Editorial

Advanced practice nursing: specialized care and leadership in the construction of excellence in nursing

Acta Paulista de Enfermagem completed, in 2018, 30 years of commitment to the dissemination of knowledge in nursing and health. A scientific event was held to celebrate the anniversary, in which the future of the scientific journal was discussed, based on the historical recollection of its trajectory, scientific editing trends, altimetry, international relevance and compliance in the publications. In addition, this special edition on advanced practice nursing was edited.

Advanced practice nursing is a nursing area in which nurses work in the provision and coordination of patient care in primary and specialized health. Nurses can work in a wide variety of health settings, including hospitals, medical offices, nursing care offices, schools, and clinics. They take care of patients as well as interact with the public, often serving as a link between physicians and patients’ families. Their advanced background means that they have a higher level of knowledge than general nurses, with greater decision-making skills and experience in areas such as diagnosis and evaluation, planning and implementation, health evaluation and records.\(^{(1)}\)

In this nursing field, nurses become significantly more autonomous in their practice scope and faculty to rely on their own knowledge to make decisions concerning the health of patients. Nursing leaders need to be able to respond to a health environment that is constantly changing, including as regards organizational expectations and local and national policies.

This special edition of Acta allows the dissemination of what Brazilian nurses are producing in this field and, at the same time, reinforces the Nursing Now campaign,\(^{(2)}\) launched by the World Health Organization and the International Council of Nurses to qualify nursing professionals to take over their places in the center of the challenges of the 21st century health system and maximize their contribution to achieving universal health coverage.

In Latin America and the Caribbean, the role of advanced practice nurses is still not well established or recognized, which makes their activity a great challenge in the region,\(^{(3)}\) with regulation needed to ensure legal protection of their practice. However, studies\(^{(4,5)}\) indicate that the use of more strategic leadership and the support of organizations at all levels of management, including nursing organizations and unions; associated with a more realistic education of future advanced practice nurses regarding the challenges to
be faced, through continuous training and guidance, are strategies for the construction of excellence in nursing.

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Competencies for training advanced practice nurses in primary health care

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Keywords
Nursing; Latin America; Caribbean region; Advanced practice nursing; Community health nursing

Descritores
Enfermagem; América Latina; Região do Caribe; Enfermagem de Prática Avançada; Enfermagem de saúde comunitária

Abstract
Objective: To determine a set of core competencies for advanced practice nurses in primary health care in Latin America and the Caribbean.

Methods: This is a descriptive quantitative study, with a qualitative data analysis, conducted in 2017. A total of 830 nurses from Latin America and the Caribbean participated. A questionnaire with seven domains, dimensions and competencies of advanced practice nurses was used for collecting data. Descriptive statistics were used for the data analysis.

Results: Of the 830 nurses that completed the survey, 40.7% held a position in education, 41.4% worked in clinical areas, and 17.3% occupied managerial or ministerial positions. In terms of education level, 45.7% had master’s degrees and 17.3% had doctorates. Of the 64 competencies assessed, 56 were considered core competencies in the training of advanced practice nurses and five as indispensable or not relevant.

Conclusion: The study presented a set of core competencies of advanced practice nurses and contributed to the discussion on core competencies in primary health care. The higher the level of education, the greater the tendency to consider the competencies of ethics and research as relevant, whereas the competency to prescribe drugs was only considered relevant by participants from countries where the role of advanced practice nurses is regulated. The proposed competencies must be framed within a specific context and regulated by the laws of each country.

Resumen
Objetivo: Determinar un conjunto de competencias centrales para formación del enfermero de práctica avanzada en atención básica de salud en América Latina y el Caribe.

Métodos: Estudio cuantitativo-descriptivo, con análisis cualitativo de datos, realizado en 2017. Participaron 830 enfermeras de América Latina y el Caribe. Para la recolección de datos se utilizó un cuestionario con siete dominios, dimensiones y competencias del enfermero de práctica avanzada. Para el análisis de los datos se utilizó estadística descriptiva.

Resultados: De los 830 enfermeros que respondieron a la encuesta, 40.7% ocupaban un cargo en el área de la educación, 41.4% trabajaban en áreas clínicas y 17.3% ocupaban cargos de dirección o ministerial. En cuanto a los niveles educativos, 45.7% tenían maestrías y 17.3% doctores. De las 64 competencias evaluadas, 56 se consideraron como competencias centrales y cinco como no indispensables o no relevantes.

Conclusión: El estudio presenta un conjunto de competencias centrales del enfermero de práctica avanzada y contribuye a la discusión sobre las competencias centrales en su formación en la Asistencia Primaria a la Salud - APS. Cuanto mayor es el nivel de educación, más marcada se hace la tendencia a considerar las competencias de ética e investigación como relevantes, mientras que la competencia para prescribir medicamentos fue considerada relevante exclusivamente para los participantes de países donde está reglamentado el rol de enfermeros de práctica avanzada. Las competencias propuestas deben ser consideradas dentro del contexto específico y regulado por la legislación de cada país.

How to cite:
Introduction

In 2013, the Pan American Health Organization (PAHO/WHO) approved the Resolution CD52. R13 Human resources for health: Increasing access to qualified health workers in primary healthcare-based health systems, which urges countries to strengthen interprofessional health teams and to enhance competencies and the scope of practice of these teams to the maximum. It specifically proposes to “increase the number of seats in training programs in the health professions relevant to primary health care (PHC), including family doctors, advanced practice nurses and non-physician clinicians.”(1)

In its 53rd Board of Directors meeting in 2014, PAHO/WHO approved the strategy for universal access to health and universal health coverage. This strategy recognizes the importance of primary health care and urges countries to increase investments at the primary care level, in order to improve the ability to resolve medical issues, increase access and progressively expand the provision of services, for timely coverage of health needs.(2)

During the 29th Pan American Sanitary Conference in September 2017, the countries approved a human resources strategy which determined that innovative alternatives for facing challenges - such as rotation and switching tasks, advanced practices, creation of new professional profiles, and the use of telehealth - were limited in their development in the region.(3)

Despite profound imbalances and gaps in terms of availability, distribution, composition, competence and productivity of human resources in health, especially at the primary care level, registered nurses can play a key role at this level.(4) Expanding the role of nurses through the incorporation of advanced practice nurses (APN) in PHC could ensure the population’s access to qualified health professionals.

Advanced practice nurses are registered nurses with postgraduate studies. When they are part of interprofessional teams that provide primary care services, they contribute to the management (care) of patients with mildly acute diseases and chronic disorders, in accordance with guidelines in clinical protocols and guides. (5,6)

The scope of practice of APN enables nurses at the PHC level to operate with a degree of autonomy in making decisions, including diagnoses and treating patients’ disorders. The International Council of Nurses defines an APN as “a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is licensed to practice.”(5)

In countries such as the United States and Canada, APN has proven to be cost-effective, in addition to providing safe, quality care.(7,8) This category is recognized and regulated in more than 50 countries. However, in Latin American and some countries in the Caribbean,(9) despite lack of formal training or corresponding regulations, many registered nurses engage in work that transcends their scope of practice, in response to the growing needs of the population they serve.

In this context, PAHO/WHO has carried out several activities to discuss expanding the role of nurses in PHC, such as events, online seminars and different publications.

The objective of this study is to determine a set of core competencies for advanced practice nurses in PHC in Latin America and the Caribbean. It is justified by the lack of consensus in the region regarding the core competencies for training advanced practice nurses.

Methods

This is a descriptive quantitative study, with a qualitative data analysis, which was conducted in 2017. The study population was comprised of nurses, professors, presidents of national associations and nurses working in ministries of health of countries from the region of the Americas. The PAHO/WHO database in Washington D.C. was used for inviting the participants, who received an email which also provided instructions on how to proceed with the survey. They were also asked to invite other professionals with the same profile. The sample was non-probabilistic, with a total of 830 participants.
from 31 countries (Argentina, Bahamas, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, United States, Granada, Guatemala Guyana, Honduras, Cayman Islands, Turks and Caicos Islands, Martinique, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Venezuela, Dominican Republic, Suriname, Trinidad and Tobago and Uruguay). The Chief Nurse Officer and the Permanent Commission of Nursing of the Ministry of Health of Mexico widely disseminated the survey in the country.

The data collection instrument included the PAHO/WHO definition of APN. The participants were then requested to provide sociodemographic information, such as country, position and level of education, as well as an assessment of 64 competencies.

To determine the core competencies that would be assessed, a literature review was conducted with the descriptors and keywords “advanced practice nurse”, “professional competencies” and “community health”. In a meeting, a group of experts from PAHO/WHO identified and analyzed six official documents from associations or governments that stipulated the core APN competencies in their countries or regions.

Based on these documents, a team of experts in advanced practice nursing from PAHO/WHO and nursing professionals from Chile, Mexico, and Spain selected a set of competencies that were initially classified into 15 domains and then reduced to eight. In a third stage, the experts performed another review of each competency and domain, which included linguistic adjustments and the context of APN. This stage reduced the number of competencies to the following seven: (1) Care management: (a) care focus, with three competencies; (b) assessment and diagnosis, with seven competencies, and (c) provision of care, with ten competencies; (2) Ethics, with four competencies; (3) Interprofessional collaboration, with six competencies; (4) Health promotion and prevention, with nine competencies; (5) Evidence-based practice, with six competencies; (6) Research, with five competencies and (7) Leadership, with 14 competencies.

A box was also added for comments and suggestions from the participants. A response was required every survey item, except for the comments box.

The same team validated the content of the final instrument, which native translators translated and back-translated from the original into Spanish, English, and Portuguese.

For its application, the participants were requested to complete the survey based on the following question: “How relevant is this competency to be considered a core APN competency for PHC in Latin American and Caribbean countries? A six-point Likert scale was used: does not apply; not at all relevant; not very relevant; relevant; very relevant; and indispensable.

The survey was available for four weeks on SmartSurvey® in three languages: Portuguese, Spanish and English. Lastly, the electronic link was sent to the participants, requesting them to respond in full to the survey.

The invitation included a paragraph clarifying that completing the survey implied informed consent, and it ensured the anonymity and safekeeping of information related to their identity and institution. This anonymity enabled participants to freely express their opinions. They were also free to withdraw at any time, in which case the survey was not included in the analysis.

Quantitative data analysis included frequency distributions and proportions, expressed in percentages. The differences in proportions among the groups were calculated, with a statistical significance level of p≤0.05 using STATA® and Excel. It was agreed that to qualify as a competency at least 70% (cut-off point) of the responses had to be “indispensable” or “very relevant”. An itemized analysis was performed for the competencies that did not achieve 70%.

With respect to the qualitative analysis, a researcher who did not participate in the quantitative analysis examined the content. He identified the significant units of analysis, analyzed and organized them into codes and categories. The team of researchers met to triangulate and validate the analysis.
Results

Of the 830 (57%) participants, 84.7% (n=703) responded to the survey in Spanish, 9.9% (n=82) in English and 5.4% (n=45) in Portuguese. Table 1 presents the characteristics of the study participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>82(9.9)</td>
</tr>
<tr>
<td>Portuguese</td>
<td>45(5.4)</td>
</tr>
<tr>
<td>Spanish</td>
<td>703(84.7)</td>
</tr>
<tr>
<td>Position</td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>259(31.2)</td>
</tr>
<tr>
<td>Nursing program manager</td>
<td>79(9.5)</td>
</tr>
<tr>
<td>Health institution director/high-ranking manager</td>
<td>100(12)</td>
</tr>
<tr>
<td>Clinical nurse/mid-range manager</td>
<td>244(29.4)</td>
</tr>
<tr>
<td>Ministry of health employee/public policies/cities</td>
<td>75(9)</td>
</tr>
<tr>
<td>Other</td>
<td>73(8.8)</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
</tr>
<tr>
<td>Undergraduate degree</td>
<td>207(24.9)</td>
</tr>
<tr>
<td>Specialization</td>
<td>100(12)</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>379(45.7)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>144(17.3)</td>
</tr>
</tbody>
</table>

Responses were obtained from most of the countries in the region; a majority of the Mexican nurses participated, 51.6% (n=428), followed by the Colombians (9.5%) and Brazilians (8.7%). The responses from Brazil (8.7%), Canada (4.7%), Colombia (9.5%), Chile (5.7%) and Mexico (51.6%) were examined separately due to the number of participants. The responses from the rest of the countries were grouped into a single category. Another analysis grouped the responses by countries that had APN (Canada, United States and countries from the Caribbean and Latin America: Bahamas, Belize, Guyana, Cayman Islands, Turks and Caicos Islands, Martinique, Suriname and Trinidad and Tobago) and those that did not (Argentina, Bolivia, Brazil, Colombia, Cuba, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela).

In the overall analysis, if the sum of “indispensable” and “very relevant” constituted 70% of the responses, this was considered to indicate a high degree of consensus in relation to relevance. Above the cutoff point, the competency was considered to be a core competency. The analysis showed that there was a high degree of consensus regarding the relevance of 59 competencies.

Of the 64 competencies, the following five did not achieve this cutoff point: Use technological systems for capturing data from variables for assessing patients (No. 5); Prescribe drugs within one’s scope of practice (No. 17); Design research projects that meet the criteria established by financing agencies (No. 48); Conduct research individually or with others (No. 49); and Disseminate research findings among various audiences using appropriate formats (No. 50). Consequently, it was decided to carry out a more detailed analysis.

In the analysis of the seven domains into which the competencies were grouped, all of them, with the exception of research (65.4%), were considered indispensable or very relevant, with proportions exceeding 80% (Table 2).

In the ethics domain, between 82% and 93.3% considered them indispensable or very relevant. However, participants with a higher level of education considered ethical aspects to be more relevant.

In the domain of interprofessional collaboration, the six competencies ranged in score from 76% to 91%, and they were considered indispensable or very relevant. The competency “Collaborate
### Table 2. Percentage breakdown of domains and competencies

<table>
<thead>
<tr>
<th>Domain / Competency</th>
<th>Indispensable or very relevant (%)</th>
<th>Relevant (%)</th>
<th>Slightly or not at all relevant, or does not apply (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domain - Care management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Care management: care focus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Incorporate knowledge about cultural diversity and health determinants in the assessment, diagnosis and therapeutic treatment of patients and in evaluating the outcome.</td>
<td>85.7</td>
<td>11.2</td>
<td>3.1</td>
</tr>
<tr>
<td>2. Incorporate knowledge about development and stages of life, physiopathology, psychopathology, epidemiology, environmental exposure, infectious diseases, behavioral sciences, demography and family processes, when performing assessments, making diagnoses and providing therapeutic management.</td>
<td>87.1</td>
<td>11.1</td>
<td>1.8</td>
</tr>
<tr>
<td>3. Incorporate knowledge about clinical manifestations of normal health events, diseases/serious injuries, chronic diseases, comorbidities and health emergencies, including the effects of multiple etiologies in the assessment, diagnosis and therapeutic management of patients and in evaluating the outcome.</td>
<td>85.8</td>
<td>12.3</td>
<td>1.9</td>
</tr>
<tr>
<td>b. Care management: assessment and diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Use advanced assessment skills to distinguish between normal, variations of normal and abnormal findings.</td>
<td>84.2</td>
<td>13.6</td>
<td>2.2</td>
</tr>
<tr>
<td>5. Use technological systems for capturing data from variables for assessing patients.</td>
<td>62.2</td>
<td>25.5</td>
<td>12.3</td>
</tr>
<tr>
<td>6. Obtain and accurately document the relevant history of patients in each stage of life and family life cycle, using collateral information, if necessary.</td>
<td>80.1</td>
<td>15.7</td>
<td>4.2</td>
</tr>
<tr>
<td>7. Accurately carry out and document appropriate physical tests or those focused on the symptoms of patients of all ages (including developmental and behavioral screening, physical tests and mental health assessments).</td>
<td>81.3</td>
<td>14.9</td>
<td>3.7</td>
</tr>
<tr>
<td>8. Identify health and psychosocial risk factors for patients of all ages and families in all stages of the family life cycle.</td>
<td>83.7</td>
<td>14.2</td>
<td>2.0</td>
</tr>
<tr>
<td>9. Perform different diagnoses for acute, chronic and vital risk conditions.</td>
<td>79.3</td>
<td>14.9</td>
<td>5.4</td>
</tr>
<tr>
<td>10. Plan screening and diagnostic strategies using appropriate technologies as a tool, taking into consideration costs, risks and benefits for patients.</td>
<td>72.0</td>
<td>19.8</td>
<td>8.2</td>
</tr>
<tr>
<td>c. Care management: provision of care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Provide consistent care as set forth in clinical guides and protocols.</td>
<td>87.3</td>
<td>10.7</td>
<td>1.9</td>
</tr>
<tr>
<td>12. Provide care that respects and promotes cultural diversity.</td>
<td>88.8</td>
<td>9.6</td>
<td>1.6</td>
</tr>
<tr>
<td>13. Effectively communicate clinical findings, diagnoses and therapeutic interventions.</td>
<td>89.5</td>
<td>8.6</td>
<td>1.9</td>
</tr>
<tr>
<td>14. Determine care options and formulate a therapeutic plan in collaboration with patients, taking into account their expectations and beliefs, available evidence and the cost-effectiveness of the interventions.</td>
<td>85.2</td>
<td>11.8</td>
<td>3.0</td>
</tr>
<tr>
<td>15. Integrate quality and patient safety principles in clinical practices.</td>
<td>91.7</td>
<td>6.5</td>
<td>1.8</td>
</tr>
<tr>
<td>16. Initiate a therapeutic plan with pharmaceutical and non-pharmaceutical interventions, treatments and therapies.</td>
<td>76.9</td>
<td>14.2</td>
<td>8.9</td>
</tr>
<tr>
<td>17. Prescribe drugs within one’s scope of practice (regulations and protocols/national programs).</td>
<td>52.8</td>
<td>16.0</td>
<td>31.2</td>
</tr>
<tr>
<td>18. Monitor the patient’s progress, assessing and adjusting the therapeutic plan according to the patient’s responses.</td>
<td>81.7</td>
<td>10.8</td>
<td>7.5</td>
</tr>
<tr>
<td>19. Adapt interventions in order to meet the needs of people and families, in relation to aging, life transitions, comorbidity and psychosocial and financial situations.</td>
<td>83.0</td>
<td>11.9</td>
<td>5.1</td>
</tr>
<tr>
<td>20. Formulate an appropriate palliative or end-of-life plan.</td>
<td>75.8</td>
<td>13.1</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Domain - Ethics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Create a therapeutic environment that allows patients to freely discuss health issues.</td>
<td>82.4</td>
<td>13.5</td>
<td>4.1</td>
</tr>
<tr>
<td>22. Facilitate to enable families to make their health decisions.</td>
<td>83.4</td>
<td>13.0</td>
<td>3.6</td>
</tr>
<tr>
<td>23. Integrate ethical principles into decision making.</td>
<td>90.3</td>
<td>5.9</td>
<td>0.8</td>
</tr>
<tr>
<td>24. Recognize moral and ethical dilemmas and acts appropriately, if necessary.</td>
<td>87.8</td>
<td>9.6</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Domain - Interprofessional collaboration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Collaborate with the rest of the health team in promoting patient-focused, interprofessional care.</td>
<td>91.9</td>
<td>18.6</td>
<td>5.4</td>
</tr>
<tr>
<td>26. Act as a consult, accepting referrals from health team professionals, community agencies and other professionals outside the health system.</td>
<td>76.0</td>
<td>15.8</td>
<td>2.3</td>
</tr>
<tr>
<td>27. Coordinate interprofessional teams for providing patient care.</td>
<td>79.3</td>
<td>13.5</td>
<td>2.7</td>
</tr>
<tr>
<td>28. Promote learning opportunities among health team members to optimize patient care.</td>
<td>83.9</td>
<td>16.1</td>
<td>2.5</td>
</tr>
<tr>
<td>29. Establish a collaborative relationship with health service providers and community services.</td>
<td>81.3</td>
<td>11.8</td>
<td>3.1</td>
</tr>
<tr>
<td>30. Consult and/or refer patients to other health service providers at any time during the care process, when the patient’s condition is not within the nurse’s scope of practice.</td>
<td>85.1</td>
<td>13.4</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Domain - Promotion and prevention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Participate in the development and implementation of local health promotion programs.</td>
<td>81.2</td>
<td>11.0</td>
<td>3.0</td>
</tr>
<tr>
<td>32. Select, implement and assess evidence-based strategies for primary, secondary and tertiary health promotion and prevention.</td>
<td>85.2</td>
<td>9.3</td>
<td>2.9</td>
</tr>
<tr>
<td>33. Seek to empower individuals, groups, and communities to adopt healthy lifestyles and self-care.</td>
<td>87.8</td>
<td>10.7</td>
<td>2.3</td>
</tr>
<tr>
<td>34. Appropriately interpret technical and scientific information for the different needs of patients.</td>
<td>87.0</td>
<td>8.9</td>
<td>1.9</td>
</tr>
<tr>
<td>35. Assess the educational needs of patients and caregivers for providing personalized and effective health care.</td>
<td>89.2</td>
<td>11.9</td>
<td>2.3</td>
</tr>
<tr>
<td>36. Provide training for patients and/or caregivers to bring about positive changes of behavior.</td>
<td>85.8</td>
<td>9.5</td>
<td>2.5</td>
</tr>
<tr>
<td>37. Provide training and personalized educational interventions on benefits, interactions and the importance of treatment adherence, as well as recommendations for follow-up and self-management.</td>
<td>88.0</td>
<td>10.5</td>
<td>2.8</td>
</tr>
<tr>
<td>38. Provide training and personalized educational interventions on personal responses to nurses, disorders, health conditions, injuries and risk factors, including lifestyle changes and therapeutic interventions.</td>
<td>86.7</td>
<td>15.3</td>
<td>6.5</td>
</tr>
</tbody>
</table>
with the rest of the health team in promoting patient-focused, interprofessional care” obtained the highest percentage (91.9%).

In the domains of promotion and prevention and evidence-based nursing, 70% ranked the competencies as indispensable or very relevant.

With respect to the research domain, 70% considered that three of its five competencies were indispensable or very relevant.

The analysis of the 14 competencies comprising the leadership domain indicated a consensus of the participants in terms of their relevance, and considered them to be core APN competencies.

The five competencies that did not achieve the cutoff point were examined separately. The participants’ responses were considered from the perspective of level of education and position, from those countries with and without APN (Table 3).

Table 4 shows the percentage of “indispensable” or “very relevant” responses, according to the characteristics of the five competencies examined.

The competency “Use technological systems for capturing data” did not quite qualify as a core APN competency (62.2%). In the itemized analysis in countries with and without ANP, it was also not considered a very relevant competency and no significant differences were found (p=0.35) among the responses of participants with (62.5%) and without APN (62.1%).

When examining this competency according to the educational level of the participants, it was noted that those with master’s degrees or doctorates considered it more relevant than the others did.
Competencies for training advanced practice nurses in primary health care

Table 3. Percentage of “indispensable” or “very relevant” responses for the competencies that did not achieve the cutoff point. Participants from countries with or without APN (p=0.35)

<table>
<thead>
<tr>
<th>Competencies</th>
<th>With APN in their countries (n= 80) %</th>
<th>Without APN in their countries (n= 750) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use technological systems for capturing data from variables for assessing patients.</td>
<td>62.5</td>
<td>62.1</td>
</tr>
<tr>
<td>Prescribe drugs within one’s scope of practice (regulations and protocols/national programs)</td>
<td>78.8</td>
<td>50.0</td>
</tr>
<tr>
<td>Design research projects that meet the criteria established by financing agencies.</td>
<td>32.5</td>
<td>55.3</td>
</tr>
<tr>
<td>Conduct research individually or with others.</td>
<td>37.5</td>
<td>66.9</td>
</tr>
<tr>
<td>Disseminate research findings among various audiences using appropriate formats.</td>
<td>41.3</td>
<td>67.2</td>
</tr>
</tbody>
</table>

With respect to country, participants from Canada and Brazil considered it indispensable (89.7%) and very relevant (79.2%). Participants from Mexico (47.2%), Colombia (46.8%), Chile (48.9%) and other countries (50.9%) did not consider it relevant.

The participants considered that the use of technological systems to capture data is important for ANP because it facilitates the nursing care process and streamlines health services in relation to patient assessments. They also reported that it is essential for fields of research. Following are some examples of the expressed opinions.

“Health institutions and even primary care centers in suburban areas and some rural areas increasingly have computer teams which [enables] creating databases by families and [generating] electronic files for families for capturing data, following up on individuals in the files and [avoiding] the use of paper, in addition to facilitating file management, [making] information more accessible and pertinent. Through using information from databases, nurses can generate epidemiological studies, case-control, unique cases, finding families located in areas that could be endemic, or for mass vaccination campaigns. Information is a source for generating research.” (Participant 70)

“The use of technological systems is relevant, because they are tools that facilitate information analysis processes that result in patient care. However, their importance depends on whether those using them really know how to manage the information. If a nursing professional does not know how to report

Table 4. Proportion of “indispensable” or “very relevant” responses that did not achieve the cutoff points, by characteristics of the country, according to the participants’ level of education and position

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Use technological systems for capturing data from variables for assessing patients.</th>
<th>Prescribe drugs within one’s scope of practice (regulations and protocols/national programs)</th>
<th>Design research projects that meet the criteria established by financing agencies.</th>
<th>Conduct research individually or with others.</th>
<th>Disseminate research findings among various audiences using appropriate formats.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctorate (n=144)</td>
<td>60.4</td>
<td>67.4</td>
<td>58.3</td>
<td>67.4</td>
<td>68.1</td>
</tr>
<tr>
<td>Master’s degree (n=379)</td>
<td>68.1</td>
<td>55.7</td>
<td>58.6</td>
<td>71.5</td>
<td>72.8</td>
</tr>
<tr>
<td>Specialization (n=100)</td>
<td>54.1</td>
<td>41.5</td>
<td>40.6</td>
<td>50.7</td>
<td>50.2</td>
</tr>
<tr>
<td>Undergraduate (n=207)</td>
<td>59.0</td>
<td>44.0</td>
<td>51.0</td>
<td>59.0</td>
<td>59.0</td>
</tr>
<tr>
<td>Position</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic (n=259)</td>
<td>61.4</td>
<td>54.1</td>
<td>58.3</td>
<td>75.7</td>
<td>73.7</td>
</tr>
<tr>
<td>Nursing program director (n=79)</td>
<td>75.9</td>
<td>59.5</td>
<td>65.8</td>
<td>81.0</td>
<td>78.5</td>
</tr>
<tr>
<td>Health institution director/high-ranking manager (n=100)</td>
<td>62.0</td>
<td>52.0</td>
<td>55.0</td>
<td>66.0</td>
<td>66.0</td>
</tr>
<tr>
<td>Clinical nurse/mid-range manager (n=244)</td>
<td>55.7</td>
<td>49.2</td>
<td>41.4</td>
<td>45.9</td>
<td>49.2</td>
</tr>
<tr>
<td>Ministry of health employee/public policies/ cities (n=75)</td>
<td>66.7</td>
<td>50.7</td>
<td>54.7</td>
<td>58.7</td>
<td>65.3</td>
</tr>
<tr>
<td>Other (n=73)</td>
<td>67.1</td>
<td>56.2</td>
<td>56.2</td>
<td>68.5</td>
<td>67.1</td>
</tr>
<tr>
<td>Total</td>
<td>62.2</td>
<td>52.8</td>
<td>53.1</td>
<td>64.1</td>
<td>64.7</td>
</tr>
</tbody>
</table>
on paper or determine which information about the patient is truly important, it won’t make any difference to have advanced technological resources for assessing patients.” (Participant 83)

Another aspect mentioned was the difficulty or lack of technological resources. Many participants stated that data was recorded manually due to lack of more appropriate tools.

“Data is captured through physical sources, such as clinical histories, which are recorded manually, due to difficulties accessing technologies in dispersed rural areas.” (Participant 38)

“Until now, everything has been done manually and even assessment records are only on paper.” (Participant 39)

The competency related to prescribing drugs within the scope of practice of APN did not achieve a consensus, since only half of the participants considered it to be indispensable or very relevant. However, in the itemized analysis among participants from countries with and without ANP it was found that, in the former, the participants felt it is an indispensable or very relevant core competency (78.8%), whereas those from countries without APN did not (50%).

The higher the participant’s level of education, the greater the relevancy of the competency: doctorate (67.4%), master’s degree (55.7%), specialization (44%) and undergraduate degree (55.7%), and these differences were significant (p<0.05). It should also be noted that, in the case of undergraduate and specialization levels, the category for “does not apply” was 17%. However, in the breakdown of opinions according to the participants’ position, there were no statistically significant differences (p=0.6).

It is also necessary to point out that, in most of the countries, nurses do not have the authority to prescribe drugs due to lack of regulations for this activity, which may have influenced the answers.

This competency was considered relevant by some professionals because it could serve as a strategy to improve clinical processes in the continuity of treatments, in addition to contributing to universal access to health care. However, the participants were subject to limitations in this practice and, thus, there is a need to establish national programs and regulations. On the other hand, university nursing courses must be adapted in order to train these professionals:

“It would be very relevant if laws could be changed to allow advanced practice nurses to prescribe drugs in Latin American countries.” (Participant 4)

“The scope of practice is relative. However, it is essential to abide by the laws of the states and provinces which regulate nursing practices in a specific jurisdiction and/or geographical area.” (Participant 129)

“In Chile, they cannot prescribe drugs. However, if the laws could be changed, the competency would be indispensable. It doesn’t make much sense since, besides physicians, midwives in Chile can prescribe drugs (the entire ranges of injectable and oral contraceptives).” (Participant 30)

“Prescribing drugs is essential for advanced practice nurses and could contribute to universal access to health care and enable them to work autonomously. Many countries have advanced practice nurses that safely prescribe drugs. They have been taught how to do it.” (Participant 113)

“We need to adjust our undergraduate and graduate studies curricula. Nursing programs in Brazil do not allow this practice.” (Participant 39)

It was observed that in countries with regulations and laws for nurses to prescribe drugs, barriers persisted, such as lack of knowledge on the part of these professionals and the reality of the health services that hindered such practices.

Some participants felt that prescribing drugs is not a nursing competency. It is possible they did not view prescribing drugs as a relevant ANP competency due to the type of knowledge they possessed and
because of limitations imposed by national laws on nursing practices and the reality of the health services.

“Drugs are not prescribed, but nurses are supposed to inform, explain and check whether users understood all aspects related to administration, precautions and warning signs, as well as answer any questions.” (Participant 79)

“It’s supposedly regulated, but [within] the reality of the services drugs are not prescribed, which limits expanding the role of nurses.” (Participant 31)

In the analysis of the competencies that did not achieve a 70% consensus, “Design research projects that meet the criteria established by financing agencies” was considered relevant by 32.5% of the participants from countries with APN and by 55.3% of those without. In this case, it was also observed that the higher the participants’ level of education, the greater the relevance attributed to the competencies of this study.

In the breakdown down by position, it was found that program directors and faculties tended to consider these competencies to be relevant, even though they failed to achieve the cutoff point. It was also observed that the higher the level of education of the participants, the greater the relevance assigned to these competencies: 58.3% at the master’s degree level, 40.6% in the case of specializations and 51% among those with undergraduate degrees.

The competency “Conduct research individually or with others” also failed to achieve a consensus as indispensable or very relevant (64.1%), but there were significant differences according to position: for faculties (75.5%) and program directors (81%), it was more relevant (p=0.000). In the analysis based on the participants’ level of education, it was found that the higher the level, the greater the relevance attributed.

The competency “Disseminate research findings among various audiences using appropriate formats,” also failed to obtain a consensus of 70%. There were some differences between the groups: 41.3% of the participants from countries with APN and 67.2% of those without APN, considered it to be indispensable or very relevant. In regard to level of education, most of the participants gave it more relevance. In the case of faculties and nursing program directors, there was a consensus to include it: 73.7% and 78.5%, respectively.

In the research domain, it was found that the competency “Design research projects that meet the criteria established by financing agencies” was difficult for participants to interpret, due to the fact that they considered it as relevant or less relevant according to their own experiences, and not necessarily as a core APN competency.

Some participants expressed that designing research projects was indispensable in the scope of practice, but there were opinions in the sense of professionals using research but not necessarily producing it.

“If the academic degree for APN is [a] specialization, the answer would be relevant; if it’s [a] master’s degree, it would be very relevant, and if it is a doctorate, it would be indispensable.” (Participant 21)

“Not all projects are eligible for financing, but they are very relevant for professional practice.” (Participant 8)

“I think they are important. But clinicians can use research instead of producing it.” (Participant 10)

However, they mentioned difficulties in training professionals, inadequate working hours and limited resources for developing projects, especially in the case of funding agencies. Others noted that carrying out research could distract nurses from their professional practice.

“There is a lack of preparation in research, as well as preparation and practice to apply funds, and practice in developing quality research.” (Participant 17)

“... but I think it would distract her from her main objective.” (Participant 4)
“It’s not feasible; the logistics pass through too many bureaucratic and political filters, in addition to the work overload, and this hinders it from carried out.” (Participant 37)

The competency “Conduct research individually or with others” showed that teamwork facilitates the practice in PHC.

