes and causes on effects.[11] It is the notion assimilated in Morin's Principle of Recursion, where the product becomes a producer. The skeleton of the curriculum is replaced, or, for the most skeptical, supplemented and reinforced by the hologram.

The nurse, core of the curriculum

When we say *nurse* we refer to the person mastering the science of Nursing, whose aim is to care - the name of the discipline would be a mistake, pointing to what is sick and not to the care to the sick. The name for the science of looking after others will be *Careology* establishing a direct relationship with the preservation and protection of life, which includes ecological health. The logic of the work *La tête bien fait* by Morin refers to a well-planned curriculum focuses on the nurses and the care.

The caregiver is a living system open to their social environment and the curriculum should reflect this aspect: open up to their bio-psycho-social-spiritual human condition, to the knowledge they possess and that they need to incorporate, to social situations which they face with different actors related to their profession. These aspects have an impact on their quality of life, threatening their health and that of their family. The nursing professional has been entrusted with health care in circumstances of poverty, many times being himself/herself in that situation and not only his/her client.

In a Morinian curriculum, the caregiver, the actors and the circumstances interplay. The nurses in the hospital are the bone marrow that supports its functioning and that also functions as a connective tissue because he/she coordinates activities of a varied nature. The real needs and problems that need to be addressed and solved in the field of higher education arise from these aspects. The main aspect in this context is to avoid the perpetuity, recurrence and emergence of problems that affect the nurses (physically, mentally and spiritually) and that have historically been related to gender. World Health Organization and International Council of Nursing report that approximately "90% of the nursing staff are women, but very few managerial positions are occupied by nursing professionals or women. Some data point to the existence of a wage gap between men and women, and to other forms of gender discrimination in the workplace".[12] The curriculum should approach what ought to be done without forgetting the human nature of the being that you are trying to educate, training him/her so that unjust situations are reversed.

The Morinian curriculum forces to articulate a close communication with different sciences. It is characterized by ideological pluralism. This transdisciplinary basis unites the disunited and humanizes it. Traveling from the limbs to the marrow and from the marrow to the limbs allows us to apprehend the whole and the whole makes it possible to understand the parts.

Nurses are biology, thought, emotion, sensation and action in changing disciplinary settings.

Various ideological aspects fall on them, imperfect human being, in their work context: human rights aligned to her gender; public and institutional health policies and those of the healthcare service in which they work; Ergonomics (to preserve part of their health); civil, labor and criminal laws; considerations related to Ethics, Morals and Deontology through regulatory codes of their thinking, attitude and conduct; trade union factors, which may or may not be favorable. Various sciences converge in the nursing curriculum intended for the profession of caring. They should focus on the effector as vehemently as they do towards the clientele. Anatomy is interested in the personal anthropometric and biomechanical aspects, may be affected by professional activity. Physiology represents the metabolic consumption to perform the tasks. The nurse's physiological systems can be functioning perfectly but under a scenario of pregnancy or metabolic disease, her performance and quality of life will be affected. Age is also an impact factor on quality of life in this profession and current working conditions play an unfavorable role leading to early aging and development of diseases.

The mentioned Ergonomics includes the interactions of the future worker with the technical system and with the environment. The Sociology of Work analyzes the fundamental change that workers undergo under the industrial or other model and questions the functioning of the labor groups. The Psychology of Work and Organizations studies the human behavior in contextualized work experiences from an individual, group and organizational perspective. Its objective is to describe, explain and predict these behaviors, but also to solve specific problems that appear in these contexts such as *mobbing* and abuse of power[13,14] with some examples found in teaching.[15,16]

Furthermore, Politics is about empowering the profession so that it achieves greater autonomy[17] but in action, it causes a shrinking crisis in the health sector, impacting on female working conditions.[18] Philosophy in Nursing fulfills several responsibilities within the profession, the axiological ones being paramount, related to human care where the ethic of the act starts on the caregiver. Other sciences are present in the nursing world: Administration, Engineering, Economics, Occupational Medicine, Industrial Hygiene, Safety at work, etc. which, analyzed from a critical perspective and the promotion of rights, would provide personal and professional self-assertion.

Reorganizing knowledge

The contents are organized around the particular, unique and concrete experiences of caregivers among colleagues, patients, health team, union - an international union of their own would be the most appropriate for this professional group, with 59% of the health professions worldwide,[12] professional organizations, employer sources, the art of caring, at a time, in a space, with a context and with material and physical resources. The sciences that reflect on the preservation of man, planetary life, the social and the human essences enter the field. The sciences are associated with each other and marry divorced cultures, such as holistic therapies, with a little presence in training curricula.

The Morinian position replaces heads full of disjointed contents and void of values with Têtes bien faites, which do science consciously and participate with constructive criticism in building a universally equitable society, which will positively affect the profession. Morin emphasizes the need for intellectual, moral, and affective development. Transdisciplinarity admits chance, uncertainty, holism, progress, chaos, disorganization, order, doubt, error and deviation, indicated by Nicolescu[19] "it moves away from the norm, supposedly indisputable, from effectiveness without brakes and without other values than effectiveness in itself, which is obviously based on the proliferation of academic and non- academic disciplines."

Enlightening awareness with science

The dialogue among different types of knowledge propels the cognitive development of nurses. The class integrates theory, research and social interaction. Analysis, criticism and creativity are encouraged in solving and preventing problems. A proportion of content and learning activities are left for students to propose, considering that some of them will emerge spontaneously out of necessity, respecting the position of John Dewey, in which the curricular contents respond to the interests of the learner focused on occupational activities that invite the integrated learning of the disciplines.[20] The daily life of nurses goes from art to science, dealing with professional, personal, collective, local, national and global aspects. James Beane's[21] curricular integration teaching proposal coincides with Morin in its democratic, socialist, progressive and unifying essence.

Nursing is an integral and holistic science per se, totally social, in which holistic and loving care should start from the group itself. The strengthening of personality of the individuality, of the self and of the collective professional image become important. Martin Seligman's Positive Psychology[22] makes a contribution through a curricular design that encourages the development of positive emotions. These make the nurse to be happy, a feeling that has a favorable impact on health, performance and life satisfaction. Social-ethical values become meaningful in the goal of universal happiness.