The participants who considered conducting research a core competency stressed the importance of teamwork for strengthening professional practice.

“Group research is more effective because a problem is analyzed from various perspectives; it is undeniable that research is essential.” (Participant 14)

“It is important to carry out interdisciplinary and inter-institutional research.” (Participant 17)

As for the qualitative data of the competency “Disseminate research findings among various audiences using appropriate formats,” the participants considered it to be important, although it is still in development.

“To fulfill its purpose, research must be disseminated, published and presented at scientific events. In relation [to] advanced practice, it is still in the beginning stages.” (Participant 8)

**Discussion**

This study presents a framework of core APN competencies, based on a consensus by participants from 31 countries from the Americas. The level of education of the participants was similar to the study by Sastre-Fullana, where 45 experts with master’s degrees (41%) and doctorates (20%) were consulted. The lack of an international consensus for a precise definition of the competencies associated with the roles of advanced practice nurses has prompted further studies to define them.

The literature has identified that the following domains are core APN competencies: evidence-based practice; research; clinical judgment; autonomy of practice; consultancy; clinical and professional leadership; education and teaching; collaboration and interprofessional relations; ethical and legal practices; quality and safety management; care management; health promotion; communication; cultural competence; advocacy and change management. These domains are similar to those established in the analysis presented here.

On the other hand, the study by Sastre-Fullana established a set of APN competencies through a consensus among experts, and it showed that evidence-based practice and clinical and professional leadership are crucial elements for nursing practice. It also considered research domain to be essential for APN, with respect to other nursing levels.

In this study, ethical domain, followed by promotion, prevention and evidence-based nursing obtained the highest results in terms of relevance. Evidence-based practice, interprofessional practice and care management were also considered fundamental in other studies, with findings similar to those of the present study.

As for the care management domain, prescribing drugs was not considered indispensable or very relevant by most of the participants, contrary to the results presented in a report which indicated the growing role of APN in the prescription of drugs. In countries such as Australia, United States, Ireland and the United Kingdom, nurses are authorized to prescribe drugs, and in others, such as Finland, this practice is being implemented.

The United States was the first country to include prescribing drugs as a nursing competency and, afterwards, Australia, Canada and England followed suit. This practice requires changes to laws in countries, which may create a difficulty for advanced nursing roles.

Results related to not considering prescription of drugs as indispensable or very relevant may suggest that the understanding of this competency by the participants is linked to the current situation in certain countries that only permits this practice by physicians. It may also be related to lack of clarity regarding the role of APN.

Therefore, to be able to prescribe drugs, it is necessary that countries and regulatory agencies establish programs and specific regulations.
Another finding of this study involves the autonomy of APN; only four participants said they did not agree with this competency. The study by Sastre-Fullana (16) also addresses the importance of competencies that stress professional autonomy, ability to influence and guide other professionals, consulting when necessary, transitional care, advocacy and guidance for users in their care process and, particularly, that autonomy must be regulated and framed in ANP.

The leadership domain received a degree of relevance as an indispensable or very relevant competency exceeding 80%, which coincides with other studies (16, 17) that emphasize autonomy, leadership in the work team, coordination and referral of patients within health services and the role played by interprofessional teams.

A study by Nieminen et al. (19) on clinical nursing specialists defined the core competencies as: direct care, consulting, leadership, collaboration, coaching, ethics, decision making and research. The ethical domain achieved a high score as indispensable or very relevant, similar to the findings of other studies. (15)

In the case of the present study, the participants did not consider the use of technological systems for capturing data and assessments to be a relevant APN competency, unlike other studies that showed the importance and relevance of this aspect among the core competencies. (20, 21)

Informatics and knowledge of technological systems should be core competencies in professional nursing practices, since the development of these competencies promotes, improves and facilitates collaboration and integration with other professions, besides other benefits. (20, 21)

Finally, the implementation of APN requires a definition of the core competencies for the training of these nurses, in addition to knowledge on the experiences of other countries. Considering that most of the competencies examined in this study were considered relevant by the participants, it is possible to use them once a consensus has been reached and they are contextualized in each country.

The scientific literature illustrates the benefits of implementing APN. However, there are barriers to expanding the roles of nurses, such as lack of protection for the academic degrees of advanced practice nurses, lack of clarity of the role, financial barriers to payment and reimbursement, variations in training, unnecessarily restrictive regulations and resistance by stakeholders. All of these barriers represent substantial impediments to the implementation of new functions in clinical environments. (22)

Despite this situation, the training of nurses in order to expand their role in APN is a crucial aspect which should be given the same priority as regulatory components and policies.

Most of the participants expressed their opinions regarding the relevance of the competencies to be considered core competencies in advanced practice nursing in PHC, taking into account the current reality of the role of nurses, which may have had an impact on the results.

It is possible that lack of knowledge about the profession and lack of clarity regarding the role influenced the answers and that the definition presented in the instrument was not sufficiently clear for many participants.

Another limitation is the heterogeneity of the sample of participants in terms of size and distribution by country, since the participation was very uneven. However, this study did present important comments and opinions for training advanced practice nurses in the region.

This pioneer study on the topic contributes to the recent discussion on training and the core competencies for primary health care nurses in Latin America. However, these competencies must be framed within a specific context and regulated by laws in each country where the expanded role of nurses in primary health care will be implemented.

**Conclusion**

This study presented a set of core competencies for advanced practice nurses and contributes to the discussion on their training within the context of PHC. A representative group of nurses from 31 countries from the Americas, holding various po-
sitions, examined the competencies presented and considered 50 of them to be core competencies. It is possible that lack of clarity regarding the role of APN contributed to an analysis based on current scope of work and regulations, and not on a vision to expand the role. An analysis of these competencies according to the specificities of each country, could yield other findings.

Acknowledgments

The authors would like to thank Elena Gonzalo Jiménez for her contribution.

Collaborations

Cassiani SHB, Aguirre-Boza F, Hoyos MC, Barreto MFC, Morán L, Cerón MC and Silva FA contributed to the design, writing of the first draft, interpretation and writing of the subsequent draft, data analysis and approval of the final version.

References


Protocol for pelvic organ prolapse treatment with vaginal pessaries
Protocolo para tratamento de prolapso de órgãos pélvicos com pessário vaginal
Protocolo de tratamiento del prolapso de órganos pélvicos con pesario vaginal

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Resumo
Objetivo: Desenvolver um protocolo clínico para o tratamento conservador do prolapso de órgãos pélvicos com pessário vaginal.

Métodos: Pesquisa de desenvolvimento realizada entre julho de 2015 a janeiro de 2016 e realizada em etapas: redefinição de tópicos/questões do protocolo; estabelecimento de recomendações para pesquisa e atualização; revisão por pares. A análise se deu por programa estatístico e pelo Índice de Validade de Conteúdo.

Resultados: O protocolo foi desenvolvido e avaliado por meio da técnica Delphi quanto aos critérios objetivos, conteúdo e apresentação e relevância por profissionais da área, sendo calculado o Índice de Validade de Conteúdo total de cada domínio e o global. O Índice de Validade de Conteúdo total de domínio objetivos foi 1,00, do critério conteúdo e apresentação foi 0,98 e do domínio relevância, 0,96. Obtive-se o Índice de Validade de Conteúdo global de 0,98. Dessa forma, verificou-se concordância entre os participantes da técnica Delphi, com valor acima de 0,85, considerando o protocolo clínico válido.

Conclusão: Acredita-se que os profissionais de saúde, ao utilizar o protocolo clínico, terão maior embasamento na prática, oferecendo um cuidado de maior qualidade, pois é uma ferramenta válida e pautada cientificamente.

Keywords
Pelvic floor disorders; Pelvic organ prolapse/therapy Pessaries; Protocols; Validation studies

Descritos
Disturbios del suelo pélvico; Prolapso de órgano pélvico/terapia; Pessarios; Protocolos; Estudios de validación;

Descrição
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Descritos
Disturbios del suelo pélvico; Prolapso de órgano pélvico/terapia; Pessarios; Protocolos; Estudios de validación;

Abstract
Objective: To develop a clinical protocol for the conservative treatment of pelvic organ prolapse with vaginal pessaries.

Methods: Developmental research conducted in the period from July 2015 to January 2016 and performed in the following steps: refinement of topics/protocol issues; establishing recommendations for research and updates; peer review. The analysis was by statistical program and the Content Validity Index (CVI).

Results: The protocol was developed and evaluated by professionals of the area through the Delphi technique regarding criteria of objectives, content and presentation, and relevance. The total CVI of each domain and the overall CVI were calculated. The total Content Validity Index for the objectives domain was 1.00, for content and presentation criterion was 0.98, and for the relevance domain was 0.96. The overall Content Validity Index obtained was 0.98. Thus, there was agreement among participants of the Delphi technique with value above 0.85, and the clinical protocol was considered valid.

Conclusion: When health professionals use the clinical protocol, they will have a better foundation in practice and offer a higher quality care, since this is a valid and scientifically based tool.

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Conflicts of interest: nothing to declare.

Introduction

The prevalence of pelvic organ prolapse (POP) varies widely worldwide, as it depends on the female population studied and the criteria for entry, and is estimated at 30% to 50% of multiparous women over 50 years of age. (1)

Data from a specialized outpatient clinic in Fortaleza, Ceará, revealed that out of 85 patients with pelvic floor dysfunction (PFD), 58.8% had stage II prolapse, 14.1% stage III and 2.4% stage IV, and more than half of patients presented anterior or wall vaginal defects (55.3%). (2)

The surgical approach is the most frequent type of treatment, but conservative treatments, such as the use of vaginal pessaries have been gaining prominence. (3,4)

Pessaries are recommended as a first-line, low-cost and low-risk treatment option, and indicated for a variety of signs and symptoms related to prolapse. Its use is a viable and effective option, since long-term users (over 12 months) have reported high levels of satisfaction and control of the condition with the device. (5)

Professionals assisting women who use pessaries should be attentive to some care practices in order to avoid possible complications. Although in national studies there are no publications on nurses’ role in the conservative treatment of POP, internationally, this has been reported for some time. (6-9) The importance of these professionals’ assistance has also been mentioned for the success in the use of pessaries. (6)

The existence of a clinical protocol can contribute to the guidance and standardization of insertion and follow-up visits, promotion of specific care, early detection of alterations, minimization of complications, improvement of quality of life and enable the targeting and standardization of actions. (10)

Protocols are guidelines for practice, and their adoption is supported by the Ministry of Health, which provides for a greater appropriation of the health problem to which it reports by allowing that professionals’ actions have technical and scientific support and they feel more self-confident in their practices. (11)

Since there are no clear guidelines for pessary management so far, (12) was developed a clinical protocol for the conservative treatment of pelvic organ prolapse with vaginal pessaries. The existence of a valid and reliable technology such as the clinical protocol is relevant and will be beneficial so that professionals working in the area can improve care for women with POP through the organization of service and assistance.

Methods

In order to conduct research for the development of potentially applicable and useful technologies in the existing teaching-learning methods, developmental research was chosen for the present study. (13)

The development of the protocol occurred from July 2015 to January 2016, and was based on the steps of Ribeiro (2010), (14) who sought to reach consensus for the protocol development process in order to guarantee its quality. However, the ideas of Werneck, Faria and Campos (2009) (15) for developing clinical protocols were also used.

The steps were divided into: 1) refining topics/issues; 2) conducting review of the scientific literature; 3) establishing recommendations for research and updating of the guideline/protocol; 4) ensuring peer review.

In the first step, were defined the objective, justification and topics contained in the protocol. In the period between July and October 2015, the Electronic Brainstorming technique was used for defining these topics with five invited health professionals, who research and/or act on the guidance of the use of vaginal pessaries through an online platform. The Urogynecology outpatient clinic of a tertiary hospital in Fortaleza-CE, a reference in the care of women with PFD, was also visited in July 2015. An interview was conducted with some vaginal pessary users in order to find the main doubts about the use of the device, and the needs to be satisfied in the consultation. The researcher’s experience on the subject was also taken into consideration through insertion in the service.

The second step involved following procedures in order to perform an integrative review (16) in the month of November, 2015 through journals in-
dexed in the following computerized databases: US National Library of Medicine (PUBMED)/Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Literature in Health Sciences (LILACS), SCOPUS, COCHRANE, Center for Reviews and Dissemination (CRD), WEB OF SCIENCE, Brazilian Network of Health Technology Assessment (REBRATS) and published books. From the reading of these materials, were selected contents that served as support for the protocol development.

Note that during the protocol development, preference was given to the use of studies with higher levels of evidence (LE) and grade of recommendations (GR), according to the Oxford Centre for Evidence-Based Medicine classification.\(^{(17)}\)

After the integrative review guided by group suggestions that arose in the Brainstorming session, in December 2015, the protocol was developed in text and represented in graphical form as flowcharts with algorithms when necessary, which comprised the third step of the process. For the selection of illustrations and layout, NBR 14.724 and 6.029 norms were followed. In the protocol content, the references used for its development, the databases investigated, and the classification of LE and GR adopted were made available in order to facilitate its future update.

The last step was obtaining feedback on the proposed protocol by ensuring an opportunity to review the document and identify potential difficulties for its implementation. In January 2016, the Delphi technique was used to this end with collaboration of seven health professionals who research and/or act in the Urogynecology area and/or in the orientation of the use of vaginal pessaries. The protocol was evaluated according to criteria of objectives, content and presentation, and relevance. Values from 1 to 4 were assigned, in which 1 is inappropriate; 2 is partially appropriate; 3 is appropriate; 4 is totally appropriate, and suggestions were made when deemed necessary.

The analysis of agreement among participants of the Delphi technique was through the Content Validity Index (CVI). As the number of professionals in this technique was greater than six and the protocol is new, the minimum value assigned to agreement was 0.85.\(^{(18)}\)

The study was submitted in accordance with Resolution number 466/12 of the National Health Council to the Research Ethics Committee (COMEPE) through the Brazil Platform for due consideration, and was approved under opinion number 1.116.853.\(^{(19)}\)

**Results**

At the step of refining topics/issues of the clinical protocol, were developed the objective of the clinical protocol, the justification for the development of the protocol and the topics of mandatory contents. These topics and subtopics were built through electronic brainstorming.

As for the profile of health professionals who participated in the electronic brainstorming, four are female and one is male. Three are nurses, one is a physiotherapist and the other is a doctor. One has a PhD degree, two have masters’ degree and two are specialists. All have knowledge/experience in the ‘vaginal pessary’ subject, present published works and participate in research groups in the area of Urogynecology.

In this same step, at another moment, were interviewed four vaginal pessary users aged between 57 and 74 years, prolapse stage ranging from III to IV, and who have been using the device for at least three years. The ideas and opinions of these women helped in the extraction of topics for the protocol development.

In the integrative review step, the delimitation of the guiding topics of the review was achieved through the electronic brainstorming, interview with pessary users and the researcher’s experience, as explained in the previous step.

Inclusion criteria for selection of articles were the following: to cover the guiding topics of the protocol theme, available electronically and published in English, Portuguese and Spanish. Repeated and unavailable articles were excluded. There was no restriction of publication year.
In the LILACS, CRD and REBRATS databases, was used the descriptor “pelvic organ prolapse” alone and the association of “pessaries” and “pessary” with the Boolean operator OR. In the PUBMED/MEDLINE, SCOPUS, COCHRANE and WEB OF SCIENCE databases, was used a unique combination of “pelvic organ prolapse” with the Boolean operator AND added to “pessaries” and “pessary” with the Boolean operator OR.

As a result, 3,630 articles were retrieved. After selection of articles based on inclusion and exclusion criteria, the search was completed with 44 articles for analysis, synthesis and inclusion in the protocol. Publications were dated between years 2002 to 2015, 39 were from international journals in English, and the LE ranged from 1A to 5 and the GR from A to D.

In the third step, was developed the clinical protocol itself. The text development process was judicious with the aim to facilitate the reading and management of the protocol during its use, and happened in a logical sequence. Throughout the protocol, LEs and GRs were made available so that readers were aware of the type of information selected in integrative review studies.

The final version of the protocol had 71 pages. The content was divided into 13 sessions with their sub-sessions related to the construction process, general considerations on the subject and the complete assistance for treatment with vaginal pessaries. Eleven tables were inserted; two indicating the LE and GR of the protocol, seven identifying each type of pessary with indications, advantages and disadvantages, one about the self-care options for women using the device, and one with possible complications in the use and management of the device. Fourteen figures were included too, of which three are flowcharts. Figure 1 shows some pages of the protocol.

In the last step, the Delphi technique was used for the clinical protocol review. Regarding the characteristics of health professionals who participated in the Delphi technique, five are female and two are male. Four are nurses, three are stomatherapists, two are physiotherapists, and one is a doctor. Four have masters’ degrees and three are specialists. Two judges resided outside the state; one is from Curitiba and the other is from São Paulo. All have experience in PFD and knowledge on the ‘vaginal pessary’ subject, have published works and participate in research groups in the area of Urogynecology.

Table 1 shows total values of CVI according to the clinical protocol evaluation criteria.

<table>
<thead>
<tr>
<th>Objectives criterion</th>
<th>CVI*</th>
<th>Content and presentation criterion</th>
<th>CVI*</th>
<th>Relevance criterion</th>
<th>CVI*</th>
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</thead>
<tbody>
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<td>Item 1</td>
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<td>Item 10 0.85</td>
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<tr>
<td>Total CVI</td>
<td>1.00</td>
<td>0.98</td>
<td>0.96</td>
<td>Overall CVI</td>
<td>0.96</td>
</tr>
</tbody>
</table>

*CVI – Content Validity Index

The ‘objectives’ criterion refers to the purposes, goals or ends to be achieved with use of the protocol. In this regard, the evaluators rated the clinical protocol as 3 – Appropriate, and 4 - Totally appropriate, and the total CVI of the domain was 1.00.
The ‘content and presentation’ criterion refers to the form of presentation of the guidelines. This includes general organization, structure, presentation strategy, consistency, and formatting. The content and presentation evaluated were rated by most professionals as 3 - Appropriate and 4 - Totally appropriate. However, an evaluator rated the item referring to the number of pages as 2 - Partially appropriate. The total CVI for this criterion was 0.98.

The ‘relevance’ criterion, in turn, refers to the characteristic evaluating the significance level of the presented protocol. Reporting to this criterion, the evaluators attributed 3 - Appropriate and 4 - Totally appropriate, and the total CVI of this domain was 0.96. The overall CVI was 0.98. Thus, there was agreement among participants of the Delphi technique in the items, domains and in a global way with a value of 0.85 or more, hence the review step was considered appropriate.

Professionals have also made some suggestions for improving the quality of the protocol before the final evaluation. These suggestions were analyzed and adopted, as shown in chart 1.

<table>
<thead>
<tr>
<th>Evaluators’ suggestions</th>
<th>Changes made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reformulation of protocol considerations</td>
<td>The target audience of the protocol was defined as health professionals working in the area of PFD rather than in Urogynecology.</td>
</tr>
<tr>
<td>Insertion of figure</td>
<td>The figure of the pessary was inserted next to the explanation of each specific type.</td>
</tr>
<tr>
<td>Replacement of term in English</td>
<td>The name of the pessary type ‘Donut’ was changed to ‘Rosca’.</td>
</tr>
<tr>
<td>Insertion of table</td>
<td>A table was inserted with the main intercurrences in the use of pessaries and their management.</td>
</tr>
<tr>
<td>Detailing/ Reformulation of content</td>
<td>POP classifications were better detailed (POP-q); The steps for selecting and adjusting the pessary were rearranged; One more item was included in the steps for insertion of the pessary; Inclusion of the possibility of the stomatherapist nurse acting together with the physiotherapist in the conservative treatment with training of the pelvic floor musculature.</td>
</tr>
</tbody>
</table>

*PFD – Pelvic Floor Dysfunction; *POP – Pelvic Organ Prolapse; *POP-q – Pelvic Organ Prolapse Quantification System

**Discussion**

The development of technologies aimed at improving health professionals’ technical-scientific knowledge should be encouraged, because they arouse interest in the search for updated information, and innovate the care practice.

Considering the relevance of the topic and the fact that this area is still little known within Nursing, the development and validation of this protocol may expose this practice and encourage nurses to enter this type of service, since these professionals can manage the conservative treatment with pessary effectively. In addition, it might increase indicators of quality of care, and serve as a guide for evidence-based health care.

The main challenge in the development of protocols, is ensuring their reliability so that health professionals feel comfortable to follow their recommendations. In this regard, protocol development methods have sought to increase the transparency and quality of the process and stimulate the participation of those interested throughout each step. The development of justification, objectives and content with technical-scientific reference as a starting point is also important in the development of a protocol.

The brainstorming technique becomes useful at this starting point, since it involves the development of a group’s collaborative creativity and consequent organization of these ideas to a given process. This technique has been applied increasingly along with the internet, virtual meetings and specific software for documenting ideas. Electronic Brainstorming involves group members (ranging from five to seven) at computer terminals, who type their ideas and have full access to the ideas of the other participants. Thus, it is easy to join ideas of important contents for construction of technologies.

Studies show the importance of this guided listening through the use of brainstorming with the service staff in order to assess the needs and ideas for protocol creation, meetings and interviews with clients and discussions with professionals. Furthermore, the use of online resources is also beneficial and effective for the development of technologies, as it enables and encourages both interaction and collaboration of participants.

According to Catunda et al. (2017), despite variations in protocol development methods, there are common steps, among which the participation of target patients of the protocol for assisting in the process. However, the theoretical references do not
specify an ideal number, and there are variations between studies. (27)

After collaboration of all participants in the first step of the protocol development, each comment/suggestion was analyzed, and topics and subtopics were extracted from the mandatory content, namely: definition, risk factors and types of PFD; definition, quantification, risk factors and treatments of POPs; aspects related to vaginal pessary such as definition, comparison with surgical treatment, complications in quality of life, Brazilian panorama, types, indication, advantages, disadvantages, barriers to use, how to approach the patient, multidisciplinary team, first consultation, insertion consultation, subsequent consultations, anamnesis, physical examination, complementary exams, estrogenization, guidance on the device and care, measurement, insertion, removal, possible complications and return period.

The review of the scientific literature is the search and critical analysis of the publications. It is a strategic step in the development of protocols, in which finding the best evidence on the proposed subject is essential for the construction of consistent and higher quality protocols that are focused on the methodology used, critical analysis of the literature used, levels of evidence, grade of recommendation, entities participating in the validation and the form of validation. (11,14)

In other studies of protocol development, was also conducted a review of the scientific literature for the collection and selection of content through computerized databases. (28-30) Therefore, this step is the basis for selecting the content of the clinical protocol, because the dissemination of scientific evidence is fundamental in order that professionals can guide their practices.

Aiming at the quality of the protocol, were used the review of the scientific literature, ideas of professionals of the area and of device users, and insertion of the researcher into the service. This integration of the best available evidence in the literature, professionals’ clinical experience, patients’ preferences and resources available at the institution are characteristics of the Evidence-Based Practice (EBP). (31)

EBP is the conscious, explicit and judicious use of the best available evidence in patient care decision-making. It is focused on problem-solving grounded on the best scientific evidence with the aim to improve care, identify and promote effective practices for minimizing gaps between the production of evidence and its application in patient care. (11)

Still in the search for quality, it is expected that protocols are clear and easy to read, have good formal quality and evidence-based content, follow a logical and progressive order, and are useful and relevant to the target audience. (11)

Thus, the content of the protocol was divided into the following sessions: Preface; Justification; Protocol Considerations; Procedure of Search for Scientific Evidence; Classification System of Levels of Scientific Evidence and Grade of Recommendation; General Definitions on the Topic; Vaginal Pessary: general considerations; Assistance to the Vaginal Pessary Consultation; First Consultation for Evaluation of Women with Vaginal Pessary Therapeutic Indication; Vaginal Pessary Insertion Consultation; Follow-up Consultation for Women using Vaginal Pessary; References; Annex and Appendices with their respective sub-sessions.

The explicit and concise representation of processes is essential in order to improve the organization and facilitate the protocol management by professionals. Thus, for the order and establishment of action flows of a protocol focused on health outcomes, it is advisable to use algorithms represented in the form of flowcharts. (11,15)

The flowcharts of the protocol were titled: 1) Algorithm for evaluation of women with therapeutic indication of the pessary; 2) Algorithm of the insertion consultation of the pessary; 3) Algorithm of the follow-up consultation of women using the pessary.

Another important aspect in the protocol development is the experts review in order to check organizational effects of the implementation of recommendations that is a preparation for its future adoption. This is considered the first dissemination of the protocol, when researchers have the opportunity to address the issues raised by reviewers before finalization of the process. (32)

To this end, in the present study was used the Delphi technique, which is a systematized method of judging information. Its aim is to reach the con-
sensus of opinions on a certain subject of knowledge of a group of experts through articulated validations in rounds of questionnaires repeated until reaching consensus among participants of 70 to 80%, or a determined percentage duly justified by the researcher.\(^{33,34}\)

The CVI is a widely used method in the health area for measurement of the proportion or percentage of judges in agreement on certain aspects of the instrument and its items.\(^{18}\)

Regarding the number of participants, there must be at least seven and a maximum of 30 subjects. However, the decision on this number is based on aspects such as the nature of the object of study, which may point to a greater or lesser availability of participants.\(^{29}\)

In the study by Sousa and Turini (2012)\(^{35}\) was also applied the Delphi technique with the objective to assist in the construction of an educational material for patients undergoing orthognathic surgery, and to evaluate the pertinence of information contained in this technology with the multiprofessional team. The educational material evaluation was carried out in relation to coherence/pertinence and illustration of the information by means of a Likert-type instrument. The minimum value used for agreement between the ten judges was 0.85.\(^{35}\)

A methodology that uses the Delphi technique can be useful in the construction of educational technologies, since participants’ contributions are rich for improvement of the final work. The experts made relevant suggestions of changes for improving the protocol, even though the overall CVI was satisfactory in the study (0.98). These changes were related mainly to contents and presentation of the protocol in order to facilitate the understanding of professionals that use it. In addition, was established the applicability of the educational material for clinical practice.

Conclusion

The clinical protocol for the use of vaginal pessaries was developed through rigorous steps that included consultation with health professionals from different areas with expertise in PFD, consultation with pessary users, researcher’s experience in practice, and the search for evidence in the scientific literature. In the review step, the protocol was evaluated by means of the Delphi technique, and the total CVI of each domain and overall CVI were calculated. The total CVI of the objectives domain was 1.00, of the content and presentation criterion was 0.98, and of the relevance domain was 0.96. The overall CVI was 0.98. Thus, there was agreement among Delphi participants with a value above 0.85, and the clinical protocol was considered valid for professional clinical practice.

Acknowledgements

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Collaborations

Ferreira HLOC, Bezerra KC, Freitas VCA, Silva TM, Moura ERF, Vasconcelos CTM, Pinheiro AKB and Aquino PS contributed equally to the design of this study, its analysis and interpretation of data, critical review of the intellectual content and approval of the final version to be published.

References

Protocol for pelvic organ prolapse treatment with vaginal pessaries


Anxiety and clinical outcomes in coronary patients undergoing unplanned catheterization

Ansiedade e desfechos clínicos em pacientes coronariopatas submetidos ao cateterismo não programado

Letícia de Carvalho Batista
Ana Lúcia Siqueira Costa Calache
Rita de Cassia Gengo e Silva Butcher

Abstract
Objectives: To describe the state and trait anxiety level in patients with acute coronary syndrome undergoing unplanned catheterization; to assess the influence of trait anxiety on state anxiety before and after catheterization, and check if anxiety (state and trait) is predictive of non-fatal arrhythmias, of patients’ clinical severity measured by the Killip score and the Charlson Comorbidity Index (CCI), and of length of hospital stay.

Methods: An observational, correlational and longitudinal study in which were evaluated participants with acute coronary syndrome waiting for unplanned cardiac catheterization. At the initial meeting (Ti), were collected sociodemographic and clinical data, and were applied the State and Trait Anxiety Inventory (STAI) and Beck Depression Inventory (BDI). At the final meeting (Tf), was applied the STAI-state. Participants were followed up until hospital discharge or death regarding the occurrence of non-fatal arrhythmias and length of hospital stay.

Results: A total of 100 participants were included (62.2±11.4 years; 61% male sex). The STAI-trait score was 42.2±10.4 and it influenced the STAI-state score at Ti and Tf (p<0.005). The STAI-state decreased significantly between Ti and Tf (40.2±10.4 vs 37.2±11.2, respectively, p=0.002). There was no association of STAI-trait or STAI-state with severity indexes, length of hospital stay or arrhythmia occurrence. However, the depression score increased the chance of occurrence of arrhythmias by 9.5% (OR=1.009, 95% CI=0.913-1.115).

Conclusions: The level of anxiety reduced significantly after catheterization, and was not a predictor of short-term clinical outcomes.

Resumen
Objetivos: Describir el nivel de ansiedad rasgo y estado en pacientes con síndrome coronario agudo submetidos a cateterismo no programado; verificar la influencia de la ansiedad trazo en ansiedad estado antes y después del cateterismo, y verificar si la ansiedad (trazo y estado) es predictiva de la ocurrencia de arritmias no fatales, de la gravedad de los pacientes medida por clasificación Killip y el índice de comorbilidad de Charlson, y del tiempo de permanencia hospitalaria.

Métodos: Estudio observacional, correlacional e longitudinal, en el que se incluyó a pacientes con síndrome coronario agudo esperando cateterismo cardíaco no programado. En el encuentro inicial (Ti) se recopilaron datos sociodemográficos y clínicos, y se aplicó la cuestionaria de ansiedad rasgo y estado (STAI) y la cuestionaria de depresión Beck (BDI). En el encuentro final (Tf), se aplicó la STAI-estado. Los participantes fueron acompañados hasta alta hospitalaria o muerte debido a la ocurrencia de arritmias no fatales y tiempo de permanencia hospitalaria.

Resultados: Se incluyó a 100 participantes (62.2±11.4 años; 61% sexo masculino). El escore del STAI-trazo fue 42.2±10.4 e influenció el escore del STAI-estado en Ti y Tf (p<0.005). El STAI-estado disminuyó significativamente entre Ti y Tf (40.2±10.4 vs 37,2±11.2, respectivamente, p=0.002). No se observó asociación del STAI-trazo o STAI-estado con los índices de gravedad, tiempo de permanencia hospitalaria o ocurrencia de arritmias. En contraste, el escore de depresión aumentó 9.5% a la ocurrencia de arritmias (OR=1.009, IC95%: 0.913-1.115).

Conclusión: El nivel de ansiedad redujo de forma significativa después de la realización del cateterismo, pero no fue un predictor de desfechos clínicos en curto plazo.

How to cite:
Introduction

Acute Coronary Syndrome (ACS) is a group of clinical symptoms of myocardial ischemia, and its clinical spectrum includes unstable angina (UA) and acute myocardial infarction (AMI) with and without ST segment elevation. It is the most serious manifestation of coronary artery disease (CAD), which is recognized as the leading cause of death in developed and emerging countries, including Brazil. The impact of classic risk factors on the onset and progression of myocardial ischemia is well established, but the influence of psychosocial factors on the morbidity and mortality of patients with ACS is also known.

Depression and anxiety may occur in patients following an episode of ACS. Although the adverse effects of depression on short- and long-term outcomes have been well studied, the effects of anxiety still require further investigation. Anxiety is an emotional state characterized by feelings of concern and apprehension. The literature suggests that 20% to 30% of patients experience high levels of anxiety after an episode of ACS, and in half of them the symptom may persist for up to a year after the coronary event.

There are different theoretical models available for anxiety analysis. In the present research, was adopted the Spielberger’s anxiety model, in which two constructs are generated in the evaluation, namely the trait and the state. The trait refers to the anxious profile, that is, more or less stable individual characteristics of personality with respect to the propensity to be anxious. The state refers to a transient emotional state characterized by unpleasant feelings of tension and apprehension.

The state and trait of anxiety have been observed in different clinical conditions, including patients with ACS. Both constructs are targets in nursing research with the aim to recognize their manifestations, predictive factors, and test interventions. However, the relationship between the level of anxiety and the severity of heart disease is not established.

Furthermore, studies have documented the adverse outcomes of anxiety in cardiovascular health in patients with ACS, in the short and long term. Researchers found that after an episode of ACS, patients with anxiety had a higher rate and higher risk of developing in-hospital complications compared to those without anxiety. In another study, it was demonstrated that the high level of anxiety increased the relative risk of cardiac event recurrence 12 months after percutaneous coronary intervention.

Studies on analysis of the relationship of anxiety with short-term outcomes in patients with ACS undergoing unplanned catheterization are scarce. In this study, the term unplanned catheterization was used to generically designate percutaneous coronary interventions that had not been scheduled prior to the patient’s visit to the emergency department. In the face of a life-threatening situation (ACS) and the imminence of an unscheduled invasive examination, the trait anxiety determines the increase in state anxiety, is related to disease severity, and influences short-term clinical outcomes. Furthermore, clinical experience shows that patients with ACS and undergoing unplanned catheterization experience shorter hospital stay compared to those undergoing surgery, which can be a challenge for the diagnosis, planning and implementation of care for anxiety management.