The Morinian perspective favors cultural identity construction which can be transferred to the concept of caring. Caring has its own nuances according to each geography, that is, it is identified with a nation, with regions, with localities and with personalities. Safeguarding the feelings and doings of Nursing a duty in the face of the advance of intellectual colonization imposed by globalization. Alternative regional and millennial therapies have their space in the Morinian thought, since their care philosophies address "integrity, cross-culturality and even unitary systems",[23] which are also supported by the World Health Organization,[24] which has included these as a strategy to achieve health for all. Diversity is richness and it must be defended. Complexity helps to understand the concept of social inertia, that is, the permanence and repetition of unpleasant and undesirable events for human life, in the local society or at a world scale. Apart from material and intellectual poverty, we have the maintenance of gender violence exerted against nurses. To understand this inertia is to equip nurses with tools to change it inaction: incorporation of feminist theories, Morinian thought, Paulo Freire's pedagogy of liberation,[25] Karl Marx's ideas about education,[26] Baruch Spinoza's philosophical argumentation about sad passions like fear, hatred, greed and cruelty that enslave us.[27] Sad affections diminish our potential to act and react. Parnet and Deleuze say that "We live in a rather unpleasant world, in which not only people, but also the established powers have an interest in communicating sad feelings."[28]

Liberating the curriculum

Traditionally victimized by the influence of positivism-Cartesianism-Taylorism,[29-33] the curriculum displays the following characteristics:

- Abstract with fragmented and disintegrated subjects of the interests, motivations and realities of the actors;
- Programs respond to the labor market and employer interests: it is third party;
- Dictatorial, prescriptive, authoritarian and standardizing;
- Theory and practice form fragmented systems and are, in turn, decontextualized;
- The student seen as a product to be created through homogenizing competences;
- Normalizing teaching of knowledge, behaviors and attitudes; mass production with robotization;

- Neutral, foreign, de-personified contents (colonizing and pressure learning);
- Memorization, assimilation, interpretation of imposed content;
- The teacher is manipulated by policies and sectors interested in producing workers;
- The teacher is the product of that curriculum: absence of critical thinking, conservative obedience; numbness of consciousness;
- Teaching of competences, capacities, contents that serve to enrich others by uncritical doing;
- Suppressed ethical-political discourse: crises, poverty, injustices arise out of nowhere and without responsibility;
- Avoidance of change and revolution, conformist spirit: status quo
- Static scientific content supported by scientific evidence limited to the subject.

Emerging from Complex Thinking, with holistic or integral educational positions, the curriculum becomes an object clearly differentiated from the previous one:

- Meaningful with multi-articulated subjects interested in the needs and individual meanings of teachers and students;
- Programs respond to the interests of the profession and to universal ethical principles;
- Flexible, democratic, liberating: it awakens the consciousness, enhances the human and the unrepeatability of being;
- Articulation between systems, theories and practices;
- Theory and practice at a time, in a place, with a culture, at a specific historical moment, with material, human and financial resources;
- Students conceived in their unique biographical bio-psychosocial-spiritual human conditions, with innate competencies, with rhythms and styles for being, knowing and doing and specific interests that they wish to learn;
- Teaching reinforces individuality in its diversity and reinforces collective strengths;
- Induced contents of the reality of the immediate environment: family, neighbors, group, neighborhood, city, etc.; with socio-historical-cultural relevance, complemented by another optional reality (Genuine and motivated learning);
- Memorization, assimilation, interpretation of content arising and applied from everyday environments, with real actors, linking systems with the idea of cause-effect analysis, incorporating new concepts out of necessity;
- Free and critical teacher interested in the common well-being and happiness for everybody;
- Teaching of competences, skills and contents that reinforce the personal and collective value of the profession, with a focus on being and knowing;
- Ethical-political discourse problematized in the daily care;
- Openness to change and revolutions, emancipatory critical spirit.

Contents energized by new and old knowledge that help to understand, preserve and increase the quality of life, be they scientific, empirical or intuitive, with the incorporation of metaphysics and advances in quantum science and others such as psycho-immuno-neuro-endocrinology, which are a challenge for higher education.

Liberating cognitive pathways

Nurses' intelligence is manifested in their cognitive ability to solve novel problems using their previous experience. Nursing educational processes should promote the potential of cognition through the

development of natural thinking skills, which works by establishing relationships. Most people think in a suboptimal manner: brain power is wonderfully infinite, but it needs a lot of varied information to ethically solve and create in freedom of action. Restricting the freedom to act kills creativity and intelligence. Educating involves transforming the mind of caregivers and enabling them to survive.[34] Thought modeling facilitates meaningful learning -as Ausubel suggests- by establishing relationships, networks, including new knowledge into existing gears.[35] Thus, uniting, analyzing and synthesizing the cause-effect relationships between organizations, realities, stories, close or distant, through systemic thinking, the caregiver breaks with the dynamics of blindness that oppresses her as a person and as a professional. The dynamics that underlie the problem base is unveiled and from there it is possible to generate changes.

Time of leisure, time for life

The word *leisure* derives from *school*, therefore, it is "the name by which we call the places where education is carried out, and even higher education, means leisure," Josef Pieper explained.[36] Aristotle, in his Ethics to Nicómaco,[37] says that one of the resources for living is having leisure: it is necessary for contemplative life, to delve into the meaning of life and for knowledge. From this comes "virtue is knowledge" according to Socratic teachings. Aristotle, in *Politics,*[38] mentions that leisure is the cardinal point around which everything revolves. However, the flawed curriculum denigrates this human need that has allowed many discoveries, such as that of Isaac Newton. If the nurse is not producing, doing something, even if that something is unethical and unhealthy for her/himself, she/he is considered lazy. Capitalism turns its face away from great truths of the human condition that do not suit it, even if science, which is applauded, states it otherwise.

Neuroscience research highlight the value of idleness and sleep, for example, humans replenish their energy and maintain their health with 8 hours of sleep, while women need 10 to 12 effective hours. Neuroscientist Andrew Smart[39] argues that doing nothing -really and truly nothing- leads to better brain function, with "innumerable benefits for health: the brain has a network called the default neural network that becomes very active when we are idle and that allows access to the unconscious, creativity and emotions." La dolce far niente (the sweet thing about doing nothing) is fruitful: love, wisdom, art, poetry, problem solving and creativity depend on it.

Complex thinking vindicates this precious treasure of humanity. The all-important Theory of Cognitive Load[40] proposed by Sweller, Ayres and Kalyugapara for teaching warns about the damage caused to the body and specifically to the brain through cognitive overload producing chronic stress, which involves other serious health consequences, along with other explanatory theories.[41]

Conclusion

Capitalist modernity discusses economic progress, associated with the instrumentalization of scientific knowledge, penetrating the heart of education: the curriculum, which disregards the human soul and the fragility of the being of both the person who teaches and the one who educates. Reality shows that world societies experience a marked decline in their quality of life. Nurses suffer the constant negative impact of shrinking public health services and negative labor reforms which ignore their biological and psychological condition, generating situations of institutional violence, accidents, occupational diseases and family disagreement.

Formal education obeys the paradigm of doing for a third party with a philosophical-social framework that forgets to form humans to be and to live, distancing itself from Ethics, deforming the human condition into something for the market.

Living to be happy is not even mentioned. Complex thinking rescues knowledge, healthy lifestyles, buried values that can be revived in the curriculum by critical pedagogues through their way of teaching. Humanistic quality knowledge with transfer in the example is part of education. Their absence in the so-called higher education is a shame. These cannot be weak in a curriculum nor in the personalities of teachers.