The aims of this study were to describe the level of state and trait anxiety in patients with ACS, to prove if there is influence of the level of anxiety trait in the level of anxiety state before and after catheterization, and to confirm if anxiety (state and trait) is predictive of the occurrence of non-fatal arrhythmias, of the clinical severity of patients measured by the Killip classification and by the Charlson Comorbidity Index (CCI), and of length of hospital stay.

Methods

Observational, correlational, longitudinal study performed in a public reference hospital in cardiopneumology. The data collection period was from July to October 2017.

The sample size was calculated in 99 participants, and the following were considered: the prev-
alance of anxiety of 50% in coronary patients undergoing percutaneous procedures, the number of catheterizations performed in the hospital (field of study) in patients admitted with ACS in the emergency department, and a type error I of 5%.

Participants included in the study were aged 18 years or older, with confirmed diagnosis of UA and non-ST-segment elevation acute myocardial infarction (NSTEMI), who underwent unplanned catheterization and were hemodynamically stable. Participants with ST-segment elevation AMI were not included because they were quickly referred to catheterization hence, making data collection impossible. The following were excluded: those with ischemic pain at the time of data collection; whose conduct was modified after the initial planning of catheterization; with documented diagnosis of anxiety or depression and using mood modulators.

Participants were recruited prior to cardiac catheterization. At the initial meeting (Ti), sociodemographic data (age, sex and educational level) and clinical data (medical diagnosis, cardiovascular risk factors, comorbidities and Killip classification) were collected by consulting the medical records or through the interview, and were applied the State-Trait Anxiety Inventory (STAI), the Beck Depression Inventory (BDI), and the Charlson Comorbidity Index (CCI). The final meeting (Tf) occurred six to 12 hours after catheterization, when the main researcher applied the STAI-state.

The STAI has scales that were translated and validated into Brazilian Portuguese. Each construct is evaluated by means of 20 items followed by a 4-point Likert scale. In order to avoid response bias, some items are presented in reverse order and individual scores must be inverted for the calculation of the score. The total score ranges from 20 to 80 for each scale, and the higher the score the higher the level of anxiety.

Considering that anxiety and depression often overlap, the BDI was chosen for evaluation of the depression score. The scale has been translated and validated for Portuguese, and has 21 items classified in a 4-point Likert scale. The total score ranges from 0 to 63 points.

Clinical severity was assessed using the CCI and the Killip classification system. The CCI assesses clinical severity according to weight attributed to comorbidities. It consists of 19 clinical conditions, and a 1-6 score is assigned for each condition. The higher the total score, the greater the severity. The Killip classification evaluates the patient’s severity after probable AMI based on data from the physical examination indicative of cardiac dysfunction. Patients can be classified as Killip I (without pulmonary congestion), Killip II (pulmonary rales, jugular stasis or third heart), Killip III (pulmonary edema) and Killip IV (cardiogenic shock).

Participants evaluated at Tf were monitored through their medical records until hospital discharge or death for monitoring the following outcomes: non-fatal arrhythmias and length of hospital stay.

For analysis of the continuous variables, were calculated mean and standard deviation. Categorical variables were analyzed by means of absolute and relative frequency calculations. A paired T-test was used to compare means. The influence of the STAI-trait score on the change of the STAI-state score before and after the catheterization and the associations between the STAI-trait score with the STAI-state score at Ti and Tf, and between the score of STAI-state/trait with the CCI and hospital length of stay was determined by linear regression model. The model adjustment was verified through R². In turn, logistic regression models were used to determine the association between the score of the STAI-state/trait with the Killip classification and arrhythmia. The predictive capacity of these models was assessed through the area under the ROC (Receiver Operating Characteristic Curve) curve. The significance level was set at 5%.

The study was approved by the Ethics Committee of the proposing institution (process number 2.087.449) and of the coparticipant institution (process number 2.126.485).

Results

A total of 116 participants were included in the study, of whom 16 were excluded because of change
of conduct after the initial planning of catheterization, hospital discharge before Tf, diagnosis of anxiety or depression, and use of mood modulators. In the final sample, 100 participants were followed up from admission to the emergency department until discharge from the hospital (discharge or death). They had a mean age of 62.2±11.4 years, 61% were male, 60% were married, 39% had incomplete primary education, 47% had diagnosis of NSTEMI, and 54% underwent angioplasty. Furthermore, 53% reported a sedentary lifestyle, 22% were smokers, 43% were overweight or obese, 53% had previous diagnosis of unstable angina, 82% of hypertension, 41% had diabetes, 40% had dyslipidemia, 8% had heart failure, 6% had cerebrovascular accident, 18% had undergone previous angioplasty, and 24% underwent surgery.

Regarding severity, the CCI was 2.1±1.7, 12.8% of participants with NSTEMI were classified as Killip II and 10% presented non-fatal arrhythmias. The mean length of hospital stay was 6.4±7.3 days. The mean BDI score was 12.8±9.2.

The mean score of STAI-trait at Ti was 42.2±10.4. The STAI-state score before catheterization was significantly higher than after the procedure (40.2±10.4 vs 37.2±11.2, respectively, p=0.002).

There was an association between the STAI-trait score and the STAI-state score at both measurement moments. At the Ti, the STAI-state score increased by 0.406 (95% CI 0.222-0.589, p<0.001) for each point of the STAI-trait. At Tf, the STAI-state score increased 0.357 (95% CI 0.155-0.559, p=0.001) for each point of the STAI-trait. However, the STAI-trait score did not influence the difference in the STAI-state score before and after catheterization (p=0.602).

In relation to outcomes of interest, in the univariate analysis, there was a significant correlation of the CCI with the STAI-trait score (r=0.329, p=0.001), but not with the STAI-state score (r=0.109, p=0.282). On the other hand, there was no association between the Killip score with trait anxiety scores (p=0.742) or state anxiety scores (p=0.550), nor correlation between the length of hospital stay with those scores (r=-0.017, p=0.870 and r=0.061, p=0.547, respectively). There was no association between the occurrence of arrhythmias with trait anxiety scores (p=0.960) or state anxiety scores (p=0.250), but the regression model (Table 1) shows the relationship between the occurrence of non-fatal arrhythmias and the depression score influenced by anxiety-state.

In table 1, the STAI-state score was not a predictor of the occurrence of non-fatal arrhythmias. The predictive capacity of the model is shown in figure 1.

Table 1. Regression model of predictive variables of the occurrence of non-fatal arrhythmias in patients with acute coronary syndrome undergoing catheterization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds ratio</th>
<th>Standard error</th>
<th>Wald</th>
<th>95% confidence interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrhythmia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI-state</td>
<td>0.930</td>
<td>0.047</td>
<td>2.370</td>
<td>0.848-1.020</td>
<td>0.124</td>
</tr>
<tr>
<td>Age</td>
<td>0.999</td>
<td>0.033</td>
<td>0.001</td>
<td>0.967-1.065</td>
<td>0.979</td>
</tr>
<tr>
<td>Male sex</td>
<td>5.340</td>
<td>0.969</td>
<td>2.990</td>
<td>0.800-35656</td>
<td>0.084</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.917</td>
<td>0.195</td>
<td>0.196</td>
<td>0.626-1.344</td>
<td>0.658</td>
</tr>
<tr>
<td>Smoking</td>
<td>0.370</td>
<td>1.143</td>
<td>0.143</td>
<td>0.039-3.477</td>
<td>0.385</td>
</tr>
<tr>
<td>Sedentary lifestyle</td>
<td>0.918</td>
<td>0.788</td>
<td>0.012</td>
<td>0.196-4.306</td>
<td>0.914</td>
</tr>
<tr>
<td>Overweight/Obesity</td>
<td>1.156</td>
<td>0.779</td>
<td>0.035</td>
<td>0.251-5.319</td>
<td>0.852</td>
</tr>
<tr>
<td>BDI score</td>
<td>1.095</td>
<td>0.046</td>
<td>3.870</td>
<td>1.000-1.199</td>
<td>0.049</td>
</tr>
<tr>
<td>CCI score</td>
<td>0.746</td>
<td>0.291</td>
<td>1.012</td>
<td>0.422-1.320</td>
<td>0.314</td>
</tr>
<tr>
<td>Constant</td>
<td>0.382</td>
<td>2.810</td>
<td>1.117</td>
<td></td>
<td>0.382</td>
</tr>
</tbody>
</table>

BDI – Beck Depression Inventory; CCI – Charlson Comorbidity Index

In table 1, the STAI-state score was not a predictor of the occurrence of non-fatal arrhythmias. The predictive capacity of the model is shown in figure 1.
The state and trait anxiety scores were not predictors of participants’ clinical severity, as measured by the Killip classification (OR=0.904, 95% CI=0.747-1.095; AUC = 0.814 and OR=0.994, 95% CI=0.889-1.112; AUC=0.799, respectively). These were neither predictors of length of hospital stay (B=0.115, 95% CI=0.123-0.284; R²=0.090 and B=-0.025; 95% CI=0.165-0.130, R²=0.095) in regression models corrected for confounding variables (age, male gender, educational level, risk factors, BDI and CCI score).

**Discussion**

Anxiety has been associated with the onset and progression of cardiovascular diseases, as well as with adverse cardiovascular outcomes, including mortality.(16) This study analyzed the relationship of anxiety scores assessed by the STAI-state and STAI-trait with short-term outcomes in patients with ACS undergoing unplanned catheterization. The results of this study may contribute to improve the understanding of the influence of this phenomenon mediated by intervening factors (age, sex, educational level, cardiovascular risk factors, comorbidities and depression) in these patients’ health.

The sociodemographic profile of participants of this study, the risk factors presented, and their comorbidities are similar to those observed in the literature.(16,17) The state anxiety level was significantly higher prior to catheterization than after. This was expected because the state anxiety level increases in threatening situations and tends to decrease when the threat is controlled or no longer exits. The decrease in anxiety level after an invasive procedure was also found in a longitudinal study in which was evaluated the anxiety in patients undergoing elective percutaneous coronary treatment at different stages (one day before the procedure, and one day, one month, three months, six months and one year after the procedure).(18)

However, the usual level (trait) of anxiety did not influence the difference in the level of state anxiety before and after catheterization. A hypothesis to explain such observation is that the influence of contextual factors, for example, staying in a strange environment as the emergency department, or of individual factors beyond the anxious profile, such as understanding about the purpose of catheterization, has determined the response of decreased anxiety-state.

Although not influencing the level of state anxiety reduction, the association of anxiety-trait with anxiety-state before and after catheterization suggests the relationship between habitual level of anxiety and the level of anxiety of moment (state), which, in this case, is influenced by the performance of an invasive procedure in the presence of ACS. This association was also observed in other studies both in patients with heart disease and in other groups.(19-21)

Regarding the short-term outcomes analyzed, it could not be demonstrated that anxiety is a predictor of the occurrence of non-fatal arrhythmias. Although our initial hypothesis has not been confirmed, there is underlying pathophysiological foundation. Anxiety is associated with changes in heart rate variability, sympathetic nervous system hyperactivity, and autonomic dysregulation.(22) Such effects on the cardiovascular system potentiate the occurrence of arrhythmias and may even lead to higher mortality in these patients.(22) Possibly, the standard pharmacological treatment of ACS patients, which includes the use of antiarrhythmics may have influenced the relationship between anxiety and arrhythmias observed in this study.(23)

The clinical severity of participants was determined by the Killip classification and the CCI. While the aim of the first one is to estimate the severity of patients after AMI and showed a relevant prognostic performance at a five-year follow-up in patients with ACS, the CCI considers the impact of chronic comorbidities on the chance of survival.(14,24,25) For some participants in this study, the Killip classification II may suggest poor clinical prognosis, even though the CCI was low.(26) In the literature, Killip classification is an independent predictor of in-hospital complications in patients with ACS, whose risk is five times greater in those with anxiety.(10) In another study was investigated a similar population, and a similar CCI value
Anxiety and clinical outcomes in coronary patients undergoing unplanned catheterization

was found.\(^{(27)}\) In any case, CCI is known as an adequate prognostic indicator to assess the risk of in-hospital mortality in patients with ACS after one year of the event.\(^{(25)}\)

Together, these data show the clinical severity profile of participants, whether based on the occurrence of complications after AMI or by the impact of comorbidities. Differently from expected, trait and state anxiety were not predictors of the severity of participants as assessed by the Killip classification, which can be explained by the low number of participants who presented such condition.

Considering that clinical severity after AMI can also be expressed by the occurrence of other cardiac events or by the mortality rate, its relation with anxiety remains unclear. In another study, anxiety symptoms were not associated with the occurrence of fatal and non-fatal cardiac events at a 10-year follow-up.\(^{(28)}\) However, other authors have found different results regarding the association of short- and long-term outcomes with anxiety.\(^{(10,11)}\) Further investigations are needed to assess the influence of anxiety on short-term outcomes in patients with ACS.

There was no association between length of hospital stay and level of anxiety, and neither were the trait and state anxiety scores predictive of length of hospital stay. In the literature, there is no consensus about the relationship between anxiety and length of hospital stay.\(^{(29,30)}\) However, it has been shown that the average length of hospital stay for this group of patients has been decreasing over the last 20 years.\(^{(31)}\) This fact is a challenge for proposing strategies aimed at reducing anxiety levels in these patients.

This study has limitations. Data collection in a single center and in a highly specialized service, as well as not including AMI patients with ST-segment elevation may compromise the generalization of results. In addition, collecting clinical data from patients’ medical records depends on the accuracy and completeness of the documented information. In spite of the potential influence of the time between hospitalization and catheterization on anxiety levels, this information was not analyzed in the present study. Thus, other studies that assessing anxiety in patients with ACS undergoing unplanned catheterization should be conducted in order to enable greater understanding of the phenomenon and its association with short-term outcomes.

**Conclusion**

The level of anxiety in patients with ACS undergoing unplanned catheterization decreased significantly after the procedure. Moreover, although the usual level of anxiety (trait) is associated with the level of anxiety of the moment (state), the difference in state anxiety score before and after catheterization was not influenced by the level of trait anxiety. Trait and state anxiety scores were not predictive of short-term outcomes (non-fatal arrhythmia, clinical severity, and length of hospital stay).

**Collaborations**

Batista LC, Calache ALSC and Butcher RCGS declare they have contributed to the design of the study, analysis and interpretation of data, relevant critical review of the intellectual content and approval of the final version to be published.

**References**


Advanced practices in comprehensive nursing care for people with skin ulcer
Prácticas avanzadas no cuidado integral de enfermería a personas con úlceras cutáneas

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Giovana Andrade Frederico¹
Dayse Christielle Alves Martins Morales¹
Anna Carolina Martins Silva¹
Mônica Antar Gamba¹

Abstract
Objective: To identify clinical outcomes of people with chronic skin ulcer seen in nursing consultations.

Methods: Cross-sectional study of the analysis of nursing consultation records for people with chronic wound treated at a Nursing Care Center from 1994 to 2015, from the perspective of Collective Health. The variables investigated were epidemiological, wound advanced treatment centers, abandonment and death.

Results: There was a high proportion of elderly, female, with complete elementary and middle school, white self-reported color, retirees, dependents on the Brazilian Unified Health System (Sistema Único de Saúde) and with chronic health diseases identified among the 343 patients medical records. Etiology of skin ulcer was higher in the neuropathic and venous areas without previous clinical resolution in the health services network. Healing occurred in 67.6% of wound by adoption focused on nursing care. A low rate of abandonment and death was observed.

Conclusion: There were satisfactory clinical outcomes of people with chronic skin ulcer as evidenced in nursing care records. Nursing consultation showed a potential strategy for advanced wound care.

Keywords
Community health nursing; Skin ulcer; Integrality in health

Descritores
Enfermagem em saúde comunitária; Úlcera cutânea; Integralidade em saúde

Resumen
Objetivo: Identificar los resultados clínicos de personas con úlceras cutáneas crónicas atendidas en consultas de enfermería.

Métodos: Estudio transversal de análisis de registros de consultas de enfermería a personas con úlceras cutáneas atendidas en un Centro de Asistencia de Enfermería entre 1994 a 2015, sob la perspectiva de la Salud Colectiva. Las variables investigadas fueron epidemiológicas, clínicas de cicatrización de la úlcera, abandono e índice de usuarios. 

Resultados: Dentro de los 343 prontuarios de personas atendidas en el servicio, identificó una mayor proporción de idosas, de sexo femenino, con ensenanza primaria, de color autorreferido blanco, jubilados, dependientes del Sistema Único de Salud y con condiciones crónicas de salud. La etiología de las úlceras cutáneas fue mayor en las neuropáticas y venosas sin resolución clínica previa en la red de servicios de salud. La cicatrización ocurrió en 67.6% de las úlceras por adopción centrada en la atención de enfermería. Una baja tasa de abandono y muerte fue observada.

Conclusión: Los resultados clínicos satisfactorios de personas con úlceras cutáneas crónicas fueron evidenciados en los registros de cuidados de enfermería. Un consulta de enfermería mostró un estrategia potencial para la cicatrización de úlceras cutáneas.

Resumen
Objetivo: Identificar los resultados clínicos de personas con úlceras cutáneas crónicas atendidas en consultas de enfermería.

Métodos: Estudio transversal de análisis de registros de consultas de enfermería realizadas por personas con úlceras cutáneas en un Centro de Atención de Enfermería entre 1994 y 2015, bajo la perspectiva de la Salud Colectiva. Las variables investigadas fueron epidemiológicas, clínicas de cicatrización de la úlcera, abandono y muerte de usuarios.

Resultados: De las 343 historias clínicas de personas atendidas en el servicio, se identificó mayor proporción de ancianos, de sexo femenino, con enseñanza primaria, de color autorreferido blanco, jubilados, dependientes del Sistema Único de Salud y con condiciones crónicas de salud. La etiología de las úlceras cutáneas fue mayor en las neuropáticas y venosas sin resolución clínica previa en la red de servicios de salud. La cicatrización ocurrió en el 67,6% de las úlceras por adopción enfocada en la atención de enfermería. Se observaron bajas tasas de cesación del tratamiento y decesos.

Conclusión: Los resultados clínicos satisfactorios de personas con úlceras cutáneas crónicas fueron evidenciados en los registros de cuidados de enfermería. La consulta de enfermería se constituyó en estrategia potencial para la cicatrización de úlceras cutáneas.
Introduction

Person-centered care is a challenge and a need/demand in the Brazilian Unified Health System (SUS – Sistema Único de Saúde) based on the principle of comprehensiveness. From this point of view, health promotion focuses on primary care, which is highlighted in the prevention of complications due to chronic diseases.\(^{(1-3)}\)

In general, care for people with skin injuries is centered on skin disease/injury, mediated by specialties and disconnected from comprehensive care, with assessment of the person only for wound treatment, whether in primary, secondary or tertiary care.\(^{(3)}\)

Nursing consultation had its entrance in Brazil in the 80’s. Since then, numerous documents and articles have been published, demonstrating its potentialities and highlighting that it does not overlap another clinical activity, but it potentiates the process for building bond and autonomy for treatment.\(^{(3-5)}\) Nursing actions should follow a systematization in the scope of comprehensive care based on concepts and practices of the Expanded Clinic and the Projeto Terapêutico Singular (STP- Singular Therapeutic Project), it is a set of proposals of articulated therapeutic behaviors for an individual or collective subject). These actions emerge as a radical commitment to subjects and their singularities, seeking intersectoriality in actions, and assuming co-responsibility in health care.\(^{(5-7)}\)

Social inequalities and access to goods, low levels of education, beliefs, values, and modifiable risk factors such as smoking, consumption, physical inactivity and inadequate nutrition constitute potential/determinants and contribute to the emergence of chronic noncommunicable diseases (CNCDs) and their complications. These factors increase the chance of skin ulcer occurring.\(^{(6,9)}\)

It is estimated that by 2050, about 25% of the elderly population will have chronic skin injuries.\(^{(10)}\) Chronic skin ulcer are those whose etiologies are due to late diagnosis or inadequate treatment of long-term infectious or NCDs. Often, these wounds do not respond to usual treatments, failing to heal despite adequate interventions.\(^{(11)}\) The most prevalent types of wounds in primary health care are diabetic, venous, arterial, followed by pressure injury.\(^{(12)}\) The presence of these afflictions represents a loss in the quality of life because it causes limitation in the activities of daily life, work, leisure, and family and social coexistence.\(^{(13)}\)

It is necessary that care for people with skin ulcer be adopted from early diagnosis, technical ability of the nursing team and specific knowledge. This care was subsidized by care protocols, with integration and global evaluation of multiprofessional team for articulation between different levels of health care, with effective participation of the person and his relatives.\(^{(14,15)}\)

Consistent with the practice of care, it is observed in scientific research care is focused on the use of hard technologies, such as curative and adjuvant therapies.\(^{(16)}\) The nurse has an essential role in the care for people with wounds and in the work with the team developing planning, organization and execution actions of advanced practices in nursing in the skin care.\(^{(3,16-19)}\)

An investigation has described that the nurse’s autonomy in caring for people in advanced wound care as the strategy to promote autonomy and self-esteem of people affected. This autonomy expands to the perspective of adhesion and resolution of the grievance manifested, because it acts positively on feelings, spirituality, emotions beyond the care centered on the biological model and the exchange of dressing. Thus, nursing consultation constitutes a timely strategy to address these aspects that influence the coping and healing of injuries.\(^{(17)}\)

Difficulties in the maintenance of care, living conditions and health service evaluations, in relation to access availability, available resources and motivation of professionals involved in care are a challenge nowadays.\(^{(18)}\)

This study is justified by the impact that chronic skin ulcer/wounds and complications cause in the quality of life of people living with the disease, family and society; and the way in which nursing care is offered to the population.

In this perspective, the question is: what are the clinical outcomes of people with chronic skin prob-
lems and complications, seen at a nursing consulta-
tion in a care center?

This study aimed to identify the clinical out-
comes of people with chronic skin ulcer seen in
nursing consultations from the perspective of
Collective Health.

Methods

This is a cross-sectional study, based on the doc-
umentary analysis of records of people diagnosed
with chronic skin ulcer treated between 1994
and 2015, at Centro de Assistência e Educação em
Enfermagem (CAENF), a service integrated with a
public university of the city of São Paulo.

This site was created in 1994 as a support, care
and embracement service for people in the health
service network, whose wounds were not clinical-
ly resolvable and required continuity of treatment.
It was also used as a place to train nursing under-
graduates and professionals from the health services
network.

Population care was carried out through nursing
consultations, based on the principles and assump-
tions of SUS, nursing process and guidelines of
Collective Health actions, in which the exchange of
popular/technical and scientific experiences/knowl-
edge is valued.

Data were collected between 2014 and 2015.
The strategy used was the construction and appli-
cation of an instrument based on the scientific lit-
erature and the researchers’ work with people with
chronic skin ulcer. The secondary source consisted
of the information contained in printed records of
nursing care systematization, in systematizations
charts, of the nursing consultations of people treat-
ed between 1994 and 2015. This information was
consolidated in a database in 2015.

The variables investigated were sociodemo-
graphic, risk factors and life habits, presence of co-
morbidities, etiology and evaluation of the injury as
to the type of tissue, exudate and diameter, identi-
fied through standardized scores in care protocols
and guidelines. Possible outcomes were complete
healing, abandonment of treatment or death, and
access to referral and counter-referral services were
confirmed by telephone survey in 2014 and 2015.

Data analysis was performed from 2015 to
2016, using Excel 2007® and EPI-INFO programs.
In addition to the descriptive analyzes, the hypo-
thesis test of the nominal variables was performed,
applying the student’s t test and the chi-square sta-
tistics ($\chi^2$; CI=95%).

The ethical requirements established in
Resolution 466/2012 of the National Health
Council were met. This research was approved
by the Ethics Committee on Research Involving
Human Beings of Universidade Federal de São Paulo,
on December 12, 2013, under Opinion 482,039.

Results

A total of 343 records of people with chronic skin
ulcers, with a mean age of 61.2 years, median age of
64 years (CI=9-91 years, SD=16.22 years) were an-
alyzed. 51.3% were female and 75.6% lived in the
country’s southeastern region. 65.9% was white.
47.8% had study time of eight years. Occupational
data indicated that 62.8% of the people were re-
tired; from the home; on medical leave or unem-
ployed. 55.4% were married and the per capita
income was three minimum wages for 83.2% of
these. The presence of religion was enunciated in
80% of the users (Table 1).

Clinical variables indicated arterial hyperten-
sion (64.2%), followed by Diabetes Mellitus (DM)
(71.5%) and type II Diabetes Mellitus (76.3%),
smoking in the past (37.5%) and current 16%;
past alcohol consumption (26.3%) and current
(14.8%), with an average duration of illness of 15.2
years. Chronic pressure lesions were detected, being
37% neuropathic, 23.4% venous, 12.3% oncolog-
ical, 7.6% mixed, 6.3% arterial; 4.8% due to pres-
sure lesion, 3.7% leprosy and 3.3% traumatic, with
average duration of up to 120 days and without
previous clinical resolution. Regarding outcomes, it
was observed that 67.6% of the patients present-
ed complete healing of their injuries after attend-
ing the service; 21.3% continued with therapeutic
treatment; 7.1% did not heal; 0.5% of the people
Trivellato ML, Kolchraiber FC, Frederico GA, Morales DC, Silva AC, Gamba MA

make possible the longitudinal care. Information on the presence, etiology, and evaluation of wound regarding tissue type, exudate and diameter pointed to clinical outcomes. In the analysis of outcomes, people achieved healing by adopting clinical evidence of topical therapies pointed out by specialist societies such as podiatric care for neurotrophic and neuropathic injuries, relief of plantar pressure by orthotics, application of compression with Unna boot for venous ulcer, biofilm control in infectious wounds and referral to vascular surgery for people with arterial ulcer. It was possible to identify that part of the people used only the SUS equipment and services for care, and were referred to CAENF by: University Hospital - (31.4%), basic health unit (BHU) (13%), campaigns for the detection of Diabetes Mellitus (55.6%). For the counter-referral analysis, it was observed that 50% returned to the hospital for different specialties and 41% for

Table 1. Sociodemographic characteristics of CAENF patients

<table>
<thead>
<tr>
<th>Sociodemographic variables</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (n=343)</td>
<td>60.1</td>
</tr>
<tr>
<td>Gender (n=343)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>188 (54.9)</td>
</tr>
<tr>
<td>Female</td>
<td>175 (51.1)</td>
</tr>
<tr>
<td>Marital Status (N=233)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>40 (17.1)</td>
</tr>
<tr>
<td>Married</td>
<td>129 (55.4)</td>
</tr>
<tr>
<td>Divorced</td>
<td>24 (10.4)</td>
</tr>
<tr>
<td>Widow(er)</td>
<td>40 (17.1)</td>
</tr>
<tr>
<td>Education level (N= 230)</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>198 (8.3)</td>
</tr>
<tr>
<td>Incomplete elementary and middle school</td>
<td>44 (19.1)</td>
</tr>
<tr>
<td>Complete elementary and middle school</td>
<td>66 (28.7)</td>
</tr>
<tr>
<td>Incomplete High School</td>
<td>39 (17)</td>
</tr>
<tr>
<td>Complete High School</td>
<td>18 (7.8)</td>
</tr>
<tr>
<td>Higher Education</td>
<td>44 (19.1)</td>
</tr>
<tr>
<td>Color (N=220)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>145 (65.9)</td>
</tr>
<tr>
<td>Black</td>
<td>22 (10)</td>
</tr>
<tr>
<td>Others</td>
<td>53 (24.1)</td>
</tr>
<tr>
<td>Occupation (N=285)</td>
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<tr>
<td>Retired</td>
<td>112 (39.3)</td>
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<tr>
<td>Employed</td>
<td>106 (7.2)</td>
</tr>
<tr>
<td>From the home</td>
<td>43 (15.1)</td>
</tr>
<tr>
<td>Medical leave</td>
<td>134 (4.8)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>113 (3.8)</td>
</tr>
<tr>
<td>Nationality (N=295)</td>
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<tr>
<td>Center-west</td>
<td>41 (1.3)</td>
</tr>
<tr>
<td>Northeast</td>
<td>51 (17.3)</td>
</tr>
<tr>
<td>North</td>
<td>51 (1.7)</td>
</tr>
<tr>
<td>Southeast</td>
<td>223 (75.6)</td>
</tr>
<tr>
<td>South</td>
<td>51 (1.7)</td>
</tr>
<tr>
<td>Others</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>Origin (N= 321)</td>
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<tr>
<td>Central</td>
<td>266 (82.9)</td>
</tr>
<tr>
<td>East</td>
<td>40 (15.2)</td>
</tr>
<tr>
<td>North</td>
<td>31 (1)</td>
</tr>
<tr>
<td>West</td>
<td>20 (6)</td>
</tr>
<tr>
<td>South</td>
<td>10 (3)</td>
</tr>
<tr>
<td>Income (N= 197)</td>
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</tr>
<tr>
<td>Less than 1 minimum wage</td>
<td>3 (1.5)</td>
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<tr>
<td>From 2 to 3 minimum wages</td>
<td>161 (81.7)</td>
</tr>
<tr>
<td>From 3 to 4 minimum wages</td>
<td>18 (9.2)</td>
</tr>
<tr>
<td>From 5 to 6 minimum wages</td>
<td>8 (4)</td>
</tr>
<tr>
<td>More than 6 minimum wages</td>
<td>7 (3.6)</td>
</tr>
<tr>
<td>Religion (N=164)</td>
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</tr>
<tr>
<td>Catholic</td>
<td>86 (52.4)</td>
</tr>
<tr>
<td>Evangelical</td>
<td>26 (15.8)</td>
</tr>
<tr>
<td>Spiritist</td>
<td>15 (9.2)</td>
</tr>
<tr>
<td>Others</td>
<td>37 (22.6)</td>
</tr>
</tbody>
</table>

Table 2. Characteristics of wounds and clinical outcomes of patients treated at CAENF. São Paulo- Brasil

<table>
<thead>
<tr>
<th>Variables</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wounds (n=332)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>290 (87.3)</td>
</tr>
<tr>
<td>No</td>
<td>42 (12.7)</td>
</tr>
<tr>
<td>Number of wounds (n=286)</td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>219 (76.5)</td>
</tr>
<tr>
<td>Two</td>
<td>47 (16.4)</td>
</tr>
<tr>
<td>Three</td>
<td>8 (2.9)</td>
</tr>
<tr>
<td>Multiple</td>
<td>12 (4.2)</td>
</tr>
<tr>
<td>Etiology (n= 300)</td>
<td></td>
</tr>
<tr>
<td>Pressure injury</td>
<td>14 (4.7)</td>
</tr>
<tr>
<td>Neuropathic ulcer</td>
<td>111 (37)</td>
</tr>
<tr>
<td>Venous ulcer</td>
<td>70 (23.4)</td>
</tr>
<tr>
<td>Mixed ulcer</td>
<td>23 (7.6)</td>
</tr>
<tr>
<td>Arterial ulcer</td>
<td>196 (6.3)</td>
</tr>
<tr>
<td>Cancer</td>
<td>37 (12.3)</td>
</tr>
<tr>
<td>Traumatic</td>
<td>100 (3.3)</td>
</tr>
<tr>
<td>Leprosy</td>
<td>113 (3.7)</td>
</tr>
<tr>
<td>Others</td>
<td>5 (1.7)</td>
</tr>
<tr>
<td>Evolution time (n=207)</td>
<td></td>
</tr>
<tr>
<td>Up to 30 days</td>
<td>92 (31)</td>
</tr>
<tr>
<td>From 30 to 90 days</td>
<td>103 (34.6)</td>
</tr>
<tr>
<td>From 91 to 120 days</td>
<td>53 (18)</td>
</tr>
<tr>
<td>Over 120 days</td>
<td>12 (4)</td>
</tr>
<tr>
<td>Over 180 days</td>
<td>206 (6.7)</td>
</tr>
<tr>
<td>More than 365 days</td>
<td>175 (57)</td>
</tr>
<tr>
<td>Outcome (n=197)</td>
<td></td>
</tr>
<tr>
<td>Healing</td>
<td>133 (67.6)</td>
</tr>
<tr>
<td>No healing</td>
<td>14 (7.1)</td>
</tr>
<tr>
<td>Amputation</td>
<td>10 (5)</td>
</tr>
<tr>
<td>Death</td>
<td>3 (1.5)</td>
</tr>
<tr>
<td>Abandonment</td>
<td>42 (2)</td>
</tr>
<tr>
<td>Under treatment</td>
<td>42 (21.3)</td>
</tr>
</tbody>
</table>

n=343

suffered amputation due to acute obstruction of the popliteal artery; and 1.5% died due to aging or other comorbidities (Table 2).

Dermatological propaedeutics guides the care and topical therapies for skin ulcers, as well as the records in medical records of the clinical evolution...
Advanced practices in comprehensive nursing care for people with skin ulcer

All patients were instructed and encouraged to adopt habits that promoted clinical control, skin care and therapeutic monitoring. According to medical records, it was observed that most of the individuals adopted habits for self-care, with subsequent returns to the service, pointing out the bond with the team. There were no statistically significant differences between the individuals with and without ulcer healing for sociodemographic, clinical and access variables. Complete healing of chronic injuries, with evolution of 120 days, was identified in (67.6%) of the people served at CAENF. A discrete protective effect was identified for healing when the habit of ingesting alcoholic beverage was present, as shown in table 3.