The future caregiver would be able to respond to her/his needs as a person so as to help with the needs and health problems of others and within healthy work contexts. Empowering future professionals in paradigms that claim the right to a full life must be reflected in caregiver teachers. The deontological obligation forces nurse mentors to review the philosophies, the purposes, the principles and the educational objectives that move away from a high quality of life. Happiness is a unique combination of what Seligman[22] calls "distinctive strengths" such as a sense of humanity, temperance, persistence, and the ability to lead a purposeful life. Nursing pedagogy teaches how to care to preserve life. This is not achieved without taking care of the caregivers and without defending the right to take care of oneself to care.

Applying Complex Thinking brings light to our profession, understood as survival. Good education is the key to success in life. Teachers have a lasting impact on the lives of our students. Rescuing the human, freeing the soul and helping to live with dignity depend on the committed reflection that we make about our teaching practices, which should also be decent.

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Social media use and health promoting lifestyle: an exploration among Indian nursing students

Original article

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Social Media Use and Health Promoting Lifestyles. An Exploration among Indian Nursing Students

Abstract

Objective. To evaluate the use of social media and the health promoting lifestyle profile of indian nursing students. **Methods.** A cross-sectional study was carried out with 125 students (89 undergraduate and 36 graduate) from various Nursing universities in India, who provided information on their sociodemographic data, the Bergen Social Media Addiction Scale (BSMAS) and the Health Promoting Lifestyle Profile (HPLP-II). **Results.** Regarding the BSMAS, the participants had an average of 12.8 (maximum possible = 30); 42% reported they frequently delayed their sleep due to using social media; 9% had excessive use of social media; by gender, men had higher total score than women. With respect to the health promoting lifestyle profile, the total average was 126.9 (maximum possible = 208); no difference was observed by gender in the total score and men scored better in the

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domain of physical activity; students living with their families had higher scores in the domain of health responsibility than those living alone; and graduate students had better scores than undergraduate students in the scale total and in the domains of health responsibility, spiritual relations, and interpersonal relations. **Conclusion.** There is excessive use of social media, especially among male students. This study also revealed lower scores than those desired in the domains of Health Promoting Lifestyle, especially for physical activity, health responsibility, stress management, and nutrition. Thereby, the findings may be used to improve health literacy on social media, as well as promote a positive lifestyle among nursing students.

Descriptors: social media; health promotion; healthy lifestyle; students, nursing; cross-sectional studies.

Uso de redes sociales y estilos de vida promotores de salud. Una exploración entre estudiantes de enfermería hindúes

Resumen

Objetivo. Evaluar el uso de las redes sociales y el estilo de vida promotores de salud los estudiantes de enfermería hindúes. **Métodos.** Se hizo un estudio de corte transversal con la participación de 125 estudiantes (89 de pregrado y 36 de posgrado) de varias universidades de enfermería en India brindaron información sobre datos sociodemográficos, la Escala de adicción a las redes sociales de Bergen (BSMAS) y el Perfil de estilos de vida promotores de salud (HPLP-II). **Resultados.** Con respecto al BSMAS los participantes tuvieron un promedio de 12.8 (máximo posible = 30); un 42% reportó que con frecuencia tenía retraso en el sueño debido al uso de las redes sociales; un 9% tiene uso excesivo de las redes sociales; por sexo, los hombres tuvieron mayor puntaje total que las mujeres. Pasando al Perfil de estilos de vida promotores de salud -HPLP-II- el promedio total fue de 126.9 (Máximo posible = 208); no se observó diferencia por sexo en el puntaje total y los hombres tuvieron mejor puntaje en el dominio de actividad física; los estudiantes que residen con su familia tienen mayor puntaje en el dominio de responsabilidad en salud que los que viven solos; y los estudiantes de posgrado tienen mejores puntajes que los de pregrado en el total de la escala y en los dominios de responsabilidad de salud, las relaciones espirituales y las relaciones interpersonales. **Conclusión.** Hay un uso excesivo de las redes sociales, especialmente entre los estudiantes varones. Este estudio también reveló puntuaciones más bajas de las deseadas en los dominios de estilos de vida promotores de la salud, especialmente para la actividad física, la responsabilidad de la salud, el manejo del estrés y la nutrición. Por lo tanto, los hallazgos se

pueden utilizar para mejorar la alfabetización en salud en las redes sociales, así como para promover un estilo de vida positivo entre los estudiantes de enfermería.

Descriptores: medios de comunicación sociales; promoción de la salud; estilo de vida saludable; estudiantes de enfermería; estudios transversales.

Uso de redes sociais e estilos de vida promotores de saúde. Uma exploração entre estudantes de enfermagem hindus

Resumo

Objetivo. Avaliar o uso de redes sociais e promotores de saúde no estilo de vida de estudantes de enfermagem hindus. **Métodos.** Foi realizado um estudo transversal com a participação de 125 estudantes (89 de graduação e 36 de pós-graduação) de várias universidades de enfermagem da Índia, que forneceram informações sobre dados sociodemográficos, a Escala de Adição de redes sociais Bergen (BSMAS) e o Perfil dos promotores de saúde no estilo de vida (HPLP-II). **Resultados.** Em relação à Escala de Dependência em Redes Sociais - BSMAS - os participantes tiveram uma média de 12.8 (máximo possível = 30); 42% relataram que frequentemente tiveram atraso no sono devido ao uso de redes sociais; 9% fazem uso excessivo de redes sociais; por sexo, os homens tiveram uma pontuação total mais alta que as mulheres. Indo para o Perfil de Estilo de Vida dos Promotores de Saúde - HPLP-II -, a média total foi de 126.9 (Máximo possível = 208); nenhuma diferença foi observada por sexo na pontuação total e os homens tiveram melhor pontuação no domínio da atividade física; os estudantes que residem com suas famílias obtêm pontuação mais alta no domínio da responsabilidade em saúde do que os que moram sozinhos; e os estudantes de pós-graduação obtêm uma pontuação melhor do que os graduados na escala geral e nos domínios de responsabilidade com a saúde, relacionamentos espirituais e relacionamentos interpessoais. **Conclusão.** Há um uso excessivo de redes sociais, especialmente entre estudantes do sexo masculino. Este estudo também revelou pontuações mais baixas do que o desejado nos domínios do estilo de vida que promovem a saúde, especialmente em atividade física, responsabilidade em saúde, controle do estresse e nutrição. Portanto, os resultados podem ser usados para melhorar a alfabetização em saúde nas redes sociais, bem como para promover um estilo de vida positivo entre os estudantes de enfermagem.

Descritores: mídias sociais; promoção da saúde; estilo de vida saudável; estudantes de enfermagem; estudos transversais.