Discussion

Person-centered care guided by health education does not overlap another clinical activity, but it potentiates actions for self-care, changes in behavior for exposure to risk factors, and collaborates with the clinical adhesion process.(17-19) Nursing consultations imbued with the perspective of comprehensive care were spaces of interlocution with the intersectorial actions in the search for solutions to the problems detected, such as self-monitoring, therapeutic care, podiatry, mobility, ortetization and adoption of advanced therapies.(20,21)

Adoption of the nursing consultation allowed, in addition to guiding the performance not only focused on the accomplishment of dressings, to implement therapeutic resources as the valorization of the power of listening and of the word, potentializing the effect of health education and allowing the subject to assume his care with autonomy for the treatment.

It is true to recognize that the manifestations of chronic diseases have increased substantially over the years, since environmental factors, such as life habits, food, increased sedentary lifestyle, stress, tobacco use predisposes and aggravates these conditions and their complications. Clinical variables revealed a high prevalence of comorbidities such as arterial hypertension, DM and vascular complications, mainly among the long-lived, which corrob-
rates the literature to affirm the correlation between CNCDs and functional disabilities.\(^{(12)}\)

In the medical records analysis, this study identified the social use of alcoholic beverage with protective effect for the healing of skin ulcer, however, it is necessary to carry out more scientific investigations by comparison with control groups to better elucidate the effect of these beverages.

In 2011, approximately 94% of the amputations performed by SUS were on the lower limb. It is estimated that lower amputations correspond to 85% of all limb amputations, although there is no accurate information on this topic in Brazil. The most frequent indications for these amputations are due to the complications of chronic diseases and occur more frequently in the elderly. In the literature, it is identified that approximately 80% of them are performed in patients with peripheral vascular disease and/or DM, mostly related to recurrences of chronic injuries.\(^{(22,23)}\)

Wounds with a long duration of treatment and, as a function of diabetes and arterial hypertension, was detected in this study, with injuries of neuropathic and plantar etiology being the most frequent. Neuropathy is a complication of poorly controlled diabetes that causes loss of sensory, motor and autonomic function, factors related to the genesis of ulcerations and deformities. Neuropathic injuries require a model of care that assumes pediatric qualification and referral for rehabilitation, preparation of orthoses and healing prostheses and involve a care complexity that requires the adoption of light and hard technologies.\(^{(24)}\)

Actions carried out by nurses and staff guidance as advanced practices for self-care require the individualization of care, care centered on therapeutic action, orientation of changes in habits, pillars of foot management by daily inspection and dermatological care. Such care must be exercised with competence and technical specificity of the skin, requiring the nursing consultation to perform comprehensive, effective therapy that promotes the best practice in the area of skin health care.\(^{(23,25,26)}\) In fact, nursing consultations allow an interpersonal interaction that stimulates the adoption of care for the metabolic control and treatment of chronic injuries. In this case, the consultations demand high therapeutic acuity and technical specificity, determinants for comfort, confidence, decrease of pain, case resolution and greater clinical adhesion.

In the present study, most of the injuries were diabetic foot and neuropathic etiology, followed by vascular ones, compatible with other findings. Wounds due to diabetes are caused by late diagnosis, poor metabolic control, and loss of protective plantar sensation. In a follow-up study of 185 people with diabetes who underwent intensive follow-up and education on the prevention of complications for two years, there was a significant reduction in the incidence of wounds higher healing rates, and fewer surgical interventions.\(^{(25)}\)

Health recovery can be achieved if there is a service network with professionals engaged, especially with primary care as the gateway to the system with a focus on health promotion and protection.\(^{(25)}\)

Presence of venous injuries that are of long duration and high rates of relapse, have affected more women and have average time greater than four years. Studies estimate that approximately 1.5 to 3% of the adult population worldwide have active venous injuries, which leads to loss of quality of life, pain, psychosocial suffering and limitation in work.\(^{(27,28)}\) The gold standard of venous ulcer treatment is compressive therapy, but a lifestyle orientation program is critical. A recent randomized study pointed to the effectiveness of a guidance program for the healing of venous ulcers. This study emphasized the importance of health professionals qualified to perform compressive therapy and guide daily living habits and continuous monitoring, actions also recommended in the nursing consultation.\(^{(29)}\)

Regarding the health care network and the presence of the social support network, this study showed that most of users depend on SUS, referred by primary care and outpatient specialties. Among those affected, most needed support from other community members on commuting to receive care. These results allowed elaborating, following up and organizing users flow in health care networks, between University Hospital and primary care.
They also pointed out protocols for home care and follow-up at the health unit, ensuring referral and counter-referral.\(^{(30,31)}\)

Epidemiological studies in the United Kingdom show that between 2 and 3% of the population with chronic wounds live in poor districts without access to information, consumer goods and therapeutic means. These characteristics significantly alter the quality of life of those affected in the community, mainly due to the presence of pain, absence at work and the precariousness of activities of daily living.\(^{(32,33)}\) In the treatment of users with chronic wounds the causal multifactorial must be observed and investigated. Recognition of nursing practices in Collective Health that achieve situations of improvement of the well-being and clinical adhesion has been constituted as a goal of the evaluation indicators in the area.

Due to the homogeneity of the population, no meaningful differences were observed for social, demographic and clinical variables regarding the presence or absence of healing.

Nursing care has made it possible to point out that nursing consultation is an activity with an important educational function, which may enable health promotion.\(^{(34)}\) Such care encourages people to become protagonists of their stories and empower them to search for innovative solutions for improving living conditions and validating the actions of the service. Health education promoted by the team during nursing consultations favors and directs the action in the prevention and treatment of chronic diseases. It promotes the reduction of complications and deserves to be experienced in the teaching-learning process of the training of nurses and continue to be practiced in health care.

The results of this study, added to the historical rescue of the CAENF creation allowed to glimpse the nursing performance and evaluate the care. They contributed to the training of numerous primary care professionals, in which culminated in the implementation of the Protocolo Proibido Feridas (Prohibited Wounds Protocol), supporting nursing actions in the area of the Municipal Health Department of São Paulo through the promulgation of Law 14.984/2009, which guarantees this right to the population.\(^{(35)}\)

Rescuing the historicity of nursing actions in the care for people with chronic ulcers allows reflections not only in the field of daily practice, but in the politics, education, and research and extension, in order to increase visibility of the performance of this professional and ensure a comprehensive care to the individual, and professional valorization.

The study limitations are related to the method chosen, by the use of secondary data from the systematization records of non-computerized nursing care. Data verification was often not confirmed due to fluctuation of the users’ location, and there was no control group for the comparison of possible association data. Although the methodological design does not allow generalizations, results aim to present experiences of nurses and nursing students in health care from the effective implementation of comprehensiveness to hundreds of people who had triggered the chance to have their limbs amputated.

**Conclusion**

This research showed that people treated were mostly female, with a mean age of 61 years, white, retired, with low education level and income, and Public System of Health patients. They had wounds of varied etiologies, of long duration and with previous indications that would lead them to physical deficiencies. Clinical outcomes demonstrated that most of the people followed in nursing consultation achieved complete healing. Nursing consultation is a strategy that deserves to be better elucidated as an effective care practice that can contribute to advanced wound care.

**Acknowledgments**

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Collaborations

Trivellato MLM, Kolchraiber FC, Frederico GA, Morales DC, Silva ACM, and Gamba MA declare that they contributed to the design of the study; analysis and interpretation of data; writing of the article, and approval of the final version to be published.

References


Validation of a safety assessment instrument for chronic renal patients on hemodialysis

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Abstract
Objective: To construct and validate a safety assessment instrument for chronic renal patients on hemodialysis.
Methods: Methodological study that comprised the instrument's construction and content validation by 14 experts, and evaluation of its understanding by nine nurses. Construction was based on the health legislation on hemodialysis and international patient safety standards. For analysis of the experts' agreement, intraclass correlation coefficient, content validity index, and binomial test were calculated.
Results: The items of the Likert-type scale were distributed into the six international patient safety goals, with 0.98 intraclass correlation coefficient. The final instrument had 57 items with a 0.96 content validity index, and binomial test ≥ 0.86.
Conclusion: The assessment instrument was considered understandable, relevant, and compatible with safety standards, showing content validity and compatibility to assess patient safety in hemodialysis treatment environments.

Keywords
Patient safety; Hemodialysis units, hospital; Nephrology nursing; Nursing assessment; Renal insufficiency, chronic

Descritores
Segurança do paciente; Unidades hospitalares de hemodiálise; Enfermagem em nefrologia; Avaliação em enfermagem; Insuficiência renal crônica

Resumo
Objetivo: Construir e validar um instrumento de avaliação da segurança de pacientes renais crônicos em hemodiálise. 
Métodos: Estudo metodológico que abrangeu elaboração do instrumento e validação de conteúdo por 14 juízes; e avaliação da compreensão, por nove enfermeiros. A construção foi fundamentada na legislação sanitária sobre hemodiálise e padrões internacionais de segurança de pacientes. Para análise da concordância dos juízes, foi calculado o Coeficiente de Correlação Intraclass, Índice de Validade de Conteúdo e teste binomial. 
Resultados: Os itens do instrumento do tipo Likert foram distribuídos nas seis metas internacionais de segurança de pacientes, obtiveram Coeficiente de Correlação Intraclass de 0,98. O instrumento final ficou com 57 itens com Índice de Validade de Conteúdo de 0,96 e teste binomial ≥0,86. 
Conclusão: O instrumento foi considerado compreensível, relevante e condizente com os padrões de segurança, tendo demonstrado validade de conteúdo e compatibilidade para avaliar a segurança do paciente em ambientes de tratamento hemodialítico.

Descradores
Seguridad del paciente; Unidades de hemodiálisis en hospital; Enfermería en nefrología; Evaluación en enfermería; Insuficiencia renal crónica

Resumen
Objetivo: Construir y validar un instrumento de evaluación de la seguridad de pacientes renales crónicos en hemodiálisis.
Métodos: Estudio metodológico incluyendo elaboración del instrumento y validación de contenido por 14 expertos; y evaluación de comprensión por nueve enfermeros. Construcción fundamentada en legislación sanitaria sobre hemodiálisis y en estándares internacionales de seguridad de pacientes. Concordancia de expertos calculada por Coeficiente de Correlación Intraclass, Índice de Validad de Contenido y test binomial. 
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Conclusión: El instrumento fue considerado comprensible, relevante y condeciente con los estándares de seguridad, habiendo demostrado validez de contenido y compatibilidad para evaluar la seguridad del paciente en ámbitos de tratamiento hemodialítico.

How to cite:

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Conclusión: El instrumento fue considerado comprensible, relevante y condeciente con los estándares de seguridad, habiendo demostrado validez de contenido y compatibilidad para evaluar la seguridad del paciente en ámbitos de tratamiento hemodialítico.

How to cite:
Introduction

Chronic renal patients on hemodialysis are vulnerable to a greater occurrence of adverse events (AE) due to the presence of comorbidities associated with kidney failure, recurrent use of invasive devices, and polypharmacy.\(^1\)

In addition, some factors inherent to the hemodialysis unit may facilitate the occurrence of events: continuous infusion of high monitoring medications, long periods of routine and repetitive activities, continuous handling of patients by different professionals, infections, problems related to vascular accesses, and poor communication in urgent decisions associated with treatments.\(^1,2\)

1. One study carried out in Scotland estimated that, of a total of 1551 deaths of patients on hemodialysis, 2.1% were due to complications such as hemorrhage by vascular accesses and falls, 9.6% due to infections associated with health care, and 9.3% due to failures or vascular access infections.\(^1\) However, one study carried out in Brazil evaluated 117 medical records of patients on hemodialysis and showed a prevalence of 80.3% of AE.\(^3\)

2. One strategy to improve patient safety culture in dialysis units is the development of specific and validated instruments able to identify the safety level in processes associated with the care provided in this setting, which may point out non-compliance gaps with safety standards.\(^4,5\)

Therefore, the objective of the present study was to construct and validate a safety assessment tool for chronic renal patients on hemodialysis.

Methods

A methodological study based on Pasquali’s psychometric theory\(^6\) was carried out in three phases: instrument’s construction, content validation, and evaluation of understanding by the target population, from January to December 2015.

The instrument’s construction was carried out based on literature review in the portal of dissertations and theses of the CAPES, in the Scientific Electronic Library Online (SciELO), Medical Literature Analysis and Retrieval System Online (MEDLINE) via Pubmed (Public/Publish Medline), Scopus, and Literature in the Health Sciences in Latin American and the Caribbean (LILACS) databases and libraries.

Other theoretical foundations were considered, as follows: Accreditation standards of the Joint Commission International for certification of clinical care programs; resolutions no. 154/2004 and 11/2014 of the Brazilian National Health Surveillance Agency (ANVISA, as per its acronym in Portuguese); and Patient Safety National Program no. 529/2013,\(^7-10\)

The construction’s stage of the safety assessment instrument for chronic renal patients on hemodialysis (IASPRCH, as per its acronym in Portuguese) occurred from January to April 2015, and initially consisted of 62 items distributed into the six international patient safety goals.

In order to achieve the number of experts recommended by Pasquali\(^6\) (six to 20), a higher number of experts were invited, considering that some could not respond or would refuse the invitation. They were selected through a search in resumes available in the Lattes Platform. The following inclusion criteria were considered: having experience in at least one of the thematic areas of the instrument (patient safety or hemodialysis) and validation of instruments.

After the search, 41 eligible experts were chosen. These received an invitation letter by email and had up to 20 days to return the instrument, in addition to an informed consent form (ICF) with instructions to carry out analysis and evaluation.

The instrument to be filled in for validation was constructed in Google Docs with initial information about the characteristics of the participants and items of the instrument with dichotomous questions about clarity, understanding, relevance, and if the item was associated with the safety of patients on hemodialysis. Each item had a space where experts could provide suggestions.

Of the 41 experts invited, 20 did not answer the email; two did not agree to participate in the study; and five did not answer within the estimated
time. In the end, 14 experts carried out the content validation.

After the expert validation, the IASPRCH went through analysis of the items’ understanding, which consisted of the evaluation of intelligibility carried out with the target population.(5) Then, nephrologist nurses of three hemodialysis clinics in Fortaleza, capital city of the state of Ceará, were selected by convenience, totaling 12 professionals.

Nurses were approached in person in the above-mentioned clinics, received an invitation letter, the ICF, and instruments for IASPRCH evaluation. The delivery time agreed was 20 days. The instrument contained questions regarding socio-professional characteristics, followed by dichotomous questions with regard to each item’s understanding, with a space for suggestions.

For analysis of experts’ agreement, in the content validation, the intraclass correlation coefficient (ICC) was calculated for each dimension of the instrument. The ICC is considered excellent when higher or equal to 0.75.(11)

For verification of nephrologist nurses’ agreement, in the evaluation by the target population, the content validity index (CVI) was calculated, and the items with agreement equal or higher than 80% were considered valid.(6)

The binomial test was used to compare whether the proportion of nurses who agreed was statistically equal or higher than 0.80. It is worth mentioning that, for the tests carried out, a significance level of 5% and confidence interval of 95% were considered.

The present study was approved by the research ethics committee of the State University of Ceará, under protocol no. 984.409.

Results

The mean age of the experts who validated the instrument was 41±9 years, mean time of experience in hemodialysis was 10±8 years, and 13 (92.8%) were researchers in the patient safety or hemodialysis area. The overall ICC of the instrument was 0.98, with p <0.001, and the coefficient of each dimension is presented in table 1.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>ICC</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Patient identification</td>
<td>0.85</td>
<td>0.71 – 0.94</td>
</tr>
<tr>
<td>2- Effective communication</td>
<td>0.80</td>
<td>0.62 – 0.92</td>
</tr>
<tr>
<td>3- Administration of potentially dangerous medications</td>
<td>0.91</td>
<td>0.83 – 0.96</td>
</tr>
<tr>
<td>4- Proper procedure and intervention site</td>
<td>0.94</td>
<td>0.90 – 0.98</td>
</tr>
<tr>
<td>5- Risk of infections</td>
<td>0.94</td>
<td>0.89 – 0.97</td>
</tr>
<tr>
<td>6- Risk of injuries due to falls</td>
<td>0.95</td>
<td>0.90 – 0.98</td>
</tr>
</tbody>
</table>

The experts suggested an alteration in the dimension “correct identification”, with the replacement of terms. However, in the dimension “effective communication”, the item “receiving any type of prescription by verbal order” was modified, because experts affirmed that it would violate patient safety principles.

The designation of dimension 3 “administration of high monitoring medication” was replaced by “administration of potentially dangerous medications”. In the dimension “proper procedures and intervention site”, the term “surgical” was added to some items, specifying the type of procedure.

In the dimension “risk of infections”, the need for Anti-HBs test “for nursing technicians” and specification of “positive serology for hepatitis C and human immunodeficiency virus (HIV)” were added. In the dimension “risk of falls”, an item regarding the distance between armchairs/beds was modified.

At last, in the third stage of the study, which was the evaluation of the IASPRCH items’ understanding by nine hemodialysis nurses, these presented a mean age of 39±11 years and mean length of professional experience in the area of 10±9 years, and most (88.9%) were specialists in nephrology nursing.

In the evaluation of understanding, the total CVI of the instrument with 62 items was 0.94. However, 18 items were evaluated as of difficult understanding. Of these, five items presented a CVI and binomial test lower than recommended, ranging from 0.66 (p=0.261) to 0.77 (p=0.563), thus being removed. After removal of the items, the instrument had 57 items, with a total CVI of 0.96 (Table 2).

The IASPRCH was completed with 57 items distributed into the following dimensions regarding the six national patient safety goals: patient iden-
Validation of a safety assessment instrument for chronic renal patients on hemodialysis

Table 2. Binomial test for the items of the dimensions identification, effective communication, and potentially dangerous medications

<table>
<thead>
<tr>
<th>Items</th>
<th>n(%)*</th>
<th>p-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Legible identification of the dialyzer and lines with patient name, serology, and first date of use.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>2. Identification of the hemodialysis session control sheet with name, individuals taxpayers’ register, date of birth, patient identification at the clinic, serologies, and HD session data.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>3. Supervision carried out by nurses together with nursing technicians before the beginning of each session, checking the correct identification of the hemodialysis control sheet, dialyzer, and lines. In addition to the undertaking of devices’ pre- and post-test before each session for system’s sterilization assurance.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>4. Identification of blood collection bottles with type of test, patient name, and other identification methods, such as individuals taxpayers’ register and date of birth.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>5. Use of labels for record of medication dilation with dose, date, dilution time, name of the professional responsible for dilation, and patient name.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>6. Storage in washable compartments of the hemodialysis system with legible identification, patient full name, date of birth, differentiation by shifts, and serologies.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>7. Checking of any medication before administration applying the nine certainty technique: right patient, right medication, right dose, right time, right route of administration, right documentation, right action, right way, and right response.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>8. Full record with legible letter of test results received and signature of the professional who received information.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>9. Record in the patient’s medical file with all information regarding clinical evolution and care provided. The same must contain the signing of each nursing professional and multidisciplinary team.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>10. Presence of a nursing station close to the hemodialysis room with easy access for professionals, which allows seeing all patients, with availability of the material required for hemodialysis.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>11. Availability of all measurement values of the internal volume of the dialyzer’s fibers (prime) obtained during its processing. They must be recorded, dated, separated by shifts, and signed by the person who undertook the process for eventual consultation from patients and health authority, and kept in the patient’s medical record.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>12. Availability of technical reports of analyses of the treatment and distribution system of water for hemodialysis, for technicians and health inspection, in accordance with the frequency required by the current legislation.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>13. Supervision of potentially dangerous medication administration carried out by nursing technicians and nurses (epinephrine, norepinephrine, propofol, dipryne, propranolol, metoprolol, lidocaine, amiodarone, heparin, insulin, oral hypoglycemic agents, intravenous inotropic agents, neuromuscular blockers, intravenous moderate sedatives, acidic and basic solutions, injectable sterile water, injectable potassium phosphate, calcium gluconate, hypertonic glucose).</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>14. Storage of potentially dangerous medications in exclusive and appropriate place.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>15. Visible and legible identification of the storage place for potentially dangerous medications.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>16. Use of devices that cause barriers in the occurrence of errors with the administration of potentially dangerous medications, such as bar codes.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>17. Publication of a list of all medications, especially of those potentially dangerous, used in the institution.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>18. Incorporation of security warning in computer systems of dispensation and prescription of potentially dangerous medications.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>19. Establishment and publication of maximum doses of potentially dangerous medications to be used in the unit.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>20. Standardization in the preparation and administration of potentially dangerous medications, thus preventing errors.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>21. Dispensation of potentially dangerous medications in containers for each patient and separated from other medications.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>22. Appropriate storage of acidic and basic solutions for hemodialysis out of direct sunlight, in good conditions of ventilation and environmental hygiene, according to manufacturer’s recommendations and expiration date control.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*n – Percentage agreement; ** p – Binomial test

Table 3. Binomial test for the items of the dimensions proper procedures and intervention site, risk of infections, and risk of injuries due to falls

<table>
<thead>
<tr>
<th>Items</th>
<th>n(%)*</th>
<th>p-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Check of the correct puncture site and fremitus before puncturing the fistula.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>24. Check of the dressing’s look, ostium, and catheter flow before connecting patients to the hemodialysis device.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>25. Check of all tests (TAP ‡, TTPA§, hemogram) required for the undertaking of the surgical procedure, carried out by nurses.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>26. Conducting of the time-out – All professionals of the team verbally confirm names and professions, patient identification, site or procedure to be carried out right before the beginning of the procedure.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>27. Antisepsis of the procedure’s correct site.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>28. Patient guiding regarding critical steps of the procedure, its estimated duration, and possible complications.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>29. Patient questioning, before the procedure, regarding the presence of allergies and use of anticoagulants.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>30. Check of the informed consent form signed by the patient or accompanier before the beginning of the procedure.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>31. Prophylactic antibiotic administration after procedure.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>32. Hand hygiene of the nursing team before and after each procedure.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>33. Change of gloves at each new procedure (such as dressings, device handling, and hemodialysis system) by the nursing team.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>34. Undertaking of dressings with aseptic technique by nurses.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>35. Disinfection and cleaning of the device and surfaces that come into contact with patients at each session.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>36. Allocation of nursing technicians, with anti-HBs° reagent, exclusive for the care of patients with positive serology for hepatitis B, C, and HIV¶ during the whole hemodialysis session, thus preventing cross-infection.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>37. Exclusiveness of a nursing technician for new patients admitted to the institution with unknown serology.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>38. Processing of dialyzers with exhaust air system, specific benches for the cleaning stage, with a deep tank made of resistant material and suitable for cleaning and disinfection, supplied with treated water for hemodialysis with individualized depletion. In addition to specific benches for each sterilization stage of the dialyzer, also made of resistant material and suitable for cleaning and disinfection.</td>
<td>8(89.0)</td>
<td>0.86</td>
</tr>
<tr>
<td>39. Restriction on circulation and access of people to the dialyzer processing room.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>40. Monitoring and record of residual levels of sanitizing products used in the sterilization of dialyzers, before connecting patients.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>41. Use of disposable insulators in devices to measure blood and venous pressure.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>42. Continuous checking of the bacteriological quality of the water for hemodialysis and whenever pyrogenic manifestations, bacteremia, or suspicion of septicemia occur in patients.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
<tr>
<td>43. Biannual cleaning record of the drinking water reservoir.</td>
<td>9(100.0)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*n – Percentage agreement; ** p – Binomial test
tification (seven items); correct communication, procedure, and intervention site (nine items); risk of infections associated with health care (15 items); and risk of injuries due to falls (11 items).

Discussion

The present study presented the limitation of not having evaluated time stability by test-retest, nor the construct validity of the instrument, in addition to the lack of studies considering the safety of patients on hemodialysis, thus restricting the comparison of the results.

The content of the IASPRCH items and its division according to international and national patient safety goals may contribute to the development of protocols and public policies with a focus on risks inherent to the care of chronic renal patients on hemodialysis, in addition to serving as a basis for promotion of patient safety nuclei in hemodialysis clinics required by the Brazilian legislation.\(^{(10)}\)

The dimension “patient identification” was considered valid, with an emphasis on the use of at least two identification methods.\(^{(12)}\) One study only showed patient name and, sometimes, the prescription was checked before the beginning of the procedure, with no use of identification wristbands during hemodialysis.\(^{(13)}\)

However, one instrument with 17 items developed in Toronto, Canada, to standardize and strengthen safety culture in the hemodialysis unit, brought the importance of proper identification as an aspect to be dealt before connecting patients to hemodialysis devices.\(^{(4)}\)

“Effective communication” was the dimension that presented the lowest ICC and was considered one of the most fragile variables in healthcare services. One study carried out in a hemodialysis unit showed no participation of nephrologist nurses and physicians during the visit to patients who were on dialysis in the unit’s external areas, in addition to the lack of standardization when providing information regarding the general status and clinical condition of patients.\(^{(13)}\)

Corroborating one study, ineffective communication is one of the three main causes of a sentinel event.\(^{(14)}\) The negative repercussion of communication failure on the nursing team for the safety of patients on hemodialysis justifies the presence of this dimension in the instrument, so strategies are planned and carried out, in order to promote dealing with this issue.

The dimension “potentially dangerous medications” has ten items. Its presence in the instrument is justified by patients on dialysis requiring multi-drug complex regimes\(^{(2)}\), especially for being high-surveillance drugs, such as heparin, which has a high incidence of hemorrhagic complications.\(^{(15)}\)

Institutions should develop protocols so places where potentially dangerous medications are stored or handled may be provided with a list of all medications’ names and correct doses, as well as containers easily identified and marked for an easy and safe access in clinical practice.
The dimension “proper procedures and intervention site” was considered valid, where its items approached the importance of time-out, which consists of a pause before the beginning of the procedure involving the whole team and allowing that all unanswered or confused questions are solved.\(^{(12)}\)

The dimension “risk of infections” was the longest of the instrument (15 items) and all its items were considered valid and understandable. Risk of infection is among the main causes of death and hospitalization in patients on dialysis.\(^{(16)}\) In one study based on the record of the total number of patients on dialysis in Scotland, infections associated with health contributed to 9.6% of deaths.\(^{(1)}\) The following two areas were listed as of specific risk and deserve attention: hand hygiene and care with central venous catheters.\(^{(17)}\)

The dimension “risk of injury due to falls” with 11 items presented the highest ICC, a fact justified by recommendations that the institution under study must establish a program to reduce the risk of falls, based on appropriate policies and procedures.\(^{(12)}\) Accidental falls are common among the hemodialysis population, and this high rate is attributed to a combination of factors such as aging, renal disease morbidity, and risks associated with the treatment. In this respect, studies point out a 47% rate of episodes of falls.\(^{(18)}\) These facts support its importance in the instrument, so each institution is able to record and identify its main causes of falls and, from then on, carry out interventions.

In general, the items of the instrument were considered compelling by researchers, with an index classified as excellent. Regarding the relevance criterion and association with patient safety, they were classified with an excellent index of agreement, which corroborates the results of one study that validated an instrument on patient culture and safety and that also had its items considered relevant.\(^{(19)}\)

**Conclusion**

The safety assessment instrument for chronic renal patients on hemodialysis (IASPRCH) was constructed and validated regarding its content, and was considered excellent and compatible with patient safety standards by experts. In addition, it was evaluated as understandable by nephrologist nurses.

**Acknowledgments**

To the experts of this study.

**Collaborations**

Aguiar LL, Guedes MVCG, Almeida PC, and Oliveira RM collaborated in the stages of conception, analysis and interpretation of data, writing of the article, relevant critical review of the intellectual content, and final approval of the version to be published. Galindo Neto NM, Melo GAA, and Joselany Áfio Caetano contributed to the analysis and interpretation of data, writing of the article, relevant critical review of the intellectual content, and final approval of the version to be published.

**References**


Telephone counseling: identification of symptoms in patients with lymphoma undergoing antineoplastic chemotherapy

Aconselhamento telefônico: identificação de sintomas em pacientes com linfoma em quimioterapia antineoplásica

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Maria Meimei Brevideeli²
Otávio Baiocchi³
Edvane Birelo Lopes De Domenico⁴

Abstract

Objective: To identify through telephone counselling the signs and symptoms presented by patients with Hodgkin’s Lymphoma undergoing chemotherapy with the protocol composed by doxorubicin, bleomycin, vincristine and dacarbazine (ABVD) and to compare the scores of the signs and symptoms presented in the cycles of the protocol.

Methods: Descriptive, prospective, quantitative study. Seven patients received telephone counseling in 24 scheduled and unscheduled calls, corresponding to 6 ABVD chemotherapy cycles. The MD Anderson Symptom Inventory and the Common Terminology Criteria for Adverse Events were used for scoring the symptoms, along with a conduct protocol. A descriptive and analytical analysis was conducted.

Results: Two hundred and eighty-six telephone calls generated 1,870 symptomatic complaints. In scheduled calls, the most prevalent complaints were fatigue, distress, lack of appetite, vomiting and nausea. As for the interference in daily life activities, the items related to general activities, work, difficulty walking, and mood changes were reported more frequently. In unscheduled calls, lack of appetite and irregular menstruation were the most recurring complaints. The analysis of the progression of symptoms showed an increase in nausea and vomiting (p=0.02), decrease in fatigue and shortness of breath (p=0.02), improvement in sleep (p=0.02) and decrease of stress (p=0.02).

Conclusion: Fatigue, nausea, vomiting and alterations in work activities were frequently reported. There was progression of nausea and vomiting but regression of fatigue and stress. Telephone consultation allowed a rapid communication and management of an expressive number of symptoms.

Keywords

Oncological nursing; Distance counseling; Health education; Hodgkin’s disease; Lymphoma; Drug therapy; Antineoplastic agents

Descritores

Enfermagem oncológica; Aconselhamento à distância; Educação em saúde; Doença de Hodgkin; Linfoma; Terapia farmacológica; Antineoplásicos

Resumo

Objetivo: Identificar os sinais e sintomas apresentados por pacientes com Linfoma de Hodgkin submetidos ao protocolo quimioterápico composto por Doxorubicina, Bleomicina, Vincristina e Dacarbazina (ABVD) por meio de aconselhamento telefônico e comparar os escores de graduação dos sinais e sintomas apresentados nos ciclos do protocolo.

Métodos: Descriptivo, prospectivo, quantitativo. Sete pacientes receberam aconselhamento telefônico, em 24 tempos de chamadas programadas e não programadas, correspondentes a 6 ciclos de quimioterapia com protocolo ABVD. Utilizou-se o Inventário de Sintomas do M.D Anderson e o Critério Comum de Terminologia para Eventos Adversos, para a graduação dos sintomas e um protocolo de condutas. Realizou-se análise descritiva e analítica.

Resultados: Duzentas e oitenta e seis chamadas telefônicas geraram 1.870 queixas sintomáticas. Nas chamadas programadas, as queixas com maior prevalência foram fadiga, preocupações, falta de apetite, vômitos e náuseas. Quanto à interferência nas atividades de vida diária, os itens relacionados a atividades em geral, no trabalho e dificuldade para caminhar, além de alterações no humor foram relatados em maior frequência. Nas chamadas não programadas, a falta de apetite e desregulação menstrual foram as queixas mais recorrentes. Na análise da progressão dos sintomas, observou-se aumento de náuseas e vômitos (p=0.02), diminuição da fadiga e falta de ar (p=0.03), melhora do sono (p=0.02) e diminuição da estresse (p=0.02).

Conclusão: A fadiga, náuseas, vômito e alteração nas atividades de trabalho foram relatados frequentemente. Houve progressão de náuseas e vômitos, mas regressão da fadiga e do estresse. O aconselhamento telefônico permitiu a comunicação e o manejo rápido de um número expressivo de sintomas.

Descritores

Enfermagem oncológica; Aconselhamento à distância; Educação em saúde; Doença de Hodgkin; Linfoma; Terapia farmacológica; Antineoplásicos

Keywords

Oncological nursing; Distance counseling; Health education; Hodgkin’s disease; Lymphoma; Drug therapy; Antineoplastic agents

Resumen

Objetivo: Identificar los signos y síntomas presentados por pacientes con Linfoma de Hodgkin sometidos al protocolo quimioterápico compuesto por Doxorrubicina, Bleomicina, Vinblastina y Dacarbazina (ABVD) mediante consulta telefónica y comparar los puntajes de graduación de los signos y síntomas presentados en los ciclos del protocolo.

Métodos: Descriptivo, prospectivo, cuantitativo. Siete pacientes recibieron asesoramiento telefónico, en 24 tempos de llamadas programadas y no programadas, correspondientes a 6 ciclos de quimioterapia con protocolo ABVD. Se utilizó el Inventario de Síntomas de M. D. Anderson y el Criterio de Terminología Común para Efectos Adversos, para la puntuación de los síntomas, y un protocolo de conductas. Se realizó análisis descriptivo y analítico.

Resultados: Doscientas ochenta y seis llamadas telefónicas determinaron 1.870 quejas sintomáticas. En las llamadas programadas, las quejas más prevalentes fueron: fatiga, preocupaciones, falta de apetito, vómitos y náuseas. Respecto a interferencia en actividades cotidianas, los ítems relacionados con actividad en general, laboral y dificultad para caminar, además de cambios del humor, fueron informados con mayor frecuencia. En las llamadas no programadas, la falta de apetito y irregularidad menstrual resultaron las quejas más habituales. En el análisis de progresión de los síntomas se observó aumento de náuseas y vómitos (p=0.02), disminución de fatiga y falta de aire (p=0.03), mejora del sueño (p=0.02) y disminución del estrés (p=0.02).

Conclusión: Hubo informe frecuente de fatiga, náuseas, vómitos y cambios en actividades laborales. Existió progresión de náuseas y vómitos, y regresión de fatiga y estrés. La consulta telefónica permitió comunicación y rápido manejo de una expresiva cantidad de síntomas.
Hodgkin’s lymphoma (HL) is a hematologic malignant neoplasm with a global prevalence of 0.6% and a national rate of 0.5% of cases per 100,000 inhabitants. Despite its relatively low incidence, HL represents 15% of all cancers in young adults (15-40 years old). Fortunately, the mortality rate was reduced by more than 60% since the early 1970s, due to the advances in antineoplastic treatment. This raised progression-free survival to 85.7%, regardless of the stage of the disease. The high success rate is also related to effective medication adherence.

There has been an increase in the use of antineoplastic chemotherapy (AC) and new cell targeted drugs, which specifically fight cancerous cells, have been included in the protocols. However, in Brazil, the new drugs are not authorized for first-line treatment in the public healthcare network (Unified Health System) and the chemotherapy protocol is composed of the drugs doxorubicin, bleomycin, vinblastine and dacarbazine (ABVD chemotherapy), administered intravenously on day one (D1) and day fifteen (D15), in a cycle that is repeated 4 to 6 times.

These are systemic cytotoxic drugs, which, despite their excellent remission outcomes, also affect several systems, such as the hematopoietic, the integumentary, the gastrointestinal and the cardiac systems. Some toxicities are frequent and are associated to worst therapeutic adherence, requiring constant evaluation and monitoring.

The ABVD protocol is administered in an outpatient regimen and the patients are advised to keep their activities of daily living and their study and/ or work activities as close as possible to normality. The education provided to the patients must prepare them for therapeutic adherence (cytotoxic chemotherapy, other daily medications, exams and medical appointments) and for monitoring and managing signs and symptoms. Adequate adherence to the therapeutic regimen is a key factor for achieving disease remission. Delays or dose reduction of ABVD may compromise dose intensity and the achievement of disease remission, as the Reed-Sternberg cells are chemosensitive but also genetically unstable with a tendency to develop early secondary resistance.

In this scenario, an effective communication between patient and healthcare team is essential to identify risk situations, manage signs and symptoms, provide emotional support and guarantee adherence to the therapeutic protocol. Among the possibilities, nurse-run telephone consultations are an affordable and economically viable alternative, considering the expansion of mobile phone coverage among citizens of large metropolises and the already proven positive outcomes in the detection and early management of signs and symptoms, which may lead to reduction or shortening of hospital admissions.

The counseling provided in the nursing consultation is one of the activities of the nurse. It consists of a dialogic care aimed at helping a patient to resolve a problem. The nurse must have knowledge and skills to provide an accurate diagnosis and support the patient and the family in solving the problem, as well as the ability to establish a sensible and effective communication. To increase efficiency and effectiveness, the telephone consultation requires a protocol supported by theoretical references and scientific evidence, as well as training to properly conduct it, since it is a distant relation, which hinders objectivity and effective communication and limits the use of all senses for an accurate evaluation.

This study is justified by the need to increase the production of knowledge about the frequency and behavior of the signs and symptoms related to the ABVD chemotherapy protocol in the Brazilian population, supporting the planning and implementation of nursing activities that can generate greater control of the therapeutic regimen. It is important to associate the nurse-run telephone consultations with the monitoring of signs and symptoms, considering the multiplicity and severity of these symptoms and the possibility of therapeutic failure, characterized by non-adherence to treatment, evasion, delays or interruptions due to worsening of clinical status.

Thus, the questions that guided the present study were: Which signs and symptoms are pres-
ent in patients with HL undergoing ABVD chemotherapy and receiving telephone consultations? What are the intensities and oscillations of the signs and symptoms in each chemotherapy cycle? The objectives were: to identify through telephone consultations the signs and symptoms presented by patients with Hodgkin's Lymphoma undergoing ABVD chemotherapy and to compare severity scores of the signs and symptoms presented in the cycles of the protocol.

**Methods**

**Design, setting, population and ethical procedure of the study**

Descriptive, prospective, quantitative study. The study was conducted at the Lymphoma Outpatient Clinic of the Hospital São Paulo, Federal University of São Paulo, São Paulo State, Brazil. The non-probabilistic sample was composed by consecutive patients, according to the inclusion criteria: diagnosis of HL, being over 18 years old and predicted to start and end the ABVD chemotherapy regimen between November 2015 and February 2017. The exclusion criteria were: patients with previous chemotherapy treatment, in any regimen; not having access to a landline or mobile telephone.

The project was submitted and approved by the Research Ethics Committee of UNIFESP, and the data was collected after signing of the consent term.

**Study protocol**

Patients received the telephone number, provided their own and were oriented about the calls they would receive on D-1, D2, D14 and D16 of each cycle. The calls made on D-1 and D14 were aimed at reminding the patient about the chemotherapy session on the next day and evaluating anticipatory emesis. The calls made on D2 and D16, which were the scheduled calls, were aimed at evaluating the signs and symptoms presented. In cases where clinical assistance was necessary, other calls were made on the same day and subsequent days, which were the non-scheduled calls. The telephone counselling was conducted by the nurses in the study, both of them specialists in oncology nursing.

Three instruments were used for data collection: a) A socio-demographic and clinical questionnaire, with: age, gender, race, family income, level of education, work situation, oncologic history, cancer staging; b) An instrument to register the telephone calls, containing date, reports of signs and symptoms, interventions, outcomes; c) Guidelines for the standardization of interventions, according to the Oncology Nursing Society’s guidelines, available in Putting Evidence into Practice (PEP);(11) d) A symptom grading scale. The MD Anderson Symptom Inventory (MDASI-core) quantifies the severity of symptoms, including signs with the same nomenclature, in an analogic scale from 0 (not present) to 10 (worst possible perception). The MDASI-core, originally in English, was developed to facilitate the evaluation of signs and symptoms presented by oncologic patients, and its version in Portuguese has been validated.(12)

The MDASI-core has two parts: severity of symptoms, with 13 items, and symptoms that interfere in activities of daily living (ADLs), with 6 items. Given the possibility of patients reporting signs and symptoms not present in the MDASI-core, we also used the Common Terminology Criteria for Adverse Events CTCAE v4.0, developed by the National Cancer Institute (NCI, USA), which grades the symptoms from 1 (mild symptom) to 5 (death).(13) The design of the study is outlined in figure 1.

**Data analysis**

The relative proportions of socio-demographic and clinical variables were calculated to characterize the sample. Means were calculated to describe the intensity of the variation of symptoms in the different intervals between telephone calls (D-1, D2, D14 e D16). The non-parametric Wilcoxon test was used to compare the means of the symptoms before and after treatment (D-1 versus D2 and D14 versus D16) and, consequently, identify changes in the clinical status. Values of $p \leq 0.05$ were considered statistically significant. All statistical proce-
dures were conducted with the software Statistical Package for the Social Sciences (SPSS for Windows) version 19.0.

Results

Data from the present investigation were generated by 286 telephone calls with seven patients diagnosed with HL and submitted to 6 cycles of ABVD. Most of the participants were female (85.7%), white (57.1%), had 12 or more years of education, an average monthly family income of 1.7 minimum wages (approximately US $ 297/month), mean age of 29.8 years (SD 7.33), and a family history of oncology. Clinically, 71.5% of the patients were in an advanced stage and most had B symptoms and bulky mass, according to Ann Arbor staging with Cotswolds modifications.(14) Absolute and percentage data are shown in table 1.

In the pre- and post-ABVD periods (D-1 and D16), 286 telephone calls were registered, of which 168 were scheduled and 118 were unscheduled, i.e. were made by the nurse (41.5%) for additional clinical evaluation or by the patients themselves (69; 58.5%).

All patients complied with the proposed chemotherapy regimen. There were no evasions nor delays in the days established for D1 or D15 in any of the cycles, from C1 to C6. In the 286 telephone calls, referral to the emergency room (ER) occurred 3 times, by evaluation of possible infection (n: 1) and metrorrhagia (n: 2). Throughout the patients’ telephone follow-up period, 1,870 symptomatic manifestations were reported. In the statistical analysis of the 19 signs/symptoms of the MDASI-core in 4 moments/cycles, 456 mean severities were calculated, and only the signs/symptoms with values higher than 5.0 were presented. During scheduled calls, the most prevalent complaints were fatigue, distress, lack of appetite, vomiting and nausea.

Regarding the interference of symptoms on ADLs, the highest items were general activity, work and walking, followed by relations with other people,
Telephone counseling: identification of symptoms in patients with lymphoma undergoing antineoplastic chemotherapy

Lack of appetite and pain
Lack of appetite was more present in the 4th cycle, when it reached the score of 8.86; between cycles, the mean was 5.29. There was a marked progression in the 4th cycle, in the period between before and after cytotoxic chemotherapy. These differences were statistically significant (p=0.02) (Figure 3).

Pain was reported by three patients, all with a bulky mediastinal mass. The maximum score reported was 7. Note that the incidence of pain is in cycle 1, with scores decreasing between D-1 and D16, until it reached zero (Figure 3).

Shortness of breath and fatigue
Shortness of breath was a constant complaint in the first and second cycles, with a mean of 5.7, decreas-
ing to 0 after the 2nd cycle (p = 0.02). The patients with bulky mass had the highest scores. Fatigue was the only symptom that was present before C1 and lasted until the last cycle. In the first cycle, the mean of the symptom was 8.58, and it had values higher than 6 until C6. Despite the high scores, there was improvement between C1 and C6 (P = 0.03) (Figure 4).

Figure 2. Nausea and Vomiting, according to MDASI-core, on D-1; D2; D2; D14 and D16, in 6 cycles of ABVD

Figure 3. Lack of appetite and pain according to the MDASI-core, on D-1; D2; D2; D14 and D16, in 6 cycles of ABVD
Distress and mood alterations
Complaints of distress oscillated, with a peak of 9.29 on C4. D16 from C6 was the only moment of the evaluation that all patients reported absence of distress. The linear logarithmic graph correlated C1 (D-1 with a mean of 5.3) and C6 (with a score of 0 on D16) and generated a statistically significant result (p=0.02). Mood alterations were more frequent on C4 and oscillated on the other cycles. On C2 and C5, both on D16, the scores were close to zero. The comparison between C1 and C2 showed a statistically significant difference (p=0.02) (Figure 5).

Alterations in work activities, including domestic work
General activities presented higher values since C1 (mean of 6.57 on D-1), which progressed during treatment, reaching a mean score of 9.0 (p=0.03) on D16 of C6. Note that on C4 there was a sudden increase from 7.71 to 9.43. Regarding alterations in work activities, including domestic work, since C1 the mean was higher than 6.71, and it was even higher on the subsequent cycles, reaching 10.0 on D16 of C6, with a 85.7% rate of abstention from work (Figure 6).

The symptoms reported by the patients for which the Common Terminology Criteria for Adverse Events (CTCAE v4.0)\(^{15}\) was used were presented in a descriptive way.

Irregular menstruation and sexual activity
The female participants were in reproductive age, and 83.4% of them presented interruption of the menstrual cycle after the second cycle of the ABVD protocol. One patient (16.6%) reported metrorrhagia and was immediately referred to the emergence unit (ER). Regarding sexual activity, 100% of the patients had doubts, such as: whether they could have sexual activity during treatment and if they could engage in sexual activity without a condom.
Mucositis

In the second and third months there were calls reporting mucositis in 20% of the sample, with scores between 1 and 2 (NCAE-CTC 4.0 Scale). Nursing interventions and dental follow-up occurred and the problem was solved after the 4th cycle.
Immediate vomiting – during ABVD administration

It was reported from the 1st to the 6th cycle in 30% of the sample, who had 3 to 5 episodes of vomiting during infusion, Score: 2 (NCAE-CTC 4.0 Scale).

Flu-Like syndrome

Due to the signs and symptoms reported, the patients were referred to the ER for differential diagnosis of infection, which was discarded.

Reaction in the intravenous site

Of the 7 patients, five (71.4%) started ABVD therapy in a peripheral vein. Chemical phlebitis represented 5.56% of all symptoms, categorized by CTCAE v4.0 as “injection site reaction” Score: 2. From C2-D16, 100% of patients were receiving ABVD via TI-CVC (totally implanted central venous catheter).

Discussion

HL is equally distributed between genders, despite the predominance of women in the present sample. This may be related to the favorable rates of therapeutic adherence, the verbalization of signs and symptoms and the propensity to seek help and follow guidelines, since there were no delays in the protocol nor evasions. A study has already shown that seeking care and adopting adaptive behaviors favorable to treatment are attitudes more common among women.16

The expressive number of symptomatic complaints during telephone consultations might be related to the advanced stage of the disease (stages III and IV), which also explains the high scores of several symptoms. Unfortunately, diagnoses at advanced stages of cancer are common in Brazil, which is a result of the lack of structure and process in oncologic care in the SUS. Another analytic perspective for the advanced and polysymptomatic disease is the low health literacy of the Brazilian population, which is related not only to the level of education, but also to the ability to adopt health protective behaviors and to identify symptoms related to cancer and to other chronic or not chronic diseases.17

Clinical treatment for cancer is known to produce several symptoms. The prevention and management of these symptoms are extremely important for maintaining the quality of life of the patients and for the continuity of the therapeutic regimen.9 A high emetogenic potential is observed in the composition of the ABVD protocol. In the present investigation this potential was present and elevated from C1 to C6, and it was the main factor for abstention from work during treatment, followed by the symptom of nausea/vomiting.

ABVD chemotherapy is classified, in specialized literature, as having a risk greater than 90% for nausea and vomiting. Regarding the management of nausea and vomiting, the guidelines of the American Society of Clinical Oncology – ASCO (USA) recommend the combination of four drugs, one of which is neurokinin 1 (NK1 - Aprepitant), which unfortunately is not available at the studied institution.18

Unbalanced nutrition is a risk among these patients due to the loss of appetite and persistent nausea and vomiting. According to the national consensus on oncology nutrition, protein-calorie malnutrition among cancer patients is related to the immunoinflammatory response that increases metabolism, generating a hypercatabolic state due to the acute trauma of the malignant neoplasia. Corroborating this, some patients complained of mucositis, which is considered one of the most common oral complications in cancer patients, resulting from the toxicity of many chemotherapies which can cause local and systemic infections, which should be early diagnosed and treated.9,19 It could be observed that, in general, gastrointestinal complaints remained frequent after chemotherapy, but had a progressive decrease until one day before the next session (D12 and D14).

The complaints of shortness of breath and pain were present in patients with bulky mediastinal mass, defined as tumor >10 cm. Both symptoms are associated with tumor growth capable of compressing intrathoracic structures. The chemosensitivity of the HL is the reason for disappearance of symptoms at the end of the second cycle.2,6
Fatigue was the only symptom persistent throughout the treatment. Studies have shown that it may continue to be a complaint among HL survivors for years, regardless of duration of the disease and time since the end of treatment. An accurate evaluation of the patient with fatigue during and after treatment is necessary for the identification of other complications that may aggravate the condition, such as pulmonary toxicity and cardiotoxicity, caused by the drugs bleomycin and dacarbazine, present in the protocol. Thus, up to several years after the end of treatment, continuous surveillance should be conducted, with evaluation of less specific symptoms such as weariness, fatigue and functional limitations in daily activities, along with medical follow-up examinations.

Flu-like syndrome complaints and severe menstrual alterations such as metrorrhagia were referred to a primary care unit for a differential evaluation of other diseases related to immunosuppression and thrombocytopenia. Early identification of risks and referral to specialized care were essential for an efficient outcome, without compromising the therapeutic regimen.

Sexual activity generated doubts among all patients of the study, and the questions occurred after the second cycle of chemotherapy. This can be related to the establishment of an affective bond with the nurse, demonstrating the lack of dialogue on this basic human need by the interdisciplinary team before the start of chemotherapy. The difficulties demonstrated by health professionals and patients in establishing an appropriate dialogue about sexuality in cancer care have been evidenced by studies, which emphasize the urgent need to adopt interventions capable of suppressing communication failures, which include telephone consultations.

As for the psychosocial symptoms, high scores were observed in C1 and C4, coinciding or not with aggravations of physical symptoms. The immediate acceptance to participate in the telephone consultations, the easiness to obtain answers during the application of the instruments and the number of unscheduled calls made by the patients showed their appreciation of the opportunity for dialogue with the nurse. In the current paradigm, patients are invited to participate actively in the decision-making process and must be supported to do so, finding ways to express concerns, fears and uncertainties arising from diagnosis and treatment, as well as receiving adequate care.

The limitations of the study are related to the reduced sample size, due to the low prevalence of the diagnosis compared to other oncological diseases. Another limitation is the restriction of the objectives of the study to the prevalence and severity of symptoms. The results of the present investigation indicated that patients were polysymptomatic during the period of chemotherapy for LH, using the ABVD protocol, and that several care demands can be properly guided by the nurse duly qualified to practice advanced nursing, demonstrating the possibility of expanding the research.

Conclusion

The most prevalent symptoms were fatigue, distress, lack of appetite, vomiting and nausea. It was possible to evaluate the oscillations of the severity of the symptoms during the 6 cycles of the ABVD protocol, and the symptoms that demonstrated statistically significant oscillations were: nausea and vomiting, when comparing symptoms of C1 to C6, one day before and one day after chemotherapy, and lack of appetite on C3 and C4. The interference of symptoms in activities of daily living were statistically significant in relation to distress and enjoyment of life, mainly compromised in periods of greater physical symptoms. The nurse-run telephone consultation was demonstrated to be an important strategy for an effective control of the therapeutic regimen, allowing an early identification and management of signs and symptoms, with actions concomitant with complaints.

Collaborations

Louzada KRS, Brevidelli MM, Baiocchi O and Domenico EBL contributed to the study design,
analysis and interpretation of data, article writing, critical review of the intellectual content and approval of the final version to be published.

References


Nurses’ autonomy in Primary Care: from collaborative practices to advanced practice

Autonomia da enfermeira na Atenção Primária: das práticas colaborativas à prática avançada

Autonomía de la enfermera en atención primaria: de las prácticas colaborativas a la práctica avanzada

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Abstract

Objective: To assess how Primary Health Care (PHC) nurses identify their professional autonomy in daily work and how this autonomy is perceived by other professionals of the multiprofessional team.

Methods: Exploratory, descriptive study in which the theoretical-methodological reference was dialectical hermeneutics anchored in the premises of the Sociology of Professions. Data were collected through semi-structured interviews with 27 nurses from the Family Health Strategy (FHS) and ten professionals from the Family Health Support Center (Portuguese acronym: NASF) in the city of São Paulo. The resulting empirical material underwent discourse analysis.

Results: The findings revealed the professional autonomy of PHC nurses is perceived in the following categories: the possible autonomy, the autonomy dictated by protocols and the subordination to medical work.

Conclusion: The study showed an expansion of the clinical scope of PHC nurses, and to a certain extent, it was closer to medical work. On the other hand, nurses are challenged to overcome such an approximation in the sense of interprofessional collaborative practice and advanced practice nursing.

Resumo

Objetivo: Verificar como enfermeiras da Atenção Primária à Saúde (APS) identificam sua autonomia profissional no cotidiano do trabalho e como essa autonomia é percebida por outros profissionais da equipe multiprofissional.

Métodos: Pesquisa exploratória, descritiva, cujo referencial teórico-metodológico foi a hermenêutica dialética, ancorada nas premissas da Sociologia das Profissões. Os dados foram coletados por meio de entrevistas semiestruturadas com 27 enfermeiras da Estratégia Saúde da Família (ESF) e 10 profissionais do Núcleo de Apoio à Saúde da Família (NASF), do município de São Paulo. O material empírico resultante foi submetido à análise de discurso.

Resultados: Os achados revelaram que a autonomia profissional da enfermeira da APS é percebida através das seguintes categorias: a autonomia possível, a autonomia ditada pelos protocolos e a subordinação ao trabalho médico.

Conclusão: O estudo revelou que houve a ampliação do escopo clínico da enfermeira da APS, a aproximando, em certa medida, do trabalho médico. No entanto, as enfermeiras são desafiadas a superar tal aproximação no sentido da prática colaborativa interprofissional e da prática avançada de enfermagem.

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Introduction

In the last decades, nurses’ professional identity has assumed new shapes in Brazil, especially since implementation of the Unified Health System (Portuguese acronym: SUS) in the late 1980s and the Family Health Strategy (FHS), in the following decade. Clinical actions of direct care to users were added to the administrative or managerial activities prevailing until then, which expanded the scope of nurses’ practice in Primary Health Care (PHC) and produced impacts on their professional practice.(1-4)

This is partly due to the rapid demographic and epidemiological changes currently taking place in the country that bring a triple disease burden, in which uncontrolled infectious and deficiency diseases coexist with increasing external causes and the hegemonic presence of chronic diseases.(3,5) In view of the complexity of the population’s health needs, PHC must implement effective forms of action by seeking the integration of knowledge and promoting collaborative interprofessional action in order to impact positively on health care.(6,7)

The need to expand the population’s access to qualified health professionals for working in PHC with quality, equity and completeness also offers possibilities for increasing competencies of the multiprofessional team, especially nurses’ autonomy.(8,9)

Autonomy is a component of professional practice and a prerequisite for higher professional satisfaction. It implies the freedom to make independent evidence-based clinical decisions, both in the specific field of the profession and in the context of multiprofessional work of health teams. It also involves a technical dimension through acquisition of scientific knowledge and its applicability in the care practice, and another policy related to power relations and the interests of professional groups.(10,11)

However, the autonomy of PHC nurses in professional practice is exercised in spaces regulated by several legal provisions, among them the National Primary Care Policy,(12) and assistance protocols of the Ministry of Health, such as guidelines from Primary Care Booklets. In addition, some municipalities have various legislations specific to the profession, such as Law 7498/86, which regulates nursing professional practice, and Resolution COFEN - 0564/2017, which establishes the Code of Ethics for Nursing Professionals, among others.(13,14)

Because of the currently predominant biomedical assistance model, there is a gap between the determined work and the actual work performed by nurses in the daily routine that interferes with the health work process organization and, consequently, tends to restrict nurses’ technical autonomy.(15)

The purpose of this study was to answer the following question: how do PHC nurses identify their professional autonomy in daily work and how is this autonomy perceived by other professionals in the multiprofessional team?

Methods

Qualitative, descriptive and exploratory study. Data were collected through semi-structured interviews with 27 nurses from the FHS and 10 professionals from the Family Health Support Center (Portuguese acronym: NASF) who worked in six Basic Health Units (Portuguese acronym: UBS) of a Technical Supervision of Health in the city of São Paulo. The inclusion criterion was a minimum of three years of practice in order to characterize an expressive work experience.

Twenty-seven out of the 31 nurses who worked in Basic Health Units of the FHS in the region participated in the study, since one was on medical leave and three did not have the minimum time of practice stipulated. The 10 NASF professionals were of the following professional categories: physiotherapist, nutritionist, psychologist, occupational therapist, speech therapist, physical educator, general practitioner, pediatrician, gynecologist and psychiatrist.

Interviews were conducted in the workplace according to interviewees’ availability in a single and individual meeting with average duration of 35 minutes between December 2013 and February 2014. Interviews were tape recorded, transcribed, and subsequently underwent discourse analysis as advocated by Fiorin and adapted by Car and Bertolozzi.(16,17) Transcriptions were read in full,
the most relevant excerpts were selected and re-composed in thematic sentences, which, in turn, were organized according to the degree of similarity, forming groups of themes. Then, the themes were re-organized into empirical categories and interpreted in the light of the theoretical-methodological reference of dialectical hermeneutics.\(^{(18)}\)

The Ethical precepts related to research with human beings were followed, as established by Resolution No. 466 of December 12, 2012 of the National Health Council. The research project was evaluated and approved by the Research Ethics Committees of the Nursing School of the Universidade de São Paulo and the Municipal Health Department of São Paulo under protocol numbers 489.982 of 10/12/2013 and 456.720 of 07/11/2013, respectively.

Results

Regarding sociodemographic profile, 85% of nurses were female, and average age was 35 years. Of these, 25.9% had previously worked as nursing technicians, 14.8% as nursing assistants and 7.4% as community health agents; 96.2% had completed latu sensu postgraduate courses (specialization) and 3.7% were attending this course; 7.4% had completed stricto sensu postgraduate courses (master’s or PhD), of which 3.7% were master’s degree and 3.7% were doctoral degree. The average time since graduation was nine and a half years and the time of practice in the FHS was six and a half years. With regard to NASF professionals, 70% were female with a mean age of 38 years. The average time since graduation was 15 years, and time of practice in the FHS was five years.

The following empirical categories related to professional autonomy of FHS nurses emerged from interviews: the possible autonomy, the autonomy dictated by protocols and the subordination to medical work.

The possible autonomy

Autonomy was perceived positively. Some of the interviewees stated that nurses act independent-

ly within their specific professional competencies without the need for another professional in order to be resolutive.

“I think we are 100% autonomous; we don’t depend on other professionals to do, [the service] doesn’t get stuck” (E17).

“We are quite autonomous, ’cause if we are not, we cannot do everything that’s done. If it’s interfering, then we’ll reach our limit” (E2).

“The Strategy [Family Health Strategy] offers a chance of autonomy, of things one can do. We follow some protocols for all things we can do within our skills. We can prescribe and solve many things without necessarily needing a medical evaluation” (E22).

“We have enough autonomy here in the Strategy; this is the differential. We have protocols for the drugs we can prescribe and that’s quite an autonomy for us” (E14).

“One thing that helps is that in the Family Health Program, nurses can do more things than in other institutions, like asking for exams, checking exams. I think this increases the credibility of nurses’ role as someone resolute” (NASF 7).

“Nowadays, nurses are much less subaltern and more resolute. We’re less afraid of taking risks and saying: ‘Look, this is mine’. In the old times, this was what was left for nurses, and nowadays this is ours” (E16).

“We joke that here, the Unit would function very well without a doctor, because nurses can manage a lot” (NASF9).
However, autonomy was associated with an individual component, a personal attribute, that is, nurses’ proactivity:

“From the contacts I had with nurses working in psychiatry, I realized they are more proactive. Not to mention here in the Family Health Program!” (NASF1).

“In general, nurses are very proactive, very independent. But that depends on the nurse’s attitude” (NASF3).

A limitation was also identified in the population’s understanding of the autonomous practice of PHC nurses:

“She also has to know how to handle the fact that the population is reluctant to have an appointment with her, explain it to users, and offer a consultation that makes sense to users, too, in order to justify it” (NASF4).

“There is a lot of recognition from professionals, and clarity of power and limitations. Users are not used to a more active nurse; they still have the image of nurses helping the doctor, and that the doctor resolves and nurses do not” (NASF8).

“Some things are still missing for our work with more autonomy, which would make a lot of difference in how much the patient trusts what we are talking about” (E7).

Another limitation mentioned by both nurses and NASF professionals was the acquisition of competencies for autonomous action throughout professional socialization, either individually or as a professional category. However, autonomy is aspired by the professional group:

“We still don’t have the ‘I, nurse’, but I think we have more autonomy” (E11).

“There are a number of variables that impact on nurses’ autonomy: the training of other professionals with them, the very formation of these nurses, the knowledge they bring from higher education institutions and that supports them, their experience and also what they have as work purpose” (NASF2).

“PHC and FHS ask nurses to [occupy] a place of autonomy, to take more responsibility. But all this has its price, right? This is also distressing, this ‘place’ I happen to have. But there is the bonus: a condition desired by the subject” (NASF2).

The autonomy dictated by protocols

In this empirical category, some interviewees mentioned that the autonomy provided by the protocols is sufficient and stressed the importance of the professional group’s respect for the legal limits of the profession.

“I see autonomy the way it is in the protocols as a good thing, but sometimes colleagues end up doing more, asking for things that are not of our scope or competence. Autonomy is good as long as you can support yourself in order to exercise it. You cannot extrapolate, do beyond what your profession allows. Users are much more oriented than they were a few years ago; they have some channels to report, complain. So, we have to be very careful about this issue of autonomy” (E7).

“I do have autonomy, and I limit myself to what I can do, what is allowed by COREN, what is allowed in professional practice. As much as I know how to do other things, I will never do. I struggled a lot to have my COREN and I will not lose it” (E19).

“I graduated as a nurse, I graduated to take care; I did not graduate to prescribe and make medical decisions. If that was the case, I would have studied Medicine. It does not bother me at all [the limitation imposed by the protocols]. What bothers me is a nurse who wants me to do things that are not my scope and are not in the protocol, that are not related to what I studied” (E7).

“I think there is autonomy within the service, within the visits and I think nurses can prescribe some medications” (NASF2).
Other interviewees made reference to the rigidity created by the protocols that legally limit the technical competencies for practice. They even rebelled against the limits imposed.

“[Here] the nurse has autonomy, much more than in other work environments. But at some points, it is still limited by protocols. COREN limits a lot, sometimes the Regional Council of Medicine gets involved by trying to veto something. Compared to a hospital, we cannot compare the autonomy we have here, but even so, it is an illusion to say we have it. Are we totally autonomous? No. We are still subordinate to agencies, protocols and councils” (E4).

“The protocols make Nursing very difficult, hinder our judgment. We have a very good background for making judgments. The issue of protocols coupled with the social construction that we are hierarchically dependent on doctors greatly impairs our judgment capacity, and even of being professionals, because this ends up making nurses themselves insecure” (E10).

“You have the autonomy to be able to prescribe a certain medication, but the protocol does not give you autonomy of judgment. If there is a big problem in the Collective Health nursing, this autonomy is relative” (E12).

“Sometimes I rebel, because I see I have scientific knowledge to make a decision, but given the governing rule above me, I cannot do it. You want to take a step forward, but you cannot do it” (E11).

“You cannot be a nurse stuck to protocols. We have protocols for everything! But we must have that critical sense and feel safe enough” (E3).

“I think there are a lot more things we could do and by the protocol, we cannot. These protocols should be expanded, so we could do things beyond what we do today. Many times, I feel very stuck to these protocols. I wish I could do more, I have the knowledge to do more, but I cannot” (E14).

“Although nurses have a good autonomy, most people out there are not aware of this. Autonomy still needs to walk a lot. There is autonomy in terms; I guess there is a lack of legal support and even an awareness from professionals in other areas that nurses have the capacity and can do some things. No one has taken it from nowhere, no one is conducting illegal professional practice” (E24).

**Subordination to medical work**

Some speeches have shown that nurses’ limited autonomy leads to the technical subordination to doctors’ work. Nurses evaluate the case and make clinical judgment but, given the lack of legal and institutional support, they must submit to the doctor’s authority.

“An issue that annoys me is, because of the service demand, often having to make the prescription, then taking it to another person to get a stamp. In doing so, you go up and down [the stairs] 500 times a day; if you don’t do it, it’s even worse. Is this autonomy? Yes, but very fragile” (E15).

“Sometimes, I have to leave my office and ask the doctor to sign something. I think this disrupts my consultation; I hate doing this! I did everything, then, I’ll leave so someone will stamp a prescription, and come back .... There’s a lot we do all the time, and it’s crystal clear it’s ours. People end up covering this, I don’t know why. I think it doesn’t interrupt it, but makes it more difficult” (E12).

“Sometimes, I realize how much the nurse turns out to be the doctor’s secretary: you make the prescription, do this and that, and doctors just go there and ‘tum’, stamp it. So, I don’t know how far is it autonomy... They often question the conduct, I’ve seen it, mainly from doctors” (NASF 10).

This situation demonstrates the identity of nurses and their position as doctors’ assistants, as illustrated in the following excerpts:

“Nurses don’t have an active voice, it is often the doctor who dictates the rules and they only com-
pily; ‘task doer’, in fact. In some services, nurses can have more autonomy than in others. But often, the community has that stereotype of the nurse being a mother, a caregiver, and often not only playing the role of nursing; doing everything, being a social worker, serving” (NASF8).

“At graduation we are led to see the nurse as a doctor’s assistant and I imagine that in some settings, it still works a bit like this, especially in the hospital environment” (NASF1).

“The community sees nurses as the doctor’s helper; they don’t see the nurse as someone who is caring for their health” (NASF 2).

“In another Unit, we perceive a more submissive attitude towards the doctor; the doctor doesn’t give as much autonomy and the nurse also cannot conquer this space” (NASF3).