Introduction

With technology advancement, social media use recently has become immensely popular leisure activities among adolescents.[1] Different social media such as *Whatsapp, Facebook, Twitter, Instagram, Youtube* etc. provide a common place where individuals own their account/profile and connect with people all over the world.[2,3] They get access to it by logging into their account from anywhere and anytime using smart phone, laptop or desktop. They interact with others by sharing their thoughts, pictures, videos and creative ideas through posts or blogs.[4,5] It is a wonderful platform of being praised or getting opinions from hundreds of real-life or virtual friends which can either boost the morale or down it as well.[6] Further social media gives the opportunity of meeting friends based on shared interest, chatting, mailing, playing games and gambling.[7,8]

Social media has been found to be used for various other purposes among medical, nursing or other health care students. A study conducted among medical students found entertainment, staying updated, socializing and academic purposes to be the main reasons for its use,[9] whereas another study mentioned its use for health related information.[10] Engagement with social media can be personal, professional, or both. A study from Turkey reported that 89.3% of the participants use social media for professional purposes.[11]

Social media was also found to be helpful in modification of health related behaviour.[12] Use of social media has bi-directional effect; for some it is a way of relaxation whereas for some it increases stress. Similarly, different terminologies were used over the studies, such as '*technostress*', referring stress due to overuse of information and communication technologies.[13] In addition to that, negative effects like '*social overload,*'[14] relentlessness of '*always on*' culture[15] and so on are on rise.

With the paradigm shift from medical to a public health perspective in mental health, physical and mental health promotion is an emerging field when considering the importance of holistic health. There is an alarming overgrowth in non-communicable diseases and mental health issues in India.[16,17] This can be addressed through encouraging individual responsibility towards adopting healthy life style considering that health promoting lifestyle plays a major role to promote both physical and mental health.[18]

According to WHO, healthy behaviour helps one be healthy as well as not have diseases.[19] In nursing, health promotion is considered to be an important concept. As they provide health education to the individuals, families and the communities, nurses are often expected to be role models of health promoting lifestyles for them. Nursing students are future health professionals who

will activate the common people towards health promotion.[16] So, it is important to ensure healthy lifestyle among nursing students. Many studies conducted in US and European countries, showed that university students were less involved in health-promoting behaviors.[20–22] Out of the domains of health promoting behaviour, healthy diet and physical activity were the most neglected domains. A study from Iran which was conducted among 500 students found lowest score in nutrition and physical activity.[20] Similarly, another study from Jordan which was conducted among 167 nursing students reported physical activity to be the lowest scored domain.[22] A study from Kuwait documented higher scores in spiritual growth and stress management for older students.[23] A few studies from India also found lowest scores for diet and exercise and showed age and gender differences in regard of health promoting lifestyle.[16,24]

For nursing students who have to stay in hostel, it may be exciting for the first time being away from home and taking on independent roles but for many, it brings new challenges, such as managing their finances, shopping and food preparation. Thus, focus may not be on healthier diet rather they prefer to opt for fast food, packet food or instant preparation of food. Other challenges might be time management, a lack of structure; which can lead to boredom, coping with loneliness.[25] These may navigate them to excessive use of internet or being online or available in social media. Their procrastination, laziness or stress of being always online may lead them not choosing a healthy lifestyle in terms of reduced physical activity or health responsibility. Besides, their young age makes them believe that they do not have much health problems which can lead to negligence of health promoting lifestyle.

Social media use have been found to be more among particular groups especially the youth and Social Network Site addiction is associated with impaired health and well-being.[15,26] Studies conducted to find out the usage pattern among nursing students in India are less and there is lack of empirical data for effect of social media on health promoting lifestyle which leads to the present study. The study aims to assess the social media use and health promoting lifestyle among nursing students. It also attempts to find out association between socio-demographic variables and their social media use as well as lifestyle behavior.

Methods

Study design. A cross-sectional descriptive study design was followed. Based on convenience sampling and their willingness, 125 undergraduate and postgraduate nursing students from various colleges of nursing in India who came for clinical experience in the year 2017-2018, took part in the study.

Instruments. *(i) Socio-demographic data sheet*. It was prepared by the researchers and included socio-demographic details, internet use details, biological functions, offline activities and substance use history of the students. Few open ended questions were to explore their perception about effect of social media on promoting health; *(ii) Bergen Social Media Addiction Scale (BSMAS); (iii)* It is a 5-point Likert scale adapted from Bergen Facebook Addiction Scale (BFAS).[27] It has six items where score ranges for each item from 1-5 with very rarely as 1 and very often as 5, yielding a total minimum score of 6 to maximum 30. The scale is composed based on the addiction symptoms such as salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse.[4] Higher the score in BSMAS, stronger the addiction to social media, and a total score more than 19 reflects the user is at-risk of developing problematic social media use;[2] *(iv) Health Promoting Lifestyle Profile II (HPLP II):* It is a 4-point Likert scale with 52 items including six sub-scales: *health responsibility*, *physical activity*, *nutrition*, *spiritual growth*, *interpersonal*

relationships, and *stress management.*[28] The author recommended to use mean of the sub-scale rather than the total scores. The higher score in HPLP-II shows the higher level of health-promoting behavior. The psychometrics of the tool is established[29,30] and it has been used in Indian settings too.[16]

Procedure. Permission was obtained from the respective college Principals or teachers. The subjects were explained briefly about the study and invited to participate. Informed consent was obtained from them. Both male and female students were included. They were seated in a room and data were collected by the first author who also clarified their queries. It took approximately 30 minutes to complete the questionnaire.

Ethical issues. The study obtained ethical clearance from Institute Ethics Committee. The participants were briefed about the study aim and objectives and requested to participate in the study. Written informed consent was obtained from all the participants and they were given freedom to withdraw from the study whenever they wanted. Confidentiality of the participants was assured as the data collection tools did not include any identifying information. Codes were used rather than names to ensure anonymity. Probes were used for eliciting response from each participant.

Data analysis. Data were analyzed using Statistical Package for Social Science (IBM Statistics SPSS 22) at a significance level of 0.05. Descriptive statistics were used for presenting the baseline profile of the participants and inferential statistics such as Mann-Whitney test was done to find out the association of health promoting lifestyle and social media use with socio-demographic variables. For the qualitative part, content analysis was done and data were presented.

Results

Sample characteristics. Mean age of the 125 subjects was 25.25 years (SD= 4.76). Majority of them were female (86.4%) and undergraduate nursing students (71.2%). Around 93% were single (the remaining 7% were married), 5.6% had children, 79% were from nuclear family and 70% were staying in hostel. Four percent of the sample had history of substance use (Table 1).