“If we are in this small world of ours, in here, there is no problem. But who guarantees that our users, who transit here, will not go to the other side of the city, to an expert ‘X’ that sometimes the network itself referred them to, and take a prescription with a nurse’s stamp? I find this very complicated. Within Basic Care, I think this is clear, outside that space, I think [autonomy] is very fragile indeed” (E22).

Discussion

The results of the investigation showed that nurses and NASF professionals perceived an increase in the professional autonomy of PHC nurses, notably through clinical practice supported by care protocols with the possibility of requesting and evaluating complementary exams and prescribing medication. However, these same protocols that broaden nurses’ scope of action were also perceived as limiting their potential clinical skills. The persistent subordination to medical work was mentioned along with PHC nurses’ autonomous work.

PHC nurses’ practice is based on care protocols. The Law 7498/86, which governs the nursing professional practice and is regulated by Decree 94.406/87, states that nursing consultations and the prescription of nursing care are part of nurses’ role. As a member of the health team, they are also responsible for prescribing medicines established in public health programs and in routines approved by the health institution.(13)

The National Primary Care Policy assigns to nurses the nursing consultation, assistance and educational activities in group, procedures, request for complementary exams, prescription of medication and referrals to other services, although emphasizing the need to regulate such actions in federal, state or municipal protocols.(12)

Therefore, in the current practice scenario of PHC in Brazil, care protocols have an essential legal character that guides nurses’ actions. They provide a detailed description of how to approach the user, perform consultations, the nursing history, physical examination, diagnosis, prescription of care or medication. Some protocols also define the concepts and professional values that should support the practice, the functioning of health services and the roles or attributions of each nursing team member. They also describe the nursing techniques or procedures, as well as care goals, when they exist, which includes the number of consultations and visits by professional category.(19)

Although in Brazil, PHC nurses’ clinical practice is based on protocols that detail procedures, tasks and responsibilities, nurses can sometimes be unsure of the work they do. Part of the insecurity stems from lack of institutional support.(20-22)

Another aspect refers to limitations imposed by protocols that interfere with nurses’ competencies and lead to their underuse. PHC nurses working in highly vulnerable regions with a shortage of human resources in health could play their role with greater autonomy, thereby contributing to reduce mortality and morbidity, especially in remote areas.(23)

Since nurses are the most present college-level professional in PHC health teams, they are the most linked to the commitment of solving the problems of users and their families. In the absence of a doctor in the team, they are responsible for responding to the families’ health needs. (21)
PHC nurses also assume the position of integrating the work of health teams, which is mostly an invisible role that ends up re-signifying nurses’ professional identity. Such particularity of work must be recognized in public health policies in order to strengthen its resolving competence, enable greater institutional support and strengthen nurses’ professional identity by making the invisible evident and legitimate.

Regarding the subordination of nurses’ practice to medical work, some statements suggested the existence of real conflict between these professionals in routine work, in a kind of ‘competition’ for the professional exercise. This issue concerns the professional group of nurses or PHC nurses internally, and must also be understood in the wider context of social and economic division of health work, in a neoliberal and rationalizing public health cost model adopted by the State, in which even doctors are autonomy.

In Brazil, between the 1980s and 1990s, the access to health services increased and individual health care was expanded in order to include collective health actions. Nurses’ work was structured for the service organization in a way that enabled medical care and the performance of actions such as vaccination and epidemiological surveillance. Nurses’ performance gained greater prominence as a member of the multidisciplinary team, based on the nature of their own body of knowledge for providing care to users, which has expanded widely and impacted on professional practice.

The collective characteristic of PHC work, in which the sharing of knowledge and decision-making leads to less professional boundaries or limits, means there are many common and shared competencies among the different professionals. General or common competencies are performed in all or many professions, and result in a similar professional behavior in a particular sector, in this case, of health. Specific or complementary competencies distinguish the singularity of a profession and are not easily transferable to another. Collaborative competencies concern what can be shared between professions and the agents involved in the professional action.

The Pan American Health Organization (PAHO) emphasizes collaborative practices as a strategy for increasing universal access to health in Latin America and maximizing the practice scope for each profession. Advanced Practice Nursing (APN) is another health innovation considered by PAHO as having potential to transform training and practice scenarios with the aim to expand access and improve population coverage.

Advanced practice nurses are empowered to make complex decisions supported by clinical competence and expertise gained through postgraduate studies, usually the master’s degree. The International Council of Nurses (ICN) lists five types of autonomy in the list of clinical activities expected from advanced practice nurses, as follows: to prescribe, request medical examinations, perform advanced health diagnoses, indicate treatments, and make referrals and counter referrals of users.

International experiences of advanced practice nurses, especially in the United States and Canada, have identified positive impacts on the quality of care provided in PHC and on nurses’ professional satisfaction.

According to PAHO, advanced practice nurses are a key step in strengthening PHC and expanding access to health services. Strategies to this end include developing collaborative networks of APN for increasing the number of nurses taking leadership positions and maximizing the potential of their practices. They also include joint efforts of training institutions, policy makers, decision-makers, and interprofessional work groups for strengthening intersectoral actions and community participation.

PAHO proposes the following roles for APN in Latin American countries: 1) Nurse practitioners, nurses with master’s degrees, whose work is directed to diagnose acute and chronic acute diseases. 2) Nurse case manager, whose main focus is to integrate patient care between the different levels of care and 3) Advanced practice nurse specialist in obstetrics, whose care is aimed at pregnant women.

In the context of Brazilian PHC, advanced practice nurses could contribute to the development of the profession and evidence-based practices with solid technical and legal bases, and thus increase
the achievement of goals projected for the Brazilian health system. Five strategies are proposed for implementation of APN in the country: investment in professional training, promotion of continuing education, incorporation of evidence-based practice by PHC nurses, regulation of legislation that guides professional practice, and changes in the health system for expanded practice.(35)

**Conclusion**

The study revealed an increase in the clinical scope of PHC nurses, which, to a certain extent, brought it closer to medical work. On the other hand, the expansion of interprofessional boundaries required by the work process in PHC, and the growing need for new competencies, allowed nurses to take over some actions that were previously exclusive of doctors. Modern nursing was structured by having the hospital as reference and Medicine as a hegemonic profession. This approach to the medical model provided the substrate of scientificity that gave meaning to nurses’ actions and interventions. Initially, nurses assumed the role of assisting doctors in the organization of the hospital space, then, later in the organization of public health services by assuming management and control functions. At present, there seems to be a paradox linked to nurses’ practices in PHC. From a broader historical point of view, the approximation to medical work has brought meaning and legitimacy to nurses’ practice. More recently, PHC nurses have been moving away from subordination to Medicine and seeking to establish themselves with greater autonomy in individual clinical care, in spite of limitations imposed by care protocols. In addition, they continue to act in the management of service and nursing teams, and integrate the other professionals. Therefore, two ongoing challenges exist in PHC: the implementation of interprofessional collaborative practices and the increase of nurses’ professional autonomy in the proposal of advanced practice nurses. Thinking about the new competencies required from nurses for the work in PHC means taking into account the policies developed for the sector and for health professional training, and also the autonomy they achieve in their concrete daily practice in health services.

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**Collaborations**

Pereira JG and Oliveira MAC declare they have contributed to the project design, analysis and interpretation of data, article writing, critical review of the intellectual content and final approval of the version to be published.

**References**

**Advanced practice nursing in Latin America and the Caribbean: context analysis**

Prática avançada de enfermagem na América Latina e Caribe: análise de contexto

Prática avanzada de enfermería en América Latina y el Caribe: análisis de contexto

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**Abstract**

**Objective:** To describe the factors that can influence the implementation of Advanced Practice Nursing (APN) in contexts of Latin American and Caribbean countries.

**Methods:** This context analysis was performed in October 2017 by means of a scoping review. The search for studies was performed in databases and portals of national and international theses and dissertations. The sample included nine studies based on the analysis and correlation between the findings of these publications on APN in Latin America and the Caribbean and the contextual spheres proposed by Hinds and their specificities.

**Results:** In Latin American and Caribbean countries, were defined the following factors among those favoring the implementation of APN: particularities of APN in Latin America and the Caribbean; the challenges and potential of APN in Latin America and the Caribbean; perspectives of APN in Latin America and the Caribbean; and legislations of APN in Latin America and the Caribbean.

**Conclusion:** APN in Latin America and the Caribbean has the potential to be implemented, but specific barriers are still faced in the different realities investigated.

**Keywords**

Advanced practice nursing; Latin America; Caribbean region; Nursing research

**Descritores**

Prática avançada de enfermagem; América Latina; Região do Caribe; Pesquisa em enfermagem

**Descripciones**

Enfermería de práctica avanzada; América latina; Región del Caribe; Investigación en enfermería

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Introduction

Advanced Practice Nursing (APN) was structured in the United States of America (USA) initially with nurses trained as a Clinical Nurse Specialist (CNS) with a focus on the hospital setting. Subsequently, a new classification emerged in the 1960s - the advanced practice nurse or Nurse Practitioner (NP), in which care is focused on primary health care (PHC).(1-3)

For the International Council of Nurses (ICN), APN is the performance of specific and complex activities, and the ability to make decisions independently in order to meet the population needs in health.(4)

The inclusion of APN showed nurses’ relevance by demonstrating that their autonomy promoted greater coverage of care, more efficient care, reduction of costs, effective management activities in line with population demand, credibility and affirmation of the profession.(3,5)

With a view to providing greater accessibility and quality of care, APN was disseminated worldwide, in Canada in the late 1960s, and in Europe and Asia in the 1980s.(1,2,5) In Latin America, APN spread only at the beginning of the 21st century through the formulation of resolutions and research developed in educational institutions.(1,5-8)

This search for the promotion of APN in Latin American countries occurred due to local socioeconomic needs and, despite differences in the levels of development of these countries, there are still obstacles for achieving quality health care, mainly because of human and material resources deficits.(5-9)

Thus, the Pan American Health Organization (PAHO) adopted Resolution CD52.R13: Human Resources for Health: Increasing Access to Qualified Health Workers in Systems Based on Primary Health Care-based Health Systems. And, as a continuity, in the following year, was developed the Strategic Plan for Universal Health Coverage focusing on Latin America.(10,11)

Thus, PAHO understands the importance of training and qualifying nurses with regard to APN. However, the quality of postgraduate courses in Latin America has to be expanded and optimized, as well as the support of nursing institutions and governmental agencies in those countries.(1,4,10-12)

The aforementioned shows the determination of world institutions in achieving the implementation of APN in Latin American countries with the aim to facilitate the population’s access to health services, offer qualified health care, minimize social inequalities, and value and enhance nursing professionals’ training.(1,5,6,8,12,13)

Therefore, if the development and affirmation of APN in a given locality depends on its context, there must be an understanding of the possible strengths and weaknesses for the easier design of measures that contribute to promotion of APN in Latin America and the Caribbean.

The context is a set of interconnected relations about a fact or scenario and, as a means of analysis, it comprises four interactive levels, namely: the immediate focuses on the present and represents the episode itself; the specific level encompasses the immediate past together with elements that influence the event; the general level involves past and present interactions of events occurring over time; and the metacontext includes the previous with emphasis on the present and highlights the conditions and learnings as a model for the future.(14)

Thus, the relevance to know and understand the different contexts (educational, care, social, political) that may influence the implementation of APN in Latin American and Caribbean countries. The clarification of these circumstances will contribute to the discussion on the eventual implementation of APN in the region.

Therefore, was delineated the following guiding question for this study: What factors can influence the implementation of APN in contexts of Latin American and Caribbean countries? And the aim was to describe the factors that can influence the implementation of APN in contexts of Latin American and Caribbean countries.

Methods

A scoping review was conducted as recommended by the Joanna Briggs Institute, since this method in-
Advanced practice nursing in Latin America and the Caribbean: context analysis

Includes several databases and catalogs of global theses and dissertations, as well as the gray literature.\(^{(15)}\)

The search of studies in databases was performed in October 2017, and were used the Boolean operators “AND/OR”: ((Nurse OR Personnel, Nursing OR Nursing Personnel) AND (Advanced Practice Nursing OR Nursing, Advanced Practice OR Practice Nursing, Advanced) AND (Latin America)).

The following databases were used: U.S. National Library of Medicine (Pubmed), Cumulative Index to Nursing & Allied Health Literature (CINAHL), Web of science, SCOPUS, Latin American and Caribbean Health Sciences Literature (LILACS), Academic Archive Online (DIVA), Europe E-theses Portal (DART), Electronic Theses Online Service (EThOS), PsycINFO, The National Library of Australia’s Trobe (Trove), Portuguese Open Access Scientific Repository (RCAAP), Theses Canada, Cochrane CENTRAL, Educational Resources Information Center (ERIC), South African National Theses and Dissertations (ETD Portal).

In the selection of studies, were included those addressing some context of APN in Latin America and the Caribbean, available in full and for free. Opinions, letters to the editor and duplicate documents were excluded.

In the selection of publications, were identified 400 studies. After reading titles and abstracts, 391 were excluded because they only mentioned APN, and nine addressed some context of APN in Latin America and the Caribbean. After the full analysis, the nine studies formed the final sample (Figure 1).

The context analysis model was adopted because it enables the dynamic understanding of relationships forming a phenomenon, which leads to an easier comprehension of its dimensions and its occurrence.\(^{(14)}\)

In the present study, the immediate context refers to direct characteristics of APN in educational and care spheres that contribute to this practice implementation in Latin America and the Caribbean. The specific context includes interpretations of actions performed or not, which can facilitate or accelerate this professional exercise. The general context covers relevant aspects of the past, measures proposed and/or adopted with a view to boost the development of APN. The metacontext evaluates

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**Figure 1.** Flowchart of the study selection process
the present and the past in order to investigate elements associated to laws and regulations on APN in Latin American and Caribbean countries.

After the analysis, data were correlated and grouped at each contextual level according to their particularities and presented in subtopics. A graphical representation of interrelated layers was constructed as well.

**Results**

The final sample of this study included nine studies published between 2001 and 2017. Three (33.3%) were published in 2016, two (22.3%) in 2017, and the others in 2001 (11.1%), 2013 (11.1%), 2014 (11.1%), and in 2015 (11.1%). These studies were conducted in Argentina, Bolivia, Brazil, Chile, Colombia, Jamaica and Mexico.

Regarding contextual levels, in the Caribbean, the characterization of APN was identified in the immediate, for example, in nursing professionals’ autonomous attitudes, advanced practices in drug prescriptions and possibilities for the population’s access to health services. (6,8,16-18)

In the specific context, aspects that strengthen the progress of APN in Latin America and the Caribbean stood out, among which the profile of health professionals’ training, the increase of postgraduate programs, and expansion and appreciation of APN. (6,8,9,13,18,19)

In the general context, the positive interference of APN in Latin America and the Caribbean was evident, especially for the promotion of primary care as a gateway to the health system, the provision of greater access to health services for the poor, optimization of master’s and PhD courses, and the consequent improvement of nurses’ activities in patient care. (5,6,8,9,13,16-19)

The metacontext includes past and present with future perspectives. There were wide regional differences of socioeconomic development between countries in Latin America and the Caribbean, and organizational and political movements in favor of APN, which are factors that influence the implementation of this practice in educational and health systems. (5,6,8,9,17)

Thus, contextual levels are the following: particularities of APN in Latin America and the Caribbean (immediate context); the challenges and potential of APN in Latin America and the Caribbean (specific context); perspectives of APN in Latin America and the Caribbean (general context); and legislations of APN in Latin America and the Caribbean (meta-context), as shown in figure 2.
Discussion

Most studies in the final sample are from recent years, which demonstrates that even though discussions about APN exist since the 1970s, the topic is still incipient and less widespread in Latin America.\(^{(1,17)}\)

The following sub-themes present the findings of this study for an easier understanding of the perspective of APN in Latin America and the Caribbean.

Particularities of APN in Latin America and the Caribbean

In a study\(^{(6)}\) developed with nursing professionals and from their perceptions, was found no clear distinction between the different roles and specific responsibilities of each component of the professional category (nurse and nurse technician).

On the other hand, other studies\(^{(15,17,18)}\) indicated a contrary perception, and APN was associated with nurses who perform care directly, lead, collaborate and cooperate with the health team and users, actively participate in teaching, research, decision making, among others.

These actions are equivalent to those identified by the ICN, which determines professionals’ involvement in research, education, practice and management, as well as their demonstration of autonomy and independence with advanced clinical skills.\(^{(4)}\)

Regarding training for APN, this sample contains a Brazilian case in which the specialization course (lato sensu) was reported as a prerequisite for nurses performing their activities.\(^{(18)}\) In other studies,\(^{(13,17)}\) the specialization course (lato sensu) is highlighted as a minimum requirement for APN. This aspect differs from global recommendations, since the title is only awarded to professionals with a master’s degree.\(^{(17)}\)

PHC is a possible scenario of practice of APN.\(^{(6,8,9,16,17-20)}\) In this case, emerge the health promotion and prevention, drug prescription, and leadership of the health team.\(^{(8,9,16,17)}\)

In one of the studies,\(^{(18)}\) is addressed nurses’ practice in specialized hospital oncology. In this situation, care practices are clinical visits, assistance in performing diagnostic procedures and follow-up therapy, participation in discussions of clinical cases and scientific meetings, development and implementation of protocols for prevention of risks and diseases, teaching of treatment protocols and specific care.

In the hospital setting, APN can supply the lack of a qualified, humanized care based on patients’ individual needs.\(^{(16,18)}\) In PHC, these professionals are seen as a possibility of expanding the population’s access to services.\(^{(6,8,9,16,17)}\)

The particularities of APN identified in this study are related to nurses’ specific characteristics recognized globally in this practice that are generally mentioned in the literature. According to the ICN,\(^{(4)}\) such characteristics should be related and defined in discussions of the movements of each country.

Challenges and potential of APN in Latin America and the Caribbean

The challenges for implementation of APN are the training focused on the biomedical model and resistance of other members of the multiprofessional team.\(^{(6,13,18,19)}\)

Regarding nurses’ training, in a study,\(^{(19)}\) this professional category considered that teachers do not promote a PHC-oriented teaching and workers are trained based on the hospital-centric model. In this same study, was suggested the participation and support of foreign universities, since these institutions have professionals exercising APN.

The main cause for the multiprofessional team resistance is the lack of definition of each team member’s role. This difficulty can be overcome through integrated work and discussion of clinical cases.\(^{(18)}\)

The nursing practice in PHC is highlighted as a potentiality in the sample.\(^{(6,8,9,16,17)}\) Although the field of public health is heterogeneous across countries because of epidemiological and infrastructure divergences, nurses agree there is strong acceptance of nursing in PHC by the population.\(^{(19)}\)

In Brazil, a postgraduate course in nursing is a facilitator for APN. In this country, there is a great variety of stricto sensu (master’s) and lato sensu
(specialization) programs hence, a favorable scenario for professional qualification.\(^{(6,13,17,19,20)}\)

In countries where APN is regulated, such as the US and UK, similar barriers were found. The strategy adopted in these cases was the production of evidence, as it attracted financial and political support that contributed to the maturation of APN. Knowing the successful experiences and taking them into consideration puts all of Latin America and the Caribbean in an advantageous position in order to overcome weaknesses and enhance their strengths.\(^{(9,16,17,19)}\)

**Perspectives of APN in Latin America and the Caribbean**

Studies\(^{(5,6,8,9,13,16-19)}\) point out that APN is not a current reality, but global level organizations seek to introduce it in order to meet the needs related to access and quality of health care and consequently, exert influence in the care process.

Among the perspectives for implementation of APN, were highlighted the insertion and encouragement of nurses’ work focused on prevention and health promotion, especially in rural areas and those of difficult access, since these regions have deficiencies of different etiologies compared to urban localities.\(^{(6,8,16)}\)

These geographical and structural divergences are a result of the poor distribution of human and material resources with greater concentration in cities close to the capital to the detriment of more distant municipalities.\(^{(21)}\)

However, when considering the needs of peripheral populations in Latin countries, are sought strategies to meet these deficiencies with the PAHO support.\(^{(1,4,8,9,11)}\) Such an organization encourages the insertion of APN as an important strategy for solving health care coverage problems.\(^{(11,12)}\)

The contribution with insertion of APN in these contexts points to the transition from the biomedical to the biopsychosocial paradigm in order to transcend the single-cause health-disease process and affirm the relevance of health care focused on prevention and promotion with a multidisciplinary team aimed at promoting continuous, safe and comprehensive care.\(^{(22)}\)

Researches\(^{(5,6,13,16,18)}\) indicate the growth and incentive of postgraduate courses as an influence for APN, because nurses have a greater theoretical-practical qualification.\(^{(4)}\)

This fact corroborates the period of dissemination of APN throughout the world, and the graduation of the first master’s classes in Latin America and the Caribbean, first in Venezuela and Colombia, and in the following decade in Brazil.\(^{(6,7,9,13,20,21)}\)

Although stricto sensu (master’s) courses are recent in Latin American countries, their number has increased significantly, especially in countries such as Brazil, where there were about 52 master’s and doctoral courses in 2014. This fact indicates growth and dissemination of research.\(^{(5,6,9,13,16,23)}\)

**APN legislations in Latin America and the Caribbean**

The inclusion of the APN is not a uniform reality in Latin American countries. Jamaica and Belize are the countries with the greater experience in trying to implement this practice, and even if limited, ANP certification programs have been issued since 1992 with government support from local health reforms, and because of human resources shortages in underserved areas.\(^{(5,6)}\)

On the other hand, the difficulties or not for implementation of ANP in Latin America and the Caribbean change according to the demand, and cultural, social and economic aspects of each region. Countries such as Brazil, Mexico, Chile and Colombia are the most susceptible to APN and more prepared to put it into practice, given their increasing number of undergraduate and postgraduate courses.\(^{(5,6,8,9,13,17,20)}\)

In Brazil, both master’s and doctorate courses have two versions, academic and professional, which contributes to the adaptation of educational programs for the promotion of APN.\(^{(5,13,17,18)}\) Mexico and Chile have partnerships with US university centers for implementation of APN, while in Colombia, the nursing and politicians participate in the preparation of the context.\(^{(5,16)}\)

However, regulations and legislations of the various countries are not favorable to APN given the lack of knowledge about the importance and
benefits that it can generate for health services and/or by considering the existence of such workers in the field of local health care as unviable and unnecessary.(5,8,9,13,17,19,20)

However, among Latin American countries, Brazil is the most likely to implement APN. The country has already established a foundation focused on the autonomy and relevance of nursing in the health setting, and an example is the Law of Professional Exercise and National Policy of Basic Care (Portuguese acronym: PNAB).(24,25)

A study(6) conducted in Latin American and Caribbean countries demonstrated that 88% of participants are unaware of regional regulations on APN and the prospects for their development. However, in pilot projects in Brazil(18) and Chile(16), the aims are to provide training for NP in pediatric oncology and in PHC, respectively.

Therefore, it is essential to advance nursing education regarding the standardization and effective participation of trained teachers with specific skills for APN(5,13,19) and in movements that instigate the reflection of managers and governments on advances of this practice and thus institute policies for encouraging APN.(6,8,9,17)

Conclusion

Among factors of the contexts analyzed, APN in Latin America and the Caribbean has the potential to be implemented because of organizational and educational movements to optimize the nurses’ skills given the population need for access and quality of health services. Advances in APN are a highlight of its strengthening in Latin America and the Caribbean, as well as satisfactory prospects for the promotion of APN in rural areas and those of difficult access in order to promote greater health care coverage. However, there are barriers to the establishment of APN, the other health team professionals’ resistance to APN nurses, the lack of investment and disinterest of the government and public agencies, and the lack of favoring legislations for strengthening the practice. The low number of studies found did not allow establishing further generalizations, which may not have contributed to the achievement of new propositions. It is imperative to promote discussions with political and educational organizations interested in implementing APN; to publicize the successful experiences of this practice in health services in order to provide accessibility and continuity of care to the local population; and strengthen the relevance of nursing in health services.

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Collaborations

Bezerril MS, Chiavone FBT, Mariz CMS, Sonenberg A, Enders BC e Santos VEP contributed with the study project and design, analysis and interpretation of data, relevant critical writing of the intellectual content and final approval of the version to be published.

References


Transformational leadership in nurses’ practice in a university hospital

Liderança transformacional na prática dos enfermeiros em um hospital universitário

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Keywords
Leadership; Health services; Nursing staff; Hospital, university

Descritores
Liderança; Serviços de saúde; Recursos humanos de enfermagem; Hospitais universitários

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Abstract
Objective: To analyze the exercise of transformational leadership in nurses’ practice in a university hospital.

Methods: Mixed-method explanatory sequential study. In the quantitative phase, a questionnaire of attitudes towards leadership styles adapted to the frequency of adoption of transformational leadership behaviors was applied to a non-probabilistic convenience sample of 152 nurses from the university hospital. Descriptive and analytical statistical tests were used for data treatment. In the qualitative phase, 25 participants from the first phase were randomly selected (draw) and responded to a semi-structured interview that was analyzed by thematic content analysis.

Results: The practice of transformational leadership was identified frequently among nurses. However, they had difficulties to exercise this leadership model, because of lack of institutional support, since vertical leadership is the most adopted style, as well as lack of training for care nurses, and weaknesses in communication and discussion of problems before decision making.

Conclusion: The managers’ greater exercise of vertical leadership offers resistance to the transformational leadership practice. However, nurses believe that leadership with horizontal behavior can favor structural and behavioral institutional changes.

Resumo
Objetivo: Analisar o exercício da liderança transformacional na prática dos enfermeiros em um hospital universitário.

Métodos: Estudo de métodos mistos explanatório sequencial. Na etapa quantitativa, com amostra não-probabilística por conveniência, aplicou-se um questionário de atitudes frente a estilos de liderança adaptado para a frequência de adoção dos comportamentos de liderança transformacional a 152 enfermeiros do referido hospital. Estes dados passaram por testes estatísticos descritivos e analíticos. Na etapa qualitativa, 25 participantes da primeira etapa foram sorteados e responderam a uma entrevista semiestruturada, analisadas mediante análise temática de conteúdo.

Resultados: Identificou-se a prática da liderança transformacional de forma frequente entre os enfermeiros. Entretanto, eles apresentam dificuldades para exercer esse modelo de liderança, devido a carência de apoio da instituição que, majoritariamente adota uma liderança verticalizada, pela falta de capacitação para os enfermeiros assistenciais, e fragilidades na comunicação e discussão dos problemas antes das tomadas de decisões.

Conclusão: A prática da liderança transformacional encontra resistências pelo maior exercício da liderança verticalizada pelos gestores, entretanto os enfermeiros acreditam que uma liderança com comportamento horizontalizado pode favorecer mudanças estruturais e comportamentais da instituição.

Resumen
Objetivo: Analizar el ejercicio del liderazgo transformacional en la práctica de enfermería de un hospital universitario.

Métodos: Estudio de métodos mixtos explicativo secuencial. En la etapa cuantitativa, con muestra no probabilística por conveniencia, se aplicó cuestionario de actitudes frente a estilos de liderazgo adaptado a la frecuencia de adopción de conductas de liderazgo transformacional a 152 enfermeras del hospital. Estos datos pasaron por pruebas estatísticas descriptivas y analíticas. En la etapa cualitativa, 25 participantes de la primera etapa fueron sorteados, y respondieron a entrevista semiestructurada, revisada por análisis de contenido temático.

Resultados: La práctica del liderazgo transformacional fue identificada frecuentemente entre los enfermeros. Sin embargo, presentan dificultades para ejercer este modelo de liderazgo debido a falta de apoyo institucional, que mayoritariamente adopta un liderazgo vertical, por falta de capacitación de los enfermeros de atención y debilidades comunicacionales y de discusión de problemas antes de tomar decisiones.

Conclusión: La práctica del liderazgo transformacional encuentra resistencia por el mayor ejercicio de liderazgo vertical de los gestores, sin embargo, los enfermeros creen que un liderazgo de tipo horizontal podría favorecer cambios estructurales y conductuales en la institución.
Introduction

The current situation of health services is characterized by scarcity of material resources, weaknesses in people management, overcrowding of beds and reduction of public investments.\(^{(1)}\) In addition, managers of hospital institutions do not have the means to solve health demands satisfactorily, which leads to the hardening of available alternatives and highlights the need for leaders’ collaboration in the care management. To this end, these professionals must have relational skills, take decisions based on a critical eye, and continuously develop leadership potential in order to improve clinical practice and meet the population’s health needs.\(^{(2)}\)

As leadership is one of the main managerial skills and essential for nurses’ practice, it must be developed and improved permanently.\(^{(2)}\) Knowing nurses’ leadership styles can help and boost the improvement of this important professional skill. The organization can influence the style of leadership by presenting negative or positive points that will facilitate or hinder the development of people’s roles, which requires practical and effective solutions from the leader.\(^{(3,4)}\) In spite of this, some authors defend that the work environment does not interfere in the leader’s behavior towards collaborators.\(^{(5)}\)

The transformational leadership style involves transformative actions aimed at improving people’s perception on the importance of work and the activities performed. This way, people will effectively engage with the cause of the organization and act towards the achievement of their goals. The leader can identify the personal and professional needs of others, develop their own moral characteristics and follow professional ethics, as well as a set of skills.\(^{(6)}\)

Studies\(^{(7,8)}\) report the benefits of institutions where there is concern with forming and empowering transformational leaders, since this is positively associated with higher levels of job satisfaction and care delivery.\(^{(9,10)}\) Particularly in Nursing, nurses must recognize leadership as an essential skill for the professional practice related to organization, trust and guidance of the team.\(^{(11)}\)

From this perspective, arises the following research problem: “how does the nurse exercise leadership in a university hospital?”. The aim was to analyze the exercise of transformational leadership in nurses’ practice in a university hospital.

Given the relevance of leadership in Nursing, the aim of this study is to contribute to a greater reflection and awareness of this issue. Furthermore, it allows the identification of the leadership style adopted by nurses, which may impact in institutional leadership and interpersonal relationships among team members, thus favoring the care provided.\(^{(4)}\) and indicating elements for leaders’ development and improvement.

Methods

This is a mixed-method explanatory sequential study.\(^{(12)}\) It was conducted in a reference university hospital located in the state of Bahia that has been administered by a public company under private law since 2012.

In the quantitative phase, was adopted a non-probabilistic convenience sample. The inclusion criterion was being a nurse in the studied scenario. The exclusion criterion was being on vacation and/or away from work for any reason during the data collection period (between August and November 2017). Three nurses could not participate because they were on work leave. On average, there are three nurses on vacation per month in the hospital, which did not affect the collection, because whoever was not approached in the month of vacation, was approached in the following month. In total, 234 (98.7%) nurses working at the institution were invited to participate, out of whom 124 were professionals under a formal employment contract and 113 were statutory employees. Participation in the study was accepted by 152 (64.1%) professionals, which was more than the minimum sample of 147 nurses. The confidence interval was set at 95% and a sample error of 5%.

In the quantitative data collection instrument, was requested a telephone number to assist in the qualitative phase. It included two sociodemographic variables, namely sex and employment agreement, and a validated questionnaire adapted for
investigating the frequency of adoption of transformational leadership and transactional leadership behaviors.\(^{(13)}\)

The questionnaire contains 22 variables, out of which 14 are related to transformational leadership, and eight related to transactional leadership. Responses were given in a Likert-type scale ranging from 0 to 10, with 0 = never, 1 = almost never, 2 = rarely, 3 = few times, 4 = occasionally, 5 = sometimes, 6 = often, 7 = usually, 8 = very often, 9 = almost always, and 10 = always. The quantitative data collection instrument was handed in the workplace or sent by email via Google Forms. The online form was recommended for professionals who were leaving the office (end of work shift) or for those who reported lack of time. Six professionals preferred this method.

The collected data were analyzed through the Statistical Package for the Social Sciences (SPSS), version 21.0. Categorical variables were presented in absolute and relative frequency, and numerical variables in measures of dispersion and measures of central tendency. After treatment and analysis of data through the SPSS 21.0, the median was used as the central measure, and the interquartile range was the measure of dispersion. The level of significance was set at 0.05 (5%).

The variables of the Likert scale were defined as follows: 0-3 score was considered as ‘nonexistent or little practice’ of the transformational leadership style; 4-7 score was ‘usual practice’; and 8-10 score was ‘frequent practice’. Data of variables that for some reason were not answered by participants, were not analyzed. Absence of response was between 0.0% and 1.3% (n = 2) for variables of transformational leadership, and between 0.0% and 2.0% (n = 1.9) for transactional leadership variables. The reliability coefficients (Guttman’s lambda-2) of the questionnaire were 0.82 and 0.78 for transformational and transactional leadership factors, respectively.\(^{(13)}\)

For adaptation of the questionnaire, the person responsible for validation of the instrument was contacted.\(^{(13)}\) The only change was made in the score of answers that previously measured the attitude towards the leadership style, and began to measure the frequency with which transformational and transactional leadership behaviors are practiced, that is, leadership style.