Table 1. Socio-demographic variables

Variables	Category	Frequency (%)
Gender	Female	108 (86.4)
	Male	17 (13.6)
Education	Under-graduate	89 (71.2)
	Post-graduate	36 (28.8)
Marital status	Single	116 (92.8)
	Married	9 (7.2)
Family type	Nuclear	99 (79.2)
	Joint	26 (20.8)
Residence	Family	38 (30.4)
	Hostel	87 (69.6)
Children	Yes	7 (5.6)
	No	118 (94.4)
Substance use	Yes	5 (4)
	No	120 (96)

Current internet and social media use in the sample. Around 97.6% said that they had access to internet and most commonly used device was mobile phone (84%), followed by laptop (4.8%). Eleven percent of the sample reported that they used both devices for accessing internet. Out of the participants who reported current internet and social media use, mean age of initiation of mobile phone was 17.02 years (SD=2.96) whereas access to internet was at the age of 16.8 years (SD=3.11). Mean hours of usage of internet for recreation purpose was 2.17 hours (SD=1.85) which ranged from 1 hour to as long as 14 hours per day. Most commonly used application was Whatsapp among the social media, (97.5%) followed by watching videos (86.1%), listening to songs (85.2%), other social networking sites (80.3%), email (66.4%), online shopping (29.5%) and pornography (4.1%). Eighty eight percent reported that they used more than one social media at a time.

Effect on sleep and other offline activities. Nursing students' mean hours of sleep at night was 6.64 (SD=1.13), which ranged from 4 hours to 9 hours. Social media use was related to frequent delay in sleeping for 42% of the sample. Sleep was delayed by 1 hour for 34.4%, 1-2 hours for 12% and more than 2 hours for 5.6% of the sample. Majority of the participants (88%) pursued some kind of hobby. Most common hobbies were playing games or doing exercise (25.6%) followed by dancing, singing or listening to music (20%), reading books (12%), cooking or gardening and watching TV (12%), talking with family and friends (12%) and drawing or writing poems (5.6%).

Perception regarding effect of social media on health promotion. Majority (67.2%) of the participants said that they shared messages on positive health regularly on social media whereas 32.8% did not. More than half (54.1%) said that they did not share any messages on importance of physical activity while majority of them expressed that they were happy to share messages on diet (61%), spirituality (54.9%) and inter-personal relationship (65.6%). Around 51% perceived that their friends also reacted positively for sharing these messages and they felt good about it. Overall, 85.2% of the participants felt that use of social media and especially sharing these messages promoted their life positively though 14.8% of them did not agree to same.

Social media addiction. Mean score of BSMAS was 12.79±5.4 which ranged from 6 to as high as 30. Table 2 shows item-wise score of BSMAS. Around 9% scored over 19 indicating that a significant portion may develop overuse of social media. Proportionately more percentage of students said that they felt using it excessively (13.2%), it helped them to overcome personal problems (27.9%), attempted to reduce its use but went in vain (27.9%). Around 24% used it to the extent that it had a negative impact on their studies.

Table 2. Item-wise BSMAS score

Items	Very rarely *n* (%)	Rarely *n* (%)	Sometime *n* (%)	Often *n* (%)	Very often *n* (%)
Item 1 "…spent a lot of time thinking about social media"	62 (50.8)	29 (23.8)	22 (18.0)	5 (4.1)	4 (3.3)
Item 2 "… felt an urge to use social media more and more"	48 (39.3)	26 (21.3)	32 (26.2)	13 (10.7)	3 (2.5)
Item 3 "… used social media to forget about personal problems"	40 (32.8)	22 (18.0)	26 (21.3)	23 (18.9)	11 (9.0)
Item 4 "… tried to cut down on the use of social media without success"	56 (45.9)	26 (21.3)	24 (19.7)	8 (6.6)	8 (6.6)
Item 5 "… become restless or troubled if you have been prohibited from using social media"	62 (50.8)	20 (16.4)	25 (20.5)	9 (7.4)	6 (4.9)
Item 6 "… used social media so much that it has had a negative impact on your job/studies"	45 (36.9)	24 (19.7)	24 (19.7)	17 (13.9)	12 (9.8)

Health promoting lifestyle. Table 3 showed that the mean total HPLP-II score was 126.92±19.46 (range 81-171). It was observed that higher mean scores in the subscales of HPLP II were for inter personal relationship (25.73±4.76) and spiritual growth (25.54±5.25). The lowest score was for physical activity (15.68±4.67).

Table 3. HPLP II total and subscale mean scores

Variables	Mean	SD	Range	Minimum and maximum possible score
HPLP II Total	126.92	19.46	81-171	52-208
Health Responsibility	19.86	4.47	10-34	9-36
Physical activity	15.6	4.58	8-32	8-32
Nutrition	20.2	4.17	11-33	9-36
Spiritual	25.54	5.25	12-35	9-36
IPR	25.73	4.76	13-36	9-36
Stress management	20.0	4.19	12-40	8-32

Association of socio-demographic variables with health promoting lifestyle and social media use. Table 4 showed that the BSMAS score was significantly higher among males than females and students who were residing with family, had more health responsibility than those who stayed in hostel. Education was significantly associated with total HPLP-II score as well as Health responsibility, spiritual and inter personal relationship domain.

Table 4. Association of socio-demographic variables with health promoting lifestyle and social media use

Gender				
Variables / Categories	Mean Rank		Z-value	*p*-value
	Male (*n*=17)	Female (*n*=108)		
HPLP II Total	74.26	61.23	-1.380	0.168
Health Responsibility	77.97	60.64	-1.840	0.066
Physical activity	81.56	60.08	-2.279	0.023
Nutrition	72.59	61.49	-1.178	0.239
Spiritual	70.68	61.79	-.942	0.346
IPR	62.97	63.00	-.004	0.997
Stress management	60.62	63.38	-.293	0.770
BSMAS Total	85.62	58.83	-2.863	0.004
Residence				
Variables / Categories	Mean Rank		Z-value	*p*-value
	Family (*n*=38)	Hostel (*n*=87)		
HPLP II Total	68.08	60.78	-1.036	0.300
Health Responsibility	73.05	58.61	-2.058	0.040
Physical activity	63.28	62.88	-.057	0.955
Nutrition	72.01	59.06	-1.844	0.065
Spiritual	60.04	64.29	-.605	0.545
IPR	62.49	63.22	-.105	0.916
Stress management	70.11	59.90	-1.455	0.146
BSMAS Total	65.96	60.97	-.715	0.475
Education				
Variables / Categories	Mean Rank		Z-value	*p*-value
	UG (*n*=89)	PG (*n*=36)		
HPLP II Total	56.96	77.93	-2.931	0.003
Health Responsibility	58.54	74.03	-2.172	0.030
Physical activity	61.30	67.21	-.828	0.407
Nutrition	59.48	71.71	-1.715	0.086
Spiritual	56.47	79.15	-3.176	0.001
IPR	57.53	76.53	-2.662	0.008
Stress management	59.70	71.17	-1.609	0.108
BSMAS Total	62.19	63.25	-.149	0.882

Discussion

The present study provides preliminary findings on influence of gender, education, place of residence and substance use among nursing 125 students on their social media use and health promoting lifestyle. The study documents characteristics of the study subjects (Table 1) and current internet and social media use as well as its impact on sleep and other offline activities. Majority of the participants were female (86.4%) which reiterates the fact that nursing in India is a female leading profession where in many states till now boys are not eligible for pursuing this profession. The study sample comprised 71% of undergraduate nursing students as well as 93% who were single and 70% were staying in hostel. This indicates that the nursing course is mainly a residential course. Though substance use is less, still it cannot be ignored as 4% of the sample had history of substance use. The study also documents that health promoting lifestyle is inadequately followed by nursing students (Table 3) and 9% of them were using social media more who might develop problematic use later. Male students had significantly higher BSMAS score and students who were residing with family, had more health responsibility than those who stayed in hostel. Significant association was found between education with total HPLP-II score as well as health responsibility, spiritual, and inter personal relationship domain.