With the data found was identified the predominant leadership style. The aim of the qualitative phase was to investigate the transformational leadership, and was used the semi-structured interview technique. Interviews were conducted individually in a private room at the institution with date and time previously scheduled with participants, and use of two tape recorders.

The guiding question was “how do you usually exercise your leadership?” During the interview, when the transformational leadership behavior appeared in the testimonies, other questions were formulated in order to provide further clarification and facilitate the researcher’s understanding on how leadership was exercised by nurses within the university hospital. The interviews lasted 30 minutes on average, and were conducted by undergraduate students in scientific initiation or by the researcher.

The corresponding ‘n’ of this phase was based on the criterion of information saturation,\(^{(14)}\) and there were 25 participants. They were chosen through simple random draw and only those who signed the Informed Consent form participated in the first phase. The content analysis technique in the thematic modality was used for analysis of data collected\(^{(15)}\) together with the Nvivo 11 software.

This study was submitted to the Plataforma Brasil and approved by the Research Ethics Committee of the Universidade Federal da Bahia. The ethical approval of the macro project entitled “Transformational Leadership of Nurses in a University Hospital” was granted under number 2.056.861, thereby meeting the ethical principles of Resolution 466/12. For anonymity, in the qualitative phase, interviewees were identified by the letter E followed by a sequential number given in the previous phase.

## Results

In the first phase of the study, 152 nurses participated and most were female (88.2%) (n = 134). The
The majority of these professionals, 70.4% (n = 107) were under a formal employment contract, and statutory employees accounted for 29.6% (n = 45) of the sample. The scores of median of variables and the frequency with which transformational leadership and transactional leadership practices were exercised are described in tables 1 and 2, respectively.

### Table 1. Median and frequency of Transformational Leadership characteristic behaviors (n = 152)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Median (IQR)*</th>
<th>Little practice n(%)</th>
<th>Usual practice n(%)</th>
<th>Frequent practice n(%)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Search for new opportunities for the unit/department/organization</td>
<td>7(5-9)</td>
<td>12(8.0)</td>
<td>74(49.1)</td>
<td>63(42.3)</td>
<td>149</td>
</tr>
<tr>
<td>2- Show that you have high expectations in relation to the team.</td>
<td>8(6-9)</td>
<td>4(2.6)</td>
<td>61(40.1)</td>
<td>87(57.3)</td>
<td>152</td>
</tr>
<tr>
<td>4- Consider the personal needs of team members.</td>
<td>8(7-9)</td>
<td>1(0.6)</td>
<td>64(42.7)</td>
<td>85(56.7)</td>
<td>150</td>
</tr>
<tr>
<td>6- Encourage individuals to think about old problems in new ways.</td>
<td>8(6-9)</td>
<td>9(5.9)</td>
<td>64(42.4)</td>
<td>78(51.7)</td>
<td>151</td>
</tr>
<tr>
<td>7- Praise when team members do a job above average.</td>
<td>9(8-10)</td>
<td>0(0.0)</td>
<td>25(16.6)</td>
<td>126(83.4)</td>
<td>151</td>
</tr>
<tr>
<td>8- Lead by ‘doing’ rather than by simply ‘saying’.</td>
<td>9(8-10)</td>
<td>0(0.0)</td>
<td>28(18.5)</td>
<td>123(81.5)</td>
<td>151</td>
</tr>
<tr>
<td>10- Get the group to work together in pursuit of the same goal.</td>
<td>8(7-10)</td>
<td>2(1.3)</td>
<td>59(38.8)</td>
<td>91(59.9)</td>
<td>152</td>
</tr>
<tr>
<td>12- Insist on the team’s best performance.</td>
<td>8(7-10)</td>
<td>1(0.6)</td>
<td>55(36.2)</td>
<td>96(63.2)</td>
<td>152</td>
</tr>
<tr>
<td>14- Present new ways of looking at things that used to be confusing for team members.</td>
<td>8(6-9)</td>
<td>5(3.3)</td>
<td>67(44.7)</td>
<td>78(52.0)</td>
<td>150</td>
</tr>
<tr>
<td>15- Lead by example.</td>
<td>9(7-10)</td>
<td>1(0.6)</td>
<td>37(24.7)</td>
<td>112(74.7)</td>
<td>150</td>
</tr>
<tr>
<td>16- Always give positive feedback when a team member performs well.</td>
<td>9(8-10)</td>
<td>0(0.0)</td>
<td>35(23.2)</td>
<td>116(76.8)</td>
<td>151</td>
</tr>
<tr>
<td>18- Show respect for the team members’ feelings.</td>
<td>10(8-10)</td>
<td>1(0.6)</td>
<td>23(15.2)</td>
<td>127(84.2)</td>
<td>151</td>
</tr>
<tr>
<td>20- Clearly understand where the team is going.</td>
<td>8(6-9)</td>
<td>6(4.0)</td>
<td>57(37.7)</td>
<td>88(58.3)</td>
<td>151</td>
</tr>
<tr>
<td>21- Encourage employees to work as a team.</td>
<td>9(8-10)</td>
<td>1(0.6)</td>
<td>24(15.8)</td>
<td>127(83.6)</td>
<td>149</td>
</tr>
</tbody>
</table>

*IQR – Interquartile range; n – number; % – percentage

The transformational leadership style variables express a ‘frequent practice’ in more than 50.0% of participants in 13 out of the 14 common behaviors to this type of leader, which demonstrates the presence and predominance of the transformational leadership style. Regarding the eight variables related to the transactional leadership style, five of them revealed an ‘usual practice’ superior to 50.0% of participants. In no variable the ‘non-existent practice or little practice’ and ‘frequent practice’ were above 50.0% of participants, which could highlight the behavior of this style of leadership as excluding or vividly present in the daily life of at least half of the nurses surveyed, when compared to the transformational leadership.

The objective of the qualitative phase was to investigate how the leadership was exercised by nurses within the university hospital. Since this is a macro project, was chosen the category that contributed to answer the guiding question and allowed the integration between quantitative and qualitative results: fragilities in the institutional contribution in the formation of leaders. This category demonstrated nurses’ difficulty in exercising leadership with transformational behaviors, and of being seen as leaders within the institution regardless of their role (coordination or assistance). At the same time, was observed the institutional fragility in developing this practice and seeing it as necessary for all nurses, while nurses perceive the importance of leadership for the profession.

The lack of stimulation in the management process. Because, for example, I think a leadership course should not be done just for referral nurses. It’s like I said, everyone is a leader! Then, why not offer it to everyone? In order to try to strengthen this sense of leadership? Sometimes it’s missing some of that. (E 61)

There is a referral nurse here, who is more in administrative tasks. They are having leadership...
training. They have had it, but we are in five nurses, one is attending this training, and our profession demands this, then we should have it. That’s missing. (E 10)

According to participants, the reason for the institutional low commitment with contributing to the formation of leaders is the lack of support and the difficulty of understanding the relevance of this training for employees:

In my view, the institution is not very concerned about the leader directly. They’re just worried about having a nurse-leader who guides that team, that sector. (E 7)

I see the implementation of leadership, more and more, being pruned in this process. (E 61)

The lack of institutional support for the formation of leaders may be related to a vertical and authoritarian management with the belief that this is the best way to reach the goals. Thus, no time/opportunity was provided for any questioning or negotiation, as some statements show:

I do not see much of the ideas, demands, let’s say, the orders, the flows, come from there to here. And we participate very little, very small really is the participation of the assistance team. (E 34)

And all information, all commands, they come vertically and kind of with no room for a conversation, a negotiation. Currently, I don’t think the coordination is exercising leadership coordination because I personally don’t feel involved in the process as a whole. (E 124)

The management performance focused on exercising leadership through behaviors based on vertical decisions was perceived as something to be avoided:

Often, we are not represented by our leadership, but it’s not because we have a vertical leadership that we will reproduce this model. (E 110)

Discussion

In the quantitative phase, the transformational leadership practice was identified frequently in the university hospital. However, when the qualitative phase sought to deepen and understand how this practice happened and was received, the results diverged.

Nurses have to be aware of the benefits derived from the continuous practice of transformational leadership, favor the relationship between employees and the achievement of larger goals in order to develop leadership and manage relationships equally and by taking into consideration their uniqueness. With a view to improving team satisfaction and ensuring a healthy working environment, the leader can motivate and increase performance at work and strengthen the clinical view, and these factors impact on the care provided.

The results also showed the management’s interference in the exercise of transformational leadership, since managers tend to adopt a vertical attitude, and decisions are often made without nurses’ involvement. This model is harmful and bad for the leadership practice. It can affect employees negatively by keeping them unmotivated, since institutions do not evaluate the actual conditions of their requests and offer no space for listening to those in the ‘frontline’.

On the other hand, institutions that invest in leaders’ training and support, can positively influence their employees, improve productivity and motivate them constructively. Situations opposed to this type of relationship may be linked to weaker institutional support for the formation of leaders, which opens space for authoritarian and vertical management. This is strongly influenced by traditional management models that are still common in many organizations.

In this study, the exercise of leadership was not perceived as something inherent to nurses’ professional practice, and both the institution and those in management and coordination positions (called referral nurses or nurse leaders by the interviewees) demonstrated difficulty with perceiving the leading role played by care nurses towards the nursing team.
However, in institutions that invest in developing nurses’ leadership potential regardless of their hierarchical position, professionals become prepared for confronting everyday situations in the hospital setting assertively, whether in resolution or management of conflicts.\(^{(18)}\)

Studies\(^{(20,21)}\) conducted in Germany and Australia highlight the importance of the applicability of leadership in hospital clinics routine and of implementing programs for improvement of leader-nurses. This result shows that leadership is primordial for the profession, and educational practices should be provided for strengthening leadership among nurses of the university hospital.

However, not all institutions have the organizational culture of valuing the formation of leaders. They may see the act of performing work with excellence and responding to the boss’s expectations, as the responsibility of employees who are interested in keeping their jobs. Other institutions may even accept the importance of this type of training, but because of possible extra expenses, do not consider it a priority.\(^{(22)}\) However, a study\(^{(8)}\) conducted in Japan on transformational leadership reveals that nurses are more committed when the institution invests in professional training.

In institutions that understand the importance of adopting and promoting a leadership style, there are gains, since nurses can have support from the team, encourage them and, together, all have conditions to face adverse situations. It is also essential that nurses engage with transformational leadership in order to improve team satisfaction, ensure a harmonious working environment that can strengthen clinical vision, and improve care delivery.\(^{(4,17,19)}\)

Transformational leadership is one of the styles that best matches the needs of an organization by enabling employees’ voluntary mobilization without causing pressure or anxiety, and achieving the stated purpose. In the case of Nursing, this means meeting the health needs of the population through an efficient care management.

Adopting the mixed-method design is beneficial, because it allows the exploration of more complex leadership issues. Quantitative data provide a detailed evaluation of the patterns of answers, while qualitative data offer a deep understanding of the phenomenon investigated from participants’ speeches, which contributes to better reach the study objective.

Limitations of this study were the adoption of a convenience sample and the difficulty with contacting people who participated in the qualitative phase, since they did not provide a telephone contact, or refused to take part in this phase. Another aspect is that it was performed only with nurses, since it would be vitally important to confirm if the transformational leadership exercised was perceived by other members of the nursing team.

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Collaborations

Ferreira VB collaborated in the study design, writing, analysis, interpretation of data, critical review of the article and final approval of the version to be published. Amestoy SC contributed in the study design, writing, analysis, interpretation of data, critical review of the article and final approval of the version to be published. Silva GTR and Felzemburgh RDM cooperated in the writing, analysis, interpretation of data, critical review of the article and final approval of the version to be published. Santana N, Trindade LL, Santos IAR and Varanda PAG participated in the relevant critical review of the intellectual content and final approval of the version to be published.

Conclusion

This research enabled the analysis of the exercise of transformational leadership in nurses’ practice in a university hospital. Initially, was identified the leadership style adopted at the institution. The
Transformational leadership in nurses’ practice in a university hospital

quantitative phase revealed the presence of transformational leadership in 13 out of the 14 behavioral variables on the subject, which presented frequent practice of over 50%, that is, more than 50% of participants adopted transformational behaviors at some point in their professional practice. However, difficulties have emerged in the exercise of transformational leadership, and they may be related to the lack of recognition of leadership as an inherent attribute of nurses’ practice regardless of their role. Institutional support in the formation of leaders is essential in order that team guidance is performed with competence. Anything that flees from this path may be a loss for the development of care based on quality, besides favoring a lower progress of the team with consequent reduction in the achievement of institutional goals. However, this lack of support may be linked to a vertical and hierarchical management, opposed to the precepts of transformational leadership, which seeks to transform the organizational culture and environment.

References

Assistive technologies for demented elderly: a systematic review

Tecnologias assistivas para idosos com demência: revisão sistemática

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Abstract

Objective: Analyze intervention studies using assistive technologies to help demented elderly with the execution of Basic and Instrumental Activities of Daily Living.

Methods: A survey was undertaken in the databases CINAHL, MEDLINE/PubMed, LILACS, SCOPUS, Scielo, Cochrane and Web of Science. The descriptors used were dementia/demência, aged/idoso, self-help devices/equipamentos de autoajuda. The methodological quality of the selected articles was analyzed by means of the Physiotherapy Evidence Database (PEDro) assessment tool.

Results: Four clinical trials were reviewed. The classification of the studies’ methodological quality ranged from low to moderate. The effects of the nighttime monitoring system and voice command technologies on the Basic and Instrumental Activities of Daily Living were assessed better.

Conclusion: The application of these technological devices offers positive results to support elderly people and caregivers in performing their daily activities. The use of simple voice prompts is cheaper, easier to manage and more efficient for demented elderly to perform Instrumental Activities of Daily Living.

Resumo

Objetivo: Analisar estudos de intervenção com tecnologias assistivas, empregadas no auxílio de idosos com demência, na execução das Atividades Básicas e Instrumentais de Vida Diária.

Métodos: Realizou-se levantamento, através das bases de dados CINAHL, MEDLINE/PubMed, LILACS, SCOPUS, Scielo, Cochrane e Web of Science. Utilizaram-se os descritores demência/demência, aged/idoso, self-help devices/equipamentos de autoajuda. Os artigos selecionados foram submetidos à análise de qualidade metodológica, na qual foi utilizada a escala de avaliação da Physiotherapy Evidence Database (PEDro).

Resultados: Quatro ensaios clínicos foram elencados para a revisão. Os estudos apresentaram classificação de baixa a moderada qualidade metodológica. As tecnologias de sistema de monitoramento noturno e de comando de voz apresentaram melhor avaliação em relação aos efeitos nas Atividades Básicas e Instrumentais de Vida Diária.

Conclusão: A aplicação desse aparato tecnológico fornece resultados positivos no apoio a idosos e cuidadores na execução das atividades diárias. As utilizações de comandos verbais simples possuem menor custo, manuseio simples e maior eficiência para execução de Atividades Instrumentais de Vida Diária de idosos com demência.

Keywords

Aged; Dementia; Self-help devices; Activities of daily living; Health of the elderly

Descritores

Idoso; Demência; Equipamentos de autoajuda; Atividades cotidianas; Saúde do idoso

Descritores

Ancião; Demência; Dispositivos de autoayuda; Actividades cotidianas; Salud del anciano

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Conflicts of interest: none to declare.
Introduction

Dementia is a process of brain cell degeneration that affects cognitive abilities. Currently, about 46.8 million people are living with this degeneration, which will double every 20 years, reaching 74.7 million in 2030 and 131.5 million in 2050.\(^{(1)}\) The global costs of dementia have increased 35% since 2010. The estimated spending amounted to US$ 818 billion in 2015 (more than one percent of the Gross Domestic Product) and about US$ 1 trillion by 2018.\(^{(2)}\)

Most costs of dementia are focused on care for essential functions related to the maintenance of functional capacity, which requires models of care and support for the elderly and their caregivers.\(^{(3)}\)

The symptoms of dementia can influence, compromise, and impede the performance of activities of daily living (ADLs), considered essential in maintaining functional capacity and quality of life. ADLs include Basic Activities of Daily Living (BADLs), Instrumental Activities of Daily Living (IADLs) and Advanced Activities of Daily Living (AADLs).\(^{(4,5)}\)

BADLs are related to self-care (feeding, bathing, grooming, mobilizing, walking, and maintaining control over one’s physiological needs); IADLs indicate the capacity to be independent (using means of transportation, manipulating medicines, using the telephone, preparing meals, and taking care of finances); while AADLs are activities that are carried out independently but cannot be generalized because they involve individual social and economic conditions.\(^{(4,5)}\)

In this context, the importance of using actions, strategies, and technologies that can assist caregivers and the elderly in performing BADLs and IADLs is highlighted.\(^{(5,6)}\)

Among the technologies, Assistive Technology (AT) is used to maintain or improve the functional ability of disabled persons and includes the use of devices, equipment, and processes.\(^{(7,8)}\) In addition, it has the potential to improve the quality of life, managing risks and customizing support.\(^{(9)}\)

Studies on assistive technologies from the perspective of knowledge production are useful and necessary to promote the quality of life of elderly demented people. Thus, the objective was to analyze interventions studies that use assistive technologies to help demented elderly in the execution of BADLs and IADLs.

Methods

Systematic Literature Review (RSL), carried out in accordance with the recommendations of the Cochrane Systematic Review of Interventions manual, which establishes: formulation of the question and selection of inclusion criteria, search for studies, selection of studies and data collection, bias risk assessment of included studies, data analysis, presentation of results, interpretation of results and conclusions.\(^{(10)}\)

Formulation of the question and choice of criteria

The formulation of the question was defined through the PICO strategy (Population, Intervention, Comparison, Outcomes (results)).\(^{(11)}\) Thus, the study population corresponds to demented elderly (P), the intervention studied is the use of assistive technologies (I). In this study, there was no comparison between standard intervention and other interventions (C) and the expected results are the effects of the AT to support the performance of BADLs and IADLs (O). Thus, the guiding question of the study was: for demented elderly (P), which effective assistive technologies (I) were used to help in the performance of the Basic and Instrumental Activities of Daily Living (O)? The inclusion criteria were articles reporting on experimental studies, without any time or language restriction. The exclusion criteria were observational, quasi-experimental, and review studies.

Search, identification of articles, selection, and collection of data

Two researchers paired up to execute the search, evaluation, selection, characterization, and analysis of the articles. They met for consensus in case of disagreement. The information survey followed the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).\(^{(12)}\) The data were collected from...
January to March 2018. A comprehensive survey was carried out through the following databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL); National Library of Medicine (MEDLINE / PubMed); Latin American and Caribbean Center for Information and Health Sciences (LILACS), SCOPUS, Scientific Electronic Library Online (Scielo), Cochrane, and Web of Science. We used the controlled and fixed descriptors present in both classifications: Health Sciences Descriptors (DeCS) and Medical Subject Headings of US (MeSH), respectively: dementia/demência, aged/idoso, self-help devices/equipamentos de autoajuda. We also used the uncontrolled descriptor “assistive technology” and the Boolean operator “AND” for the combination of terms. The search strategies performed in the CINAHL, MEDLINE / PubMed, SCOPUS, Cochrane and Web of Science databases were: Dementia AND Aged AND “Self-help devices”; Dementia AND Aged AND “Assistive technology”. In LILACS and Scielo, the combinations were: Dementia AND Elderly AND “Self-help equipment”; Dementia AND Elderly AND “Assistive Technology”.

**Bias risk assessment of included studies**

The selected articles were submitted to methodological quality analysis using the Physiotherapy Evidence Database (PEDro) tool for the evaluation of clinical trials. The PEDro scale consists of assisting and identifying 11 evaluation criteria (1. eligibility and origin of study participants 2. random distribution of study participants 3. secret allocation 4. similarity to starting point of the study 5. blinding of subjects 6. blinding of therapists; and 7. blinding of evaluators; 8. monitoring more than 85% of participants; 9. analysis by intention to treat; 10. intergroup statistical analysis; and 11. precision and variability measures.), the internal validity (criteria 2-9) of the randomized controlled trials and the presence of sufficient statistical information to interpret the results(criteria 10-11). The score ranges from 0 to 10 points, according to the items classified as satisfactory between criteria 2 to 11. Criterion 1 is not included as the scale does not evaluate the external validity of the clinical study.

**Presentation, analysis, and interpretation of results**

The following data were extracted from the final sample: authors, year of publication, sample characteristics, types of AT used and outcomes relevant to the use of the BADLs and IADLs for the demented elderly. The results are presented in tables, with descriptive analysis and focus on the technologies used, characteristics and effectiveness.

**Results**

In figure 1, the trajectory is displayed that was followed in the search, selection, eligibility and inclusion of the evidence related to the use of AT to support the execution of BADLs and IADLs.

![Figure 1. Identification and selection flow chart of articles for systematic review.](image-url)
In LILACS and SciELO, searches resulted in no articles. The searches in CINAHL resulted in 82 articles, 65 of which were excluded (49 did not respond to the study object, 3 had no available abstract, 13 were repeated) and 17 were selected. After reading the full versions, all 17 articles were excluded. In Scopus, 149 articles were found, 98 of which were not suitable for the purpose of the study, four publications had no available abstract, 32 were repeated and 15 were selected for full reading. Only one was included in the sample. In the Cochrane Library, of the 11 articles found, four were excluded because they were duplicated and five because they were not related to the study theme. Two were selected for full reading, but none of the selected articles was included in the sample. In the Web Of Science database, of the 46 papers found, 10 were selected, four were repeated and four were excluded because they were not randomized experimental studies, resulting in two studies included in the sample. After completing the eligibility process, four articles were included to summarize the data, as displayed in chart 1.

The articles presented heterogeneity in the sample, in the methodological rigor and in the assessment of the intervention effects of the, preventing clustering. As regards the verification of methodological rigor by the PEDro scale, the articles scored as follows: A1 - 6 points, A2 - 5 points, A3 - 6 points and A4 - 6 points, being classified as low to moderate methodological quality and compromised internal validity. Regarding the sample characteristics of the articles, A1 was performed with pairs of demented elderly people and informal caregivers; in EG, the mean age was 78.45 years for the elderly and 61.35 years for the caregivers. In CG, the age of the elderly and caregivers was, respectively, 80.75 and 63.37 years. In EG, 42% of the elderly and 73% of the caregivers were female whereas, in the CG, 52% of the elderly and 85% of the caregivers were women. In relation to cognition, the elderly had moderate levels of dementia, with a mean MMSE score of 13.83 points (Chart 2). In A2, the mean age in the CG was 73.95 years, the majority was female (78.58%) and the mean MMSE score was 27.75. At the same time, the mean age in the EG was 75.09 years, the majority was female (57.78%) and the mean MMSE score was 26.10. It is emphasized that the study initially included healthy elderly individuals to assess the influence of the AT on the disease evolution, ending after ten years with 225 participants with moderate cognitive impairment. In A3, a study performed with pairs of elderly people.

### Chart 1. Studies included in SLR, distributed by sample and intervention characteristics

<table>
<thead>
<tr>
<th>Articles</th>
<th>References</th>
<th>Countries</th>
<th>Samples</th>
<th>Inclusion criteria</th>
<th>Assistive technologies</th>
<th>Activities of daily living</th>
<th>Usage periods</th>
</tr>
</thead>
</table>
The ATs have promising potential for demented elderly care, permitting advances in the care and reduction of the caregiver’s burden.\(^{(18,19)}\) The sample profile of the studies corresponds to the sociodemographic profile of the elderly from a global perspective. It is relevant to point out that two Randomized Clinical Trials (RCTs) included the elderly - caregiver dyad in the sample. In this sense, research indicates the importance of the caregiver’s preparation and inclusion in the evaluation and training process on the use of the AT. The inclusion of the caregiver in research involving elderly people with dementias provides benefits to the patient, caregiver, and researcher, as it grants additional value to the interventions.\(^{(20)}\)

It is emphasized that ATs should be proposed in the prodromal stage of dementia, as it may help to promote independence and maximize the quality of life, being adaptable to the dementia phases.\(^{(21)}\)

The home environment was used in most of the studies and the importance of applying the technologies at home is underlined. There is a growing body of evidence suggesting the potential of technologies to support the care of elderly people with

### Chart 2. Description of interventions concerning assistive technologies, variables measured and outcomes

<table>
<thead>
<tr>
<th>Articles</th>
<th>Assistive technologies</th>
<th>Variables measured</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1,(^{(14)})</td>
<td>Home monitoring system with domestic safety system platform, bed occupation sensors and alerts.</td>
<td>Caregiver satisfaction; Reliability.</td>
<td>System assessed as extremely reliable. No errors or false alarms. No adverse events caused by system failures. Subjects were classified as “highly satisfied” with the use of the technology. Nine nighttime events took place, three of which in EG, two falls and one nighttime leave. The nighttime events happened due to improper handling and the caregiver who did not awake when the alarms went off.</td>
</tr>
<tr>
<td>A2,(^{(15)})</td>
<td>Verbal prompts in the form of reminders or motivation to help in the performance of financial control and medication management activities, activated when the elderly behaves unable to proceed with the activity.</td>
<td>Usage efficacy.</td>
<td>The group with cognitive impairment achieve improvements in the performance of medication management and financial control activities. The performances of the subjects who used the technologies were superior to the subjects in the control group. The technology demonstrated improvements and maintenance in the performance of daily tasks.</td>
</tr>
<tr>
<td>A3,(^{(16)})</td>
<td>Multifunctional system Rosetta, resulting from the integration of three systems: “Elderly Day Navigator (EDN)”, including a daily organizer, telephone agenda with pictures, simplified telephone call system and Global Positioning System (GPS); “Early Detection System (EDS)”, registering the elderly’s behavioral pattern through the analysis of sensor signals, such as sleep-wake rhythm, mobility and meal preparation; “Unattended-Autonomous Surveillance – Advanced Awareness and Prevention System (UAS-AAPS)”, detecting situations through cameras and triggering alarms in case of a period of inactivity, such as a fall.</td>
<td>System utility; Easy use.</td>
<td>Rosetta assessed as “highly useful” and potentially resulting in feeling of greater safety in care provision. Informal caregivers indicated signs of decreased work burden. Three informal caregivers described feelings of trust and safety. Formal caregivers considered the system complex and hard to work with. EDN: considered useful by the caregivers and demented subjects. Classified as hard to manage. Different technical problems of the system were reported and informal caregivers mentioned dissatisfaction with the layout of the access portal. Caregivers were unable to use the GPS function due to technical errors. EDS: caregivers considered it useful to monitor the demented subjects’ ADLs. The technology was considered hostile and hard to manage. Different errors occurred when accessing the portal. UAS-AAPS: participants indicated that the system was very useful and granted a feeling of safety. Presented false alarms that were considered bothersome and three fall events when the system failed and the alarm did not go off.</td>
</tr>
<tr>
<td>A4,(^{(17)})</td>
<td>Robotic navigation assistance innovation called MOBOT, offering integrated navigation system with audio-guided suggestions.</td>
<td>Performance on two routes; Success rate; Conclusion time; Number of stops; Gait speed; Distance walked.</td>
<td>Route 1: no significant associations were found between success rate and use of the device. For the conclusion and stop times, significant interaction was found between navigation assistance and cognitive condition. The participants using the device presented shorter conclusion and stop times. No significant effect was found on the number of stops, gait speed and distance walked. Route 2: no significant associations were found between success rate and use of the device. For the conclusion time and the number of stops, significant interaction effects were observed. The participants using the technology presented shorter conclusion time, fewer stops and shorter distance walked. No significant effect was found on the gait speed and stop time.</td>
</tr>
</tbody>
</table>

**EG** – Experimental Group

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\[655\]
dementia at home and thereby improve the caregivers’ quality of life, besides reducing care and early institutional care costs.\(^{(22)}\)

The nighttime monitoring system is a potential solution as it permits reducing the risk of falls, allows a greater rest time for the caregiver, decreases the burden and reduces the probability of institutionalization.\(^{(23)}\) Nevertheless, studies with greater methodological rigor are suggested, as well as the enhanced measuring of nighttime events, such as injuries due to falls and nocturnal leaves.\(^{(14)}\)

Regarding the use of interventions with verbal prompts, a study emphasizes that the intervention with the greatest potential to improve the performance of daily activities in demented people is task-oriented training.\(^{(24)}\) The research came with limitations though, due to the fact that the interventions with this technology are not promoted in the home environment. Also, the technology provided the verbal prompts in case the participant did not know the answer or took time to answer, but not in case of incorrect answers, characterizing a technological restriction that needs improvement.\(^{(15)}\)

Monitoring technologies alleviate concerns about the safety of patients in periods of caregiver absence, with the objectives of ADL monitoring, surveillance in the event of falls and the detection of changes in health conditions.\(^{(25)}\) Hence, the study that evaluated the effects of the monitoring system demonstrated a significant reduction in the caregiver burden after the use of the AT.\(^{(26)}\) In the study that used monitoring technologies, however, the main limitation presented was system instability and poor functioning, with several technical failures. Also, the fact was highlighted that the samples are reduced, justified by the high cost of installing the technologies and the scarce budget.\(^{(16)}\)

Regarding the localization systems, it is verified that the use of GPS increases the ability of the elderly to move independently, promoting a reduction of the dyad’s stress.\(^{(27)}\) Despite the caregivers’ preparation to manage the technologies, many indicate difficulty to implement them on a daily basis, mainly due to the flaws they present, which reinforces the need for system improvements.\(^{(28)}\)

Regarding the use of robotic navigation aids, the findings support the assertion that they effectively support the orientation and movement of demented people and are able to reduce the task performance time. Nevertheless, as the study included in the SLR associated the use of the robotic navigation aid with verbal direction prompts, the effectiveness of the contextual navigation prompts or not was questioned, as this was not evaluated separately in the research.\(^{(17)}\)

The limitations of this study include the particularities of the method adopted, considering the limited number of experimental studies published in the databases consulted. It should be taken into account that none of the studies included describes the blinding process of the subjects, therapists, and evaluators.

Nevertheless, researchers underline the need for further research, looking for cost-effective solutions and for a more diverse audience.\(^{(29)}\)

### Conclusion

Assistive technologies can be applied to improve the quality of life of demented elderly. The application of this technological apparatus provides positive results, in the support to the elderly and their respective caregivers, in the execution of BADLs and IADLs. Given the clear aging process, the number of people with dementia, the costs involved in the care and the paramount role of nursing in the care process, in the near future, the assistive technologies will be present in the daily routine of the nursing team, concerning both their use and development. It is emphasized that nursing plays a fundamental role in the promotion, protection, and recovery of health by coordinating care plans, with an outstanding role in the implementation of AT. Evidence shows that monitoring presents satisfactory results but needs improvement. The use of verbal prompts constitutes a cheaper technology that is simple to handle and more efficient for the execution of IADLs of demented elderly. Robotic navigation devices are beneficial, but need further investment in research to assess their effectiveness.
Given the lack of experimental studies with AT and their importance for demented elderly and their caregivers, the development of new research on this theme is encouraged.

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References


Clinical simulation and training for Advanced Nursing Practices: an integrative review

Simulação clínica e treinamento para as Práticas Avançadas de Enfermagem: revisão integrativa

Simulación clínica y capacitación para las prácticas avanzadas de enfermería: revisión integrativa

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Cristina Mara Zamariolli1
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Abstract
Objective: Analyze the contribution of clinical simulation use as a teaching and training strategy of advanced nursing practices.

Methods: An Integrative Review was undertaken through a search in the databases Embase, LILACS, PubMed, and Scopus, using the descriptors and key words Advanced practice nursing AND simulation.

Results: Sixty-eight articles were identified; after the exclusion of repeated articles and studies that did not answer the guiding question, 11 articles were analyzed. The data evidenced that simulation permitted an in-depth investigation to assess the students' performance in advanced practice nursing, concerning the approach of the patient and leadership; this method helped the student to take responsibility in decision making, to guide patient care, direct the team, interact with the family, besides demonstrating leadership, prioritization, delegation, collaboration and professionalism.

Conclusion: The studies analyzed evidenced that clinical simulation contributed to the teaching of advanced practice nursing, enhancing the clinical awareness and competency building for advanced clinical management, leadership and teamwork skills; most studies involved postgraduate students.

Resumo
Objetivo: Analisar a contribuição do uso da simulação clínica como estratégia para o ensino e treinamento das práticas avançadas de enfermagem.

Métodos: Foi realizada uma Revisão Integrativa e feito as buscas nas bases de dados Embase, LILACS, PubMed, CINAHL e Scopus, com os descritores e palavras-chave Avançadas práticas de enfermagem AND simulação.

Resultados: Foram identificados 68 artigos; após serem excluídos os duplicados e os que não respondiam à questão norteadora, foram analisados 11 artigos. Os dados evidenciaram que a simulação permitiu um exame aprofundado para avaliar o desempenho dos alunos nas práticas avançadas em relação ao abordagem do paciente e liderança, este método auxiliou o aluno a assumir responsabilidade nas tomadas de decisões, a conduzir os cuidados com o paciente, a direcionar a equipe, interagir com a família, além de demonstrar liderança, priorização, delegação, colaboração e profissionalismo.

Conclusão: Os trabalhos analisados evidenciaram que a simulação clínica contribuiu para o ensino das práticas avançadas de enfermagem aumentando a consciência clínica e o desenvolvimento de competências para manejo clínico avançado, habilidades de liderança e de trabalho em equipe; a maioria dos trabalhos foram realizados com pós-graduandos.

Resumen
Objetivo: Analizar la contribución del uso de simulación clínica como estrategia para el ensino y capacitación de las prácticas avanzadas de enfermería.

Métodos: Se realizó una revisión integrativa con búsquedas en las bases de datos Embase, LILACS, PubMed, CINAHL y Scopus, utilizando los descritores y palabras clave Avanzadas práticas de enfermería AND simulación.

Resultados: Se identificaron 68 artículos; luego de excluirse los duplicados y los que no respondían a la pregunta orientadora, fueron analizados 11 artículos. Los datos evidenciaron que la simulación permitió un examen profundizado para evaluar el desempeño de los alumnos en las prácticas avanzadas respecto al abordaje del paciente y el liderazgo; este método ayudó al alumno a asumir la responsabilidad en la toma de decisiones, a encargarse de la atención del paciente, a dirigir al equipo, interactuar con la familia, a demostrar liderazgo, priorización, delegación, colaboración y profesionalismo.

Conclusión: Los trabajos analizados evidenciaron que la simulación clínica contribuyó a la enseñanza de las prácticas avanzadas de enfermería, aumentando la consciencia clínica y el desarrollo de competencias para manejo clínico avanzado, habilidades de liderazgo y de trabajo en equipo. La mayor parte de los trabajos fue realizada con alumnos de posgrado.

How to cite:
Introduction

Advanced Practice Nursing (APN) constitutes a look at the professional practice that is expanding, both in terms of the number of people and areas of practice. The concept of ANP arose in the early twentieth century in the United States, in response to a series of sociopolitical events that generated new demands on nursing professionals.\(^1,2\)

Similarly, experience in the development of APN in different countries indicates that its implementation occurred in response to a need to reduce costs, improve access to health care, and reduce the waiting time of health service users.\(^3\) The incorporation of APN in these countries required drastic changes in the legislation and regulation of professional practice though, as well as transformations of scenarios for professional action and changes in the characteristics of nurses’ training.\(^4\)

Currently, the way APN is carried out throughout the world varies among the countries and their respective legislations, and places such as the United States and Canada present this well-founded practice. In Brazil, on the other hand, the agreement for its implementation and creation of strategies to train nurses for APN started only in 2016.\(^3,5-7\)

Because of this varied state of development and the range of practices involved, defining the term “Advanced Practice Nursing” is a complex task.\(^3,5\) The different definitions rest on the considerations of the International Council of Nursing (ICN), in particular as regards the peculiarities of each context.\(^5\)

According to this Council, the concept of APN involves a specialized knowledge base, the gaining of skills such as critical thinking and the ability to make complex decisions and technical skills. In addition, nurses are recommended to obtain a master’s degree in order to be able to exercise APN.\(^6\) The attributes of this concept involve clinical expertise, leadership, autonomy and role development, the latter recognizing and presenting both the extension and expansion of the nurse’s functions.\(^8\)

The contributions of APN are well documented and internationally acknowledged, the benefits being focused on increasing the quality of care provided to health service users, expanding the access of users to health resources and coverage, cost reduction, strengthening of nursing work, obtaining good outcomes from nurses’ activities, qualification of health promotion practices, disease prevention and rehabilitation, in addition to being associated with high satisfaction levels of the users these professionals cared for.\(^4,9,10\) In addition, APN has the potential to contribute significantly in the provision of quality care to patients and families, whether in acute care or in the community.\(^11\)

The nature of APN, as structured by ICN, includes the following elements: integration of research, education, care practice and management; high degree of professional autonomy for independent use of care practice, case management/own case load, advanced health assessment skills, decision making and diagnostic reasoning, acknowledged advanced clinical skills, provision of consulting services to health providers, planning, implementation and evaluation of health programs and being recognized as the first point of contact for patients.\(^6\)

The results obtained with the activities developed by advanced practice nurses showed an improvement in patients’ perceived health and functional status, as well as glucose control, blood pressure and control of dyslipidemia, decreased visits to the emergency department, hospitalization and mortality rates. Also, reduction of cesarean section, episiotomy, labor analgesia and perineal lacerations and reduction of the cost of care.\(^12\)

Considering the dimension of the concept of APN, the Brazilian trend to consider this model of professional nursing care and the skills required from nurses for the actual establishment of this practice, investments are crucial, especially in the training of these professionals to provide for the professionalization of advanced practice nursing.\(^13,14\)

The recommendations of the International Council of Nurses (ICN) reinforce the importance of investments in the qualification of nurses’ advanced practice training, by delimiting that professional training be obtained in postgraduation programs recognized for this function.\(^4,6\) As a differen-
tial of the curricula focused on APN training, the incorporation of clinical simulation stands out, in the training process as well as in the formative and summative evaluations.\textsuperscript{(15)}

Simulation can be understood as an imitation or representation of a simple or complex act or process. Clinical simulation, according to Oliveira, Prado and Kempfer,\textsuperscript{(16)} “comprises strategy, technique, process and tool. To implement it, more than effective simulators are needed; their use needs to be adapted to the simulation method”. In clinical situations, the simulations can contain different goals, including education, evaluation, research and patient safety, beyond the student’s integration into the health system. Besides the intended improvement of health service efficacy and efficiency,\textsuperscript{(17)}

For its application in teaching, low, medium or high-fidelity mannequins (patient simulator) can be used, people playing the patient’s role (simulated patient), virtual learning objects (educational software), mixed methods and role-play.\textsuperscript{(16)}

The simulated clinical experience can offer greater support to clinical learning, guiding the simulated activities towards specific learning needs and in performance assessment.\textsuperscript{(18)} In addition, it permits the application of clinical judgment and critical thinking towards successful diagnostic and therapeutic reasoning, offers another way of teaching clinical management in primary health care programs, increases the student’s knowledge and confidence in the management of a range of health problems;\textsuperscript{(15,19)} its advantages characterize clinical simulation as an important tool for the teaching and training of skills related to APN. Hence, the objective in this study was to analyze the contribution of using clinical simulation as a strategy for teaching and training advanced nursing practices.

Methods

The literature review is a type of research that synthesizes results from earlier studies, and thus provides conclusions within a specific theme.\textsuperscript{(20)}

First, in line with the recommendations of the Joanna Briggs Institute (JBI)\textsuperscript{(21)}, for the items title description, objective, research question, search strategies, inclusion criteria, data extraction and synthesis, the protocol of this review was elaborated (Chart 1). Two researchers carried out the searches separately; then, the results were compared to minimize disagreements.

**Chart 1.** Integrative review protocol: use of clinical simulation in teaching and training Advanced Nursing Practices

<table>
<thead>
<tr>
<th>Title: The contribution of clinical simulation in the teaching and training of Advanced Nursing Practices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Objective: Identify and evaluate the use of clinical simulation as a strategy for the teaching and/or training of advanced nursing practices.</td>
</tr>
<tr>
<td>2) Guiding question: How has clinical simulation been used for the teaching and/or training of advanced nursing practices?</td>
</tr>
<tr>
<td>3) Search strategies</td>
</tr>
<tr>
<td>3.1. Database</td>
</tr>
<tr>
<td>Database 1: Embase</td>
</tr>
<tr>
<td>Database 2: LILACS</td>
</tr>
<tr>
<td>Database 3: PubMed</td>
</tr>
<tr>
<td>Database 4: CINAHL</td>
</tr>
<tr>
<td>Database 5: Scopus</td>
</tr>
<tr>
<td>3.2. Search for descriptors and key words – executed in March 2018</td>
</tr>
<tr>
<td>Database 1: Embase Advanced practice nursing (Emtree) AND simulation (Emtree) = 10 articles</td>
</tr>
<tr>
<td>Database 2: LILACS Práticas avançadas em enfermagem (descriptors) AND simulação (descriptors) = 0</td>
</tr>
<tr>
<td>Database 3: PubMed Práticas avançadas em enfermagem (words) AND simulação (words) = 0</td>
</tr>
<tr>
<td>Database 4: CINAHL Advanced practice nursing (Mesh Terms) AND simulation (Mesh Terms) = 0</td>
</tr>
<tr>
<td>Advanced practice nursing (Text words) AND simulation (Text words) = 26 articles</td>
</tr>
<tr>
<td>Database 5: Scopus Advanced practice nursing (Index Terms) AND simulation (Index Terms) = 14 articles</td>
</tr>
<tr>
<td>4) Inclusion criteria:</td>
</tr>
<tr>
<td>Population: people who used clinical simulation for the teaching and/or training of advanced nursing practices;</td>
</tr>
<tr>
<td>Intervention: use of clinical simulation for teaching and/or training of advanced nursing practices;</td>
</tr>
<tr>
<td>Comparison: use of other strategies for teaching and/or training advanced nursing practices;</td>
</tr>
<tr>
<td>Results: background for appropriate conducts and decision making;</td>
</tr>
<tr>
<td>Studies: original articles and theses presenting the use of simulation for teaching and/or training of advanced nursing practices;</td>
</tr>
<tr>
<td>5) Data extraction:</td>
</tr>
<tr>
<td>Two researchers fully read the selected studies, when information was extracted on the study design, participants, definition of advanced practice, context and clinical simulation. The disagreements between the extracted results were solved by consensus, including the presence of a third researcher. The extracted information was arranged in a database.</td>
</tr>
<tr>
<td>6) Information synthesis:</td>
</tr>
<tr>
<td>Each study was analyzed to identify the use and contribution of clinical simulation to the teaching and/or training of advanced nursing practices. The goal is to evaluate how simulation is used in advanced nursing practices.</td>
</tr>
</tbody>
</table>

The selection process of the studies was based on the initial reading of the titles and abstracts, studies related to the theme being fully read. When they answered the research question, they were included in the study. This process has been illustrated in figure 1.
Clinical simulation and training for Advanced Nursing Practices: an integrative review

Results

In this integrative review, 11 articles were analyzed that complied with the criteria established in the protocol; all were written by nurses and published between 2009 and 2017.

As for the articles’ indexation in the databases, seven (63.3%) are indexed in PubMed, three (27.2%) in CINAHL and one in Scopus (9.0%). In the other databases, LILACS and Embase, no articles were found that answered the review question. Concerning the country of origin, ten articles (90.9%) were developed in the United States and one in Singapore (9.1%).

About the research design of the selected articles, three (27.7%) are qualitative studies, two (9.0%) is an experience report, one (9.0%) is a quasi-experimental study, one (9.0%) descriptive, one methodological (9.0%) and two (18.1%) randomized and controlled clinical trials.

In chart 2, a synthesis of the studies included in the review is displayed.

The highest concentration of articles (83.3%) was in nursing education journals, evidencing the importance of simulation for learning advanced practice nursing in teaching. The simulation was used to teach and evaluate the specific skills of APN nurses, using dramatic (with standardized patients) and robotic simulations (with high- and medium-fidelity simulators). The simulations were used to train and assess nurses for communication skills, specific for critical care, emergency and medical clinical situations. Of the 11 articles included, ten (90.9%) discussed the use of simulation for teaching and skills training with postgraduate nurses; only one study was focused on the training of advanced practical skills for undergraduates, which supports the definition of advanced practice nursing established by ICN. Furthermore, among the studies analyzed, the definition of APN was pointed out in only two articles (18.2%). The simulation was performed in different scenarios with clinical cases in several specialties, such as gastrointestinal and neurological, neonatal intensive care, postoperative pneumonectomy, chest pain and cardiac evaluation, mechanical ventilation and home care.

As for the strategies used in the simulations, in six (54.5%) articles, actors were used in the roles of patients during the scenarios and, in five (45.45%), high-fidelity mannequins were used.

Most of the simulations were evaluated based on what the participants mentioned during the debriefing. In two studies, after the scenario, pre-established guiding questions were asked to determine the contributions of the simulation. In seven studies, the debriefing was essential to assess clinical judgment, cognitive, procedural and leadership skills. The assessment of cognitive knowledge before and after the scenario was performed in two studies, while another evaluated self-satisfaction; and another, physical examination and self-confidence. In view of this, among the studies analyzed, the contributions of simulation to APN were related to the increase of knowledge; development of cognitive, procedural and clinical judgment skills; leadership; collaboration in teamwork and communication skills. This evidences that simulation is a strategy to be used for the teaching and training of Advanced Practices in Nursing in several specialty areas.
The articles studied highlighted clinical simulation as an effective strategy for the teaching and evaluation of APN in the past ten years. This strategy allows the individual to experience a situation similar to the practice through laboratory activities, which stimulates the use of clinical reasoning, decision making and team management.

A study conducted with postgraduate nursing students evaluated the care management competencies, revealing that the simulation allows a more in-depth examination to assess students’ performance in advanced practices in relation to patient approach and leadership; pointed out that the student was able to take responsibility in decision making and patient care, directed the team, interacted with the family and demonstrated lead-

**Discussion**

The articles studied highlighted clinical simulation as an effective strategy for the teaching and evaluation of APN in the past ten years. This strategy allows the individual to experience a situation similar to the practice through laboratory activities, which stimulates the use of clinical reasoning, decision making and team management.
ership, prioritization, delegation, collaboration and professionalism. (29)

The same happened in another study from Singapore, also involving graduate students, in the evaluation of the physiological, neurological and gastrointestinal alterations in severe patients, represented by actors; the participants affirmed that this is a very useful strategy, mainly for the development of data collection and communication skills and for preserving realism, as the actors acted similarly to the real patients. (24)

The use of actors in simulation of advanced practices has been effective, not only for the nurse acting in the scenario, but for the actors, as the learning acquired during the scene is valid. Nursing undergraduates who participated in a simulation interpreting patients reported that the experiments were successful, providing preparation for clinical practice. (25)

Simulators are often used in clinical simulations. With the purpose of developing a simulation scenario of advanced practice nursing, postgraduate students in the advanced health assessment course used SimMan®, a high-fidelity dummy, for primary care, in which the student should evaluate if the chest pain was cardiac or non-cardiac. In each simulation, three students participated and the participants reported the feeling of being in a real situation. (27) The use of high-fidelity simulation enhances patient safety and favors the teaching of advanced nursing practice. (34)

Another study, with the objective of evaluating technical and non-technical skills in advanced nursing practices in cancer patients, used a simulator. Participants reported being an excellent way to provide real-time scenarios. (30)

The Harvey cardiology simulator, a remote-controlled torso with cardiopulmonary sounds, was used to evaluate an educational intervention. Therefore, postgraduate students received a CD-ROM with sounds of cardiologic alterations; before going to the simulated scenario, they took two pre-tests evaluating cardiovascular cognitive knowledge, physical assessment skills and a self-confidence questionnaire. Two weeks after the educational intervention, each participant answered two post-tests with the same variables. The study demonstrated that this intervention increased self-confidence in the participants’ ability to perform cardiovascular assessment and clinical reasoning skills (p < 0.05) as measured by the Cardiopulmonary Assessment Skills Verification instrument. (29)

The study by Corbridge et al. (2010) (32) compared simulation and online class in teaching students advanced nursing practices in the use of mechanical ventilation. The students in the control group attended an online class, while those in the experimental group made use of the simulation; this group, at the end of the activity, presented greater student satisfaction (p < 0.0001) with the learning method. The same result was also obtained in the study by Richardson et al. (2009), (25) when comparing simulation with distance learning, as in Tiffen, Graf, Corbridge (2009), (33) who compared it to traditional classes.

The heterogeneity of the scenarios used in the simulations demonstrates that, despite being initially developed for primary care services, advanced practice nursing has been used in more complex scenarios, which emphasizes the expansion and extension of activities, characteristics of these practices. (8)

It is important to mention that only two of the 11 papers analyzed presented some definition of APN. This data is relevant when considering the complexity of this concept and its variations around the world. One American study points to APN as the practice in which nurses take on the direct or indirect management of patient care, which can be developed by nurse practitioners, clinical nurse practitioners, obstetric nurses. (27) The other study, also North-American, does not clearly describe APN, but presents it as a deliberate practice, a teaching method based on evidence and on the processing of information and behavioral theories for skills gaining and maintenance. (32)

Simulation is an efficient way used in continuing education and it is important for nursing staff to remain competent in high-risk, low-frequency procedures. (35) Along with clinical simulation, the OSCE (Objective Structured Clinical Examination) tool is
a viable, acceptable and valuable strategy as an assessment method to ensure that Advanced Practice Nursing students find the skills needed for teaching and evaluation, commonly used in nursing. (31)

In view of the complexity of APN, simulation shows itself as an appropriate tool for teaching these skills, being dynamic, providing a real view of clinical situations within a protected and controlled environment.

This review is limited by the restricted number of studies with research designs that provide results with strong evidence, besides including studies with reduced information as to the number of participants included. The findings presented are able to answer the guiding question, to know how clinical simulation has been used for teaching and/or training of advanced nursing practices.

Conclusion

The study aimed to identify how the use of clinical simulation contributes as a strategy for teaching and training advanced nursing practices through an integrative literature review. Clinical simulation contributed to the teaching of APN with better clinical awareness, development of advanced clinical management competencies, including leadership and teamwork skills. In addition, it contributed to the filling of learning gaps, stimulated the use of scientific evidence and the development of clinical reasoning. Thus, it was evidenced that simulation is an effective teaching tool and enhances student safety during care, which in turn favors the teaching of advanced practice nursing. The precise definition of APN remains a challenge, as the concept needs to be better explored in its different activity areas, in various countries, thus contributing to the development of the practice.

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References

Clinical simulation and training for Advanced Nursing Practices: an integrative review


Safety culture in the organ donation process: a literature review

Cultura de seguridad en el proceso de donación de órganos: una revisión de la literatura

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Aline Lima Pestana Magalhães¹
Ana Graziela Alvarez¹
Alessandra Antunes Catarina¹
Sabrina Regina Martins¹
Saulo Fábio Ramos¹
Sibele Maria Schuantes Paim¹

Abstract

Objective: To evaluate the development of a safety culture in the organ donation and transplantation process as it is available in the scientific literature.

Methods: An integrative literature review was conducted in the CINAHL, LILACS, PubMed, Scopus, and Web of Science databases, and the electronic library ScELO, from 2012 to 2016, using a syntax of keywords and descriptors for each database; fourteen articles were selected for analysis.

Results: One thousand six hundred and fifty nine studies were found, 33 complete articles were read, and 14 studies were selected for analysis. The information obtained was analyzed critically and grouped into two categories. Category 1 – patient safety culture for the use of medications in the post-transplant period: the involvement of the multidisciplinary team is essential in the orientation process for hospital discharge, and the main factors related to errors in the use of medicines. Category 2 - safety culture in the transplant units: issues related to patient safety of those undergoing transplantation in the pre- and intra-operative periods.

Conclusion: This study showed that the issue of a culture of safety in the donation and organ transplantation process is incipient in the literature; well-designed studies related to the culture of patient safety are necessary for all the stages of the donation and transplant process.

Resumen

Objetivo: Evaluar el desarrollo de una cultura de seguridad en el proceso de donación de órganos y trasplantes en la literatura científica.

Métodos: Se realizó una revisión integrativa de la literatura a partir de bases de datos CINAHL, LILACS, PubMed, Scopus, Web of Science y ScELO, entre 2012 y 2016, con sintaxis de palabras-claves y descritores para cada base, seleccionando 14 artículos para análisis.

Resultados: Se encontraron 1.659 estudios, 33 artículos completos fueron leídos, y 14 estudios fueron seleccionados para análisis. La información obtenida fue analizada críticamente y agrupada en dos categorías. Categoría 1 – cultura de seguridad para el uso de medicamentos en el período pos-transplante: es esencial la participación del equipo multidisciplinar en la orientación para la alta hospitalar del paciente trasplantado y, además, los principales factores de error en el uso de medicamentos. Categoría 2 – cultura de seguridad en las unidades transplantadoras: la alta hospitalar, y los principales factores de error en los periodos pre e intraoperatorios.

Conclusion: Este estudio mostró que la cuestión de una cultura de seguridad en el proceso de donación y trasplante de órganos está incipiente en la literatura, y es necesario desarrollar estudios bien delineados y relacionados con la cultura de seguridad del paciente en todas las etapas del proceso de donación y trasplante.

Keywords

Organizational culture; Patient safety; Tissue and organ procurement; Transplantation

Descritores

Cultura organizacional; Seguridad del paciente; Obtención de tejidos e órganos; Transplante

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Introduction

According to the World Health Organization, patient safety is defined as the minimization of unnecessary damage associated with health care.(1) At the national level, the Ministry of Health recently instituted the National Patient Safety Program (NPSP), which aims to improve health care in all the national health facilities.(2)

The safety culture issue is inserted into the context of patient safety, which consists of actions by all members of an institution that are focused on the safety of professionals, patients and family members, enabling the identification, notification, and resolution of possible problems related to safety.(2)

A safety culture is often associated with the promotion of safe practices and, consequently, the quality of services provided by an individual or organization, in a prioritized manner. It aims to enable debates based on mutual trust, shared perception, confidence, and effectiveness of preventive measures, and is directed at reporting and discussing of errors or failures in the care provided.(3-5)

In this scenario, organ and tissue donation is a representative of the transplants; they are complex processes involving a multiprofessional team, as well as operational, bureaucratic, legal, and logistical issues. Such complexity demands greater cohesion, good communication, effectiveness, and above all, safety practices within the team during the execution of each stage of these processes.(6)

The donation of organs and tissues is composed of the stages: identification, assessment and validation of the potential donor; diagnosis of brain death; clinical assessment and maintenance of the potential donor; interview with the family; removal, transportation and allocation of organs. The transplant process involves these stages: recipient assessment by the multiprofessional team; placement on the waiting list; perioperative period (organ implant), and postoperative follow-up. All the stages are vital to the success of donation and transplant, and it is fundamental to establish a strong safety culture.(6-8)

Considering the increasing number of potential and effective donors in Brazil in the last seven years (1,898 effective donors in 2010; 3,415 effective donors in 2017), in addition to the annual loss of potential donors, (over 4,000 due to cardiac arrest, family refusal, donation process logistics, and other indefinite causes), it is fundamental, relevant, and necessary to understand the safety culture reality among the teams involved in these processes.(9)

Likewise, for effective assistance in the organ donation and transplant process, professionals must consolidate their knowledge and attitudes on safety culture, with interconnection of this issue at each stage of the process. Hence, the following guiding question was developed: “How has the safety culture been developed for the process of organ donation and transplantation?”

In this sense, the objective was to evaluate the development of a safety culture in the organ donation and transplantation process, as was available in the scientific literature.

Methods

This was an integrative literature review, which allows the orderly gathering of studies on a given topic, allowing for critical analysis and a deepening of knowledge.(10) It was conducted at the Federal University of Santa Catarina, from November 2012 to November 2016, following the six steps described below:

First step - development of the research question considering the proposed theme, the study participants, the information to be obtained, the interventions to be evaluated, and the results to be measured.(10)

Second step – selection of databases, considering the subject and the largest amount of articles, using a random search with the following descriptors: safety culture, organ donation, organs donation, organ donor, organs donors, tissue and organ procurement*, patient safety, tissue and organ procurement, tissue donors, transplantation, organ transplantation. The databases used for this study were CINAHL, LILACS, PubMed, Scopus, Web of Science, and the electronic library SciELO. The
search strategies were formulated using Boolean operators “OR” and “AND”.

The inclusion criteria defined were: original articles, guidelines and experience reports related to organ donation, transplants and safety culture; publications in English, Spanish and Portuguese; available in full text. Exclusion criteria were: review articles, editorials, letters, and summaries in annals of events or periodicals. The PRISMA Diagram Model was used to facilitate the organization of study selection (Figure 1). The articles selected were exported to the Mendeley® reference management software, to identify duplicate articles and gather all publications found.

Fully read the information obtained. This step was developed jointly with one of the authors who has expertise in organ donation and transplantation, as well as one author with expertise in safety culture, aiming to identify greater rigor related to the method and information related to the donation process, transplantation, and safety culture, as well as the best levels of evidence.(10)

**Fifth step** - this step aimed to interpret and synthesize the information obtained, comparing the data acquired in the analysis of the articles, as well as possible gaps and research bias, presenting opportunities for the development of new studies related to this topic.

**Sixth step** - for the development of this stage, the obtained information was distributed into subgroups according to data related to the organ donation and transplantation process, with the aim of facilitating the analysis. Thereafter, two categories were constructed: 1) Culture of patient safety for the use of medicines in the post-transplant period; and 2) Culture of patient safety in the transplant units

**Results**

In the first step of the search there were 1,659 studies identified in the periodical databases: 34 in CINAHL, 42 in LILACS, 300 in PubMed, 26 in SciELO, 1199 in Scopus, and 58 in Web of Science. After removal of duplicate articles, the total obtained was 1,497 studies. Of these, 33 were selected by title, abstract and descriptors. After consensus among researchers, 14 studies were selected for use in the study. All of these articles presented a level of evidence of III or IV.(10) Chart 1 presents the information extracted from the studies included in the research.

**Presentation of the categories**

**Category 1 - Patient safety culture for the use of medications in the post-transplant period**

The information obtained indicates that the involvement of health professionals in guidelines and monitoring of medication use in all stages of the transplantation process is essential in order to pro-
promote the safe use of medicines, which may lead to better clinical results for the patient.\(^{23,24}\)

The findings highlight the main errors related to the administration of incorrect doses and unauthorized medicines. In addition, they demonstrate the need for development of well-defined protocols, medication standardization, as well as improvement strategies related to the organization of medication administration. Furthermore, they reveal the importance of the health team guiding and educating patients on the correct use of medications.\(^{16,24}\)

The findings enabled the understanding that when greater patient involvement is obtained in the manipulation of medications, a greater level of treatment adherence is achieved, leading to an improvement in the patient’s clinical condition, reducing infection rates, re-admission, and graft rejection.\(^{12,21-23}\)

**Category 2 - Culture of patient safety in the transplant units**

The category presents questions related to the safety culture of patients undergoing renal,\(^{18,19}\) hepatic,\(^{11}\) abdominal,\(^{24}\) pancreatic,\(^{20}\) and bone marrow transplantation,\(^{14}\) in the pre- and intra-operative periods. Studies emphasize the importance of the health team in focusing on the transmission of diseases, and it is important that the professionals ensure, by means of examination and clinical history, the absence of any signs that may indicate that the organ donor has any transmissible disease.\(^{13-15,17,18}\)

In addition, they point out that the organization and analysis of surgical data, as far as the donor and the recipient are concerned, are strategies for promoting a culture of patient safety. With regard to the prevention of possible irregularities and complications, it was noted that the use of prophylactic antibiotics, as well as biopsies, was strategies that could minimize the risk of infections and prevent other health events, such as early rejection.\(^{11,19,20}\)

**Discussion**

The recommendations identified in this study show that the development of a safety culture during the process of organ donation and transplantation is directly related to transplantation. Most of the studies are related to safety in the transplantation process, involving the use of medication, the participation...
of the multiprofessional team at hospital discharge, as well as actions aimed toward the intraoperative period. In addition, the level of evidence from the studies was identified as levels III and IV, showing the need for stronger studies, with level of evidence I and II, which can subsidize strategies for safety improvements in the process of organ donation and transplantation.

The safety culture scenario in donation and organ transplantation presents itself as an extremely complex process, involving the participation of several professionals who act in different stages, requiring synchrony, organization, and knowledge of the team in the development of each stage.\(^{(8)}\)

Therefore, we understand the need for a strict look by the authorities at the process of organ donation and transplantation, in order to enable healthy organs which are feasible to be transplanted using efficient and effective logistics, which can ensure a higher survival rate for the patient undergoing transplantation. Therefore, the development of new studies that can provide quality and safety in this area is relevant, prudent, and essential.\(^{(6,8,25)}\)

Although practically all the studies were categorized as level IV evidence, relevant information was obtained, especially regarding the participation of the multiprofessional team, as well as the cohesion of these professionals in the thorough evaluation of the potential donor, in order to obtain quality organs and tissues, avoiding the transmission of infectious diseases or neoplasias to the transplant recipient.\(^{(7,15)}\)

Conducting an in-depth physical examination for potential donors was rated as effective in reducing risks and adverse events in transplants.\(^{(13-15)}\) In addition, evidence from these studies indicates the use of tools (protocols, guidelines and directives) by the health team is important for safety in the donation and transplantation process, to investigate possible changes presented by the donor as well as by the transplant recipient.\(^{(13,14,17)}\)

The findings also point the way to the safety process, contributing to the safety of the organ donor validation stage, minimizing the risk of loss of organ donors owing to cardiac arrest, and ensuring viable organs for transplant. It is important to note that transplantation only occurs through the availability of a donor of viable organs and tissues.\(^{(9,26-28)}\)

At the same time, the use of tools (protocols, guides and guidelines) promotes team synchronization and cohesion, effective communication, rapid making-decision, time and process management. The safety culture emerges as a proposal for discussion, enhancement, growth, and improvement in the quality of care provided by health professionals throughout the donation and transplant scenario; after all, more satisfied professionals provide better and safer care.\(^{(29,30-32)}\)

Also, regarding the evidence of the study, the applicability of safety programs and instruments as effective strategies for transplant safety is highlighted, especially regarding the participation of the multiprofessional team at hospital discharge. In addition, the findings indicate the need to promote strategies that influence the improvement of patient adherence to medication use, which is one of the factors related to the development of organ rejection.

In the transplantation process, teamwork must take place from the first contact of the individual with the health service until the post-transplantation period, for a better result in the professionals’ performance and in the treatment of the patient, as well as promoting safety in the process.\(^{(33,34)}\) In the daily life of transplanted patients, medications are essential and provide a better quality of life, protection, and safety regarding rejection of the transplanted organ.\(^{(30-33)}\)

The findings also point to the need for managers and professionals to work in an integrated manner, in order to develop a strengthened safety culture, guaranteeing the provision of quality, safe, and effective care in the organ and tissue donation process. In the donation process, the safety culture provides a reduction of errors in all stages, from the diagnosis of brain death and maintenance of the potential donor, to the procurement and implantation of the organs, as well as during the postoperative care.\(^{(34,35)}\)

**Conclusion**

Only one study related to a safety culture for transplantation was identified. The other studies focused
on donor safety and transplantation safety, especially with the use of medications. Regarding the development of a safety culture, the studies guide the participation of a cohesive multiprofessional team, in-depth physical examinations with the potential donor, as well as the use of tools (protocols, guides, and guidelines) to support the team in providing care. Further studies related to the patient safety culture at all stages of the donation and transplantation process need to be conducted to deepen this theme, especially related to each step of the donation process, given the amount of donor losses in Brazil.

References


Advanced practice nursing: a concept analysis
Prática Avançada de Enfermagem: uma análise conceitual

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Keywords
Advanced practice nursing; Evidence-based nursing; Evidence-based clinical practice; Nursing education; Nursing specialties

Abstract
Objective: To analyze the concept of advanced practice nursing and elucidate the essential elements: attributes, antecedents and consequences.

Methods: The methodological reference for the study was the Walker and Avant (2011) concept analysis model, structured by an integrative review of the literature conducted in May and June, 2017. The Scopus, PubMed, CINAHL, Web of Science, Science Direct, Cochrane and Lilacs databases were searched for studies that addressed the term and that were published in Portuguese, English or Spanish.

Results: The sample consisted of 33 studies conducted in eight countries and dated from 2000 to 2016, with 56% published in the five-year period of 2011-2016. Eight attributes were identified: Educational preparation at the master's or doctoral level, and specialization in clinical area; Evidence-based practice; Ability to exercise judgement and critical thinking; High level of autonomy; Advanced and comprehensive assessment; Leadership; Capacity for diagnosis, management and administration; and Teaching other nurses. The antecedents and consequences were identified, and a definition of the concept was constructed.

Conclusion: Considering that the idea of advanced nursing is expanding worldwide, especially in Latin America, other studies related to Advanced Nursing Practice are recommended. An in-depth understanding of the implementation practice issues in Brazil is necessary, to aide in determining the forthcoming APN concept for the country. This study contributes to that understanding by defining the concept of APN, including its antecedents, attributes, and consequences.

Resumo
Objetivo: Analisar o conceito de Prática Avançada de Enfermagem e elucidar os elementos-chave: atributos, antecedentes e consequências.

Métodos: O referencial metodológico para o estudo foi o modelo de análise conceitual de Walker e Avant (2011), estruturado mediante uma revisão integrativa da literatura conduzida nos meses de maio e junho de 2017. A busca foi realizada nas bases de dados Scopus, PubMed, CINAHL, Web of Science, Science Direct, Cochrane e Lilacs, considerando estudos que trataram do termo e que foram publicados em português, inglês ou espanhol.

Resultados: A amostra foi composta por 33 estudos conduzidos em oito países entre os anos 2000 e 2016, sendo 56% publicado no quinquênio 2011-2016. Foram identificados oito atributos: Preparação educacional em nível de mestrado ou doutorado, e especialização em área clínica; Prática baseada em evidências; Habilidades para aplicar raciocínio crítico e pensamento crítico; Nível de autonomia; Avaliação avançada e ampla; Liderança; Capacidades diagnósticas