Mean age of access to internet was 16.8 years indicating the adolescents to be the most vulnerable group of excessive internet use. Use of internet for recreation purpose was found to be extreme for few participants. Being on internet and scrolling over social media for 14 hours per day indicates continuous unhealthy over-involvement on social media. A significant portion of the participants had frequent delay in sleeping because of internet as well as social media use. Previous studies from India and abroad also support the current study findings.[3,31] A study conducted in southern India among employees (n=250) of various organizations, who were using internet for minimum a year, found that overall delay for going to the sleep was 1.6 hours for the sample.[31] Another exploratory survey conducted among nurse educator students (n=49) in Finland, reported daily usage of social media for many hours among nursing and other professional students.[3]

The present study finding showed that mean score of HPLP-II was 126.92, which indicated that students were at a moderate level of health-promoting lifestyle. Regarding the subscale scores, it was observed that the highest scores were for inter personal relationship and spiritual growth whereas physical activity had lowest score followed by health responsibility, stress management and nutrition. Prior studies are also in line with the current study findings.[22,29,32] A study conducted among undergraduate nursing students (n=167) in Jordan, found that mean score of total HPLP-II was 127.24±21.03 and spiritual growth had highest scores and lowest in physical activity.[22] Similarly, the research results from a study conducted in China found moderate level of health-promoting lifestyle practices among its students and they scored lowest in exercise and highest in interpersonal relations.[29] The findings are also supported by a study from India (n=124) where food practices and physical activity had lower scores.[16] This may be attributed either to their negligence or giving less priority to health because of their extensive theoretical and clinical schedule. Besides, residing in hostel always gives limited options for healthy food practices rather they prefer to go for fast food and other unhealthy choices. Similarly, the fact also supports another finding that the students living with family are more responsible for their health which reiterates the trend of students being away from home or living alone in the hostel and neglecting their health for lack of adult guidance.

Gender was found to be associated with mean HPLP-II score, as reflected by the girls scoring higher than the boys. Boys practiced

better physical activity than the girls; while in the remaining five dimensions, there was no significant difference between the genders. Mean score of BSMAS (12.79±5.4) was alarming as the scores ranged from 6 to as high as 30. The findings of association shows that the BSMAS score was significantly associated with gender. It was consistent with previous study findings from Norway (n=1,018) where male employees used more social networking site during working hours than females.[33] Another study conducted among Turkish university students (n=448) found similar results using different measures.[34] However, both the studies were conducted in the working places.

Education was found to be significantly associated with total HPLP-II score and subscales of health responsibility, spiritual, and inter personal relationship (Table 4). The findings that health responsibility, spiritual bases and inter personal relationship are more among post graduate students than the undergraduate students may be attributed to the influence of higher education. Undergraduate nursing students might not be aware of the health promoting lifestyle; higher the level of maturity, higher the level of coping and thus healthy coping may lead to healthy lifestyle adaptation. Majority of the participants (88%) pursued some kind of hobby or like to indulge in some offline activities. Online activities should be replaced by offline healthy activities. Students are the future citizens in any country. Their health (both mental & physical) can contribute to their ability to make a difference in society in the future. Hence, health and school personnel need to pay attention.

Health-promoting lifestyle among nursing students has been investigated by number of studies abroad.[20–22] However, in developing countries like India, health promotion is an important area of discussion as it plays crucial role in maintaining health. Adolescents and youth may neglect their health and give less priority to health promoting lifestyle. Coupled with recent addition of excessive technology use, they are more vulnerable to an unhealthy lifestyle. Though this area is receiving an increasing attention in research, still published data is limited. If an individual practices health-promoting behaviour, she or he is more likely to be healthy while avoiding diseases. Social media provides a common platform for engaging the public worldwide.[12] Though it has promised to have some outstanding effects in reaching the unreached population globally, for majority in their day to day life it brings some negative effects when not used in a healthier way. Data on health promoting lifestyle and social media use may help in finding some better way forward for the affected students.

Limitations. The present study was not an exception to certain limitations such as cross-sectional descriptive study and small sample size. As this study was only conducted with Indian nursing students, generalization of the findings in other countries has to be cautiously considered. However, there is a need for a larger and randomly selected sample to validate the study findings. The present work has implications based on obtained findings. There is a need to work on psycho-educative module for health promotion activities especially sleep hygiene, social media use and lifestyle change for nursing students. The present study did not explore the process of development of excessive to addictive use of social media, though it gave information about association of social media with sleep, physical activity and students' voice about their perception regarding use of social media on health promotion.

Further research. The present study findings highlight the health promoting behaviour of a certain group that belongs to the young adult group and effect of a new trend of social media on it. Similar study among adolescents and adult group as well as some age and culture specific interventional study could be an eye opener for health promotion research.

Conclusion. Use of social media has become an indispensable part of everyday life amongst

students. The findings showed the presence of excessive use of social media among male students. The social media was used as a modality to overcome personal problems. Its dysfunctional impact on academics was observed too. This study also revealed the lower scores of health promoting life style domains especially for physical activity, health responsibility, stress management and nutrition. Thus, the findings can be used to enhance social media literacy as well as for promotion of positive life style among nursing students.

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Face masks vs. COVID-19: a systematic review

Review

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Face masks vs. COVID-19: a systematic review

Abstract

The coronavirus disease (COVID-19) spread rapidly around the world. Two types of approaches have been applied to use of face masks as a tool to prevent the spread this disease in society. The aim of the systematic review was to assess the effectiveness of face masks against the novel coronavirus. A literature search was performed using different databases until April 30, 2020. Search terms were 'facemasks', 'novel coronavirus', and 'healthcare workers'. Five studies were included in the systematic review. A study stated that no difference between surgical and cotton masks. Also, two studies have emphasized the use of surgical masks or N95 respirators by medical staff, and two other studies emphasized the use of any type of face mask by general public. More studies in controlled contexts and studies of infections in healthcare and community places are needed for better definition of the effectiveness of face masks in preventing coronavirus.

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Descriptors: COVID-19; coronavirus infections; masks.

Mascarillas versus COVID-19: una revisión sistemática

Resumen

La enfermedad por coronavirus (COVID-19) se propagó rápidamente por todo el mundo. Se han aplicado dos tipos de enfoques al uso de máscaras faciales como herramienta para prevenir la propagación de la enfermedad en la sociedad. El objetivo de la revisión sistemática fue evaluar la efectividad de las máscaras faciales contra el nuevo coronavirus. Se realizó una búsqueda bibliográfica utilizando diferentes bases de datos hasta el 30 de abril de 2020. Los términos de búsqueda fueron: 'máscaras faciales', 'nuevo coronavirus' y 'trabajadores de la salud'. Se incluyeron cinco estudios en la revisión sistemática. Un estudio indicó que no hay diferencia entre las máscaras quirúrgicas y las de algodón. Además, dos estudios han enfatizado el uso de máscaras quirúrgicas o respiradores N95 por parte del personal médico, y otros dos estudios enfatizaron el uso de cualquier tipo de mascarilla por parte del público en general. Se necesitan más estudios en contextos controlados y estudios de infecciones en el cuidado de la salud y en lugares comunitarios para una mejor aclaración de la efectividad de las mascarillas para prevenir el coronavirus.

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Descriptores: COVID-19; infecciones por coronavirus; máscaras.

Máscaras versus COVID-19: uma revisão sistemática

Resumo

A doença de coronavírus (COVID-19) se espalhou rapidamente por todo o mundo. Dois tipos de abordagens foram aplicados ao uso de máscaras faciais como uma ferramenta para impedir a propagação da doença na sociedade. O objetivo da revisão sistemática foi avaliar a eficácia das máscaras faciais contra o novo coronavírus. Uma pesquisa bibliográfica foi realizada usando diferentes bancos de dados até 30 de abril de 2020. Os termos de pesquisa foram: máscaras faciais ',' novo coronavírus 'e' profissionais de saúde '. Cinco estudos foram incluídos na revisão sistemática. Um estudo indicou que não há diferença entre máscaras cirúrgicas e máscaras de algodão. Além disso, dois estudos enfatizaram o uso de máscaras cirúrgicas ou respiradores N95 pelo pessoal médico e dois outros estudos enfatizaram o uso de qualquer tipo de máscara pelo público em geral. É necessário mais estudos em ambientes controlados e estudos de infecções nos serviços de saúde e na comunidade para esclarecer melhor a eficácia das máscaras na prevenção do coronavírus

Descritores: COVID-19; infecções por coronavirus; máscaras.

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Introduction

The coronavirus (COVID-19) epidemic broke out in 2020 in Wuhan, China, and spread rapidly around the world. The severity of the disease now appears to be more severe than originally estimated.[1,2] Individual intervention approaches include improving personal hygiene (regular hand washing), wearing disposable gloves and using a face mask.[3] According to the general guidelines of the British Columbia Disease Control and Prevention Centers in Canada, the use of face masks is only recommended for sick people.[4] This inconsistency also applies to acute respiratory distress syndrome (SARS) and epidemic flu. The World Health Organization, the use of face masks recommends in low-risk conditions and respirators in high-risk conditions, but the Centers for Disease Control and Prevention (CDC) suggests the use of respirators in both low-risk and high-risk conditions.[5] The purpose of this systematic review was to investigate the effectiveness of face masks against respiratory infections, including coronavirus.

Methods

This systematics review was conducted by matching the guidelines provided by the PRISMA declaration. A survey of articles published up to 30 April 2020 about the effectiveness of face masks against coronavirus infections was performed using four electronic databases: PubMed, Scopus, Science Citation Index (Web of Science), and Google scholar. The following terms were used in the search strategy: ['Facemask' OR 'Facemasks' OR 'Mask' OR 'Masks' OR 'Respirator' OR 'Respirators'] AND ['COVID-19' OR 'Coronavirus' OR 'Novel Coronavirus'] AND ['Medical staff' OR 'Healthcare staff' OR 'health care providers' OR 'Healthcare providers' OR 'Healthcare workers' OR 'Health workers' OR 'Healthcare Professionals'].

Two researchers independently examined the titles and abstracts of all articles for potential liability in this review. They then evaluated the full articles to be included in the study. In case of disagreement, further study and evaluation with other authors was used to resolve data mining differences. Also, systematic review articles were excluded. But the references lists were searched for relevant papers. Further, a manual search was carried out with the first authors' reference database.

Articles were included in the study which; 1- qualified controlled volunteer studies of coronavirus filtration of respirators or face masks, 2- qualified observational or intervention studies of respirators or face masks to prevent coronavirus (COVID-19) in community settings or healthcare settings. The

primary search provided 101 citations. Of these, 61 studies were selected based on titles and abstracts. Then excluding irrelevant studies ($n=41$), 16 articles were accepted full-text review and were discerned for eligibility. The reasons of the excluded studies were as follows: editorials, Meta-analysis, systematic reviews and they were not written in the English language. Finally, five articles were considered relevant for inclusion in the study (Fig. 1).

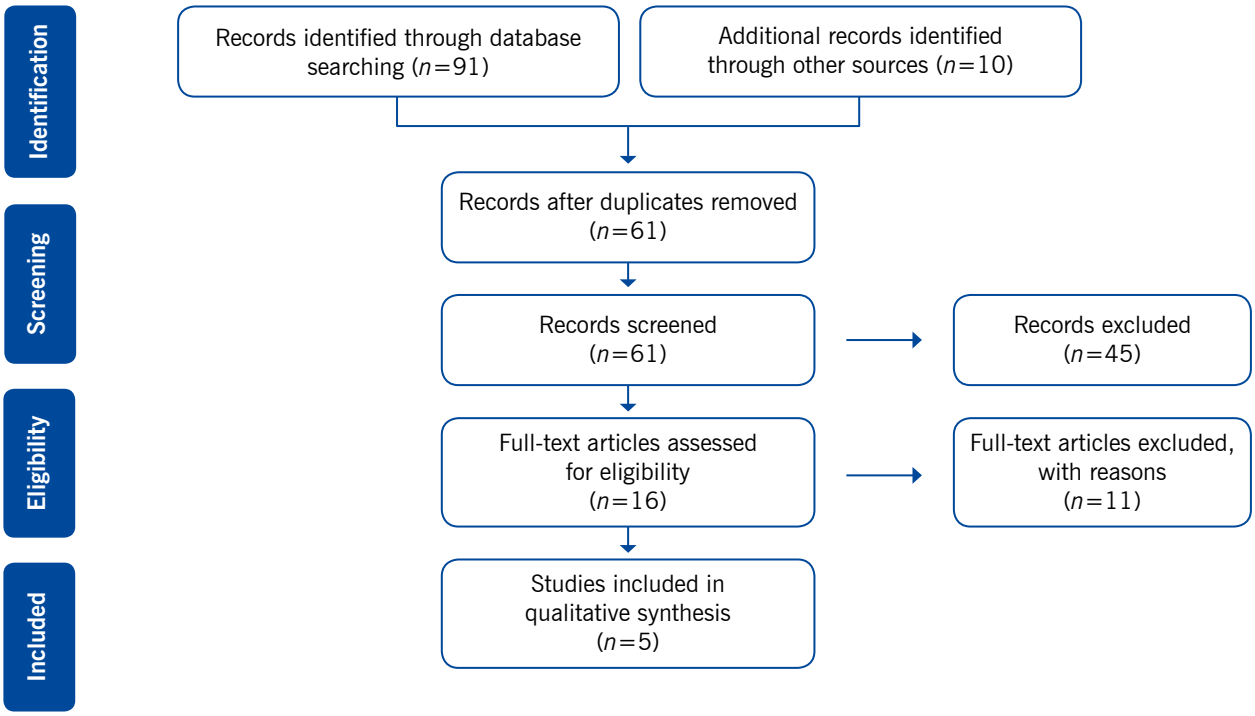

Figure 1. Flow diagram identifying relevant studies

Results

The surveyed studies were significantly different in terms of design, participants, interventions and actions. So this study focused on the description of studies, results, their application and limitations in qualitative composition, not on the meta-analysis (Table 1). Bae *et al*. (2020) examined the efficacy of surgical and cotton face masks in filtering SARS–CoV-2. They tested the performance of disposable surgical and reusable cotton masks to filter the virus in 4 participants, with confirmed coronavirus infection.[6] Patients coughed 5 times onto a Petri dish containing 1mL of viral transport medium held nearly 20 cm in front of participants' mouth. In four stages that were as follows: wearing no masks, surgical mask, cotton mask, and again with no mask. Also, both outer and inner surfaces of masks were swabbed with aseptic Dacron swabs. Coronavirus could be detected on the Petri dish specimens when participants coughed without a mask (in 4 subjects), coughing with a surgical mask (in 3 subjects) and coughing with a cotton mask (in 2 subjects). Also, all swabs from the outer surgical and cotton mask surfaces were positive for SARS–

CoV-2, and most swabs from the inner mask surfaces were negative. Limitations were that the study did not consider included other face masks as N95 and the role of air penetration around the borders of the mask.[6] In a retrospective study by Wang *et al*., the disease-related data ranged from January 2 to January 22, 2020, in six different wards (lung, ICU, infectious, pancreatic liver surgery, trauma, microsurgery and urology) from Zhongnan Hospital at Wuhan University, China. Health care workers from respiratory, infectious diseases and ICU wards which used N95 respirators, disinfectants, and cleaned hands frequently, entered the study as the "N95 group". Due to the lack of knowledge about COVID-19 in the early days of the outbreak, medical personnel in all other three wards of the hospital did not use any medical masks and occasionally used disinfectants and hand sanitizers. The group was considered a "without mask group". Suspected cases of COVID-19 infection were diagnosed with CT of the chest and confirmed by molecular diagnostic methods. Of the total patients, 28 confirmed and 58 suspected cases were identified during the data collection period.

Table 1. Studies conducted in healthcare settings

Study	Setting	Mask type	Findings
Bae *et al*.,[6]	2 hospitals, Seoul, 2020	Surgical & cotton masks	No difference between surgical and cotton masks
Wang *et al.,*[7]	A hospital, Wuhan, 2020	N95	emphasize use the N95 respirator by health care workers
Chang *et al*.,[8]	43 public hospitals, Hong Kong, 2020	Surgical mask	Attention to the principles of infection prevention in the hospital and use the surgical mask
Eikenberry *et al*.,[9]	A compartmental model	N95, Surgical & cloth masks	Use of face masks by the general public
Worby and Chang[10]	Epidemic models	Face masks	Face mask use

The medical staff's contact with COVID-19 patients in the N95 group was significantly higher than the group without mask. According to the results, it was revealed that out of 493 people in the N95 group which was consisted of 278 (222 nurses and 56 physicians), no one was infected by COVID- 19 disease. And in masked groups (136 nurses and 77 doctors), 10 were infected.[7] Chang *et al.* studied the preparation for infection control for coronavirus (COVID-19) due to SARS-CoV-2 in the first 42 days after the proclamation of pneumonia in China. Therefore, environmental samples and air samples were collected and analyzed. The RNA of virus was not detected in 8 air samples collected in a 10 cm distance from the patient's chin. It has been suggested that the virus is not transmitted through the airways, which is not reliable based on a patient's analysis. This can also be due to the rapid dilution of air inside the room separating airborne infection or airway. It was found that from day one to day 42 of the 1275 patients had positive test results of SARS-CoV-2 infection. Of the 413 health care workers confirmed, 11 (2.7%) were exposed to unprotected and quarantine for 14 days. However, no COVID-19 hospital transfers were observed and appropriate measures to control nosocomial infections were able to prevent SARS-CoV-2 nosocomial transmission.[8] A modelling study by Eikenberry *et al.*[9] suggested that use of face masks should be performed by the general public as much as possible and without delay all

around the world. Even if most of the masks are home-made and of relatively low quality. These measures could be of great help in controlling the COVID-19 pandemic, along with other non-pharmacological interventions that reduce community transmission. Another modelling study by Worby and Chang[10] found that face masks, even with limited protective properties, can reduce infections and death rates, and can delay the onset of the disease.[10] Therefore, the use of face masks, especially for a disease with asymptomatic conditions, is relatively common and can effectively reduce its spread.

Discussion

The present review study emphasizes on limited evidence to support the effectiveness of the face masks to reduce the transmission of the Coronavirus. An important concern when determining which public health intervention can be helpful in reducing the Coronavirus epidemic and which methods of infection control are essential to prevent the transmission of the disease, it is vital to know how the Coronavirus is transmitted between the individuals and the environment. It is recommended to use medical and fabric masks to prevent contamination of the healthcare workers.[7,9] People who do not have respiratory symptoms do not need to wear the N95 respirators, even if COVID-19 is prevalent in the area. However, the use of surgical and cotton masks in crowded environments (such as public transport) is recommended for high-risk individuals (the elderly, pregnant women, and people with underlying diseases), and it is important to note this. Hand contact with the outer layer of the mask should be avoided due to the accumulation of contamination.[6] The use of masks does not diminish the importance of other general measures to prevent infections.[6,7]

Conclusion. There is little evidence to support the effectiveness of face masks to reduce the risk of COVID-19 infection. However, the use of N95 respirators or air supplying respirators and adherence to the principles of personal hygiene, frequent hand washing and the use of disinfectants can reduce the prevalence of COVID-19 in health care providers. Due to the novelty of the COVID-19 virus, no clinical trials have been found on the use of face masks in disease prevention. Also, the use of face masks by people in the community, in addition to other health principles can help in reducing the prevalence of COVID-19 disease.

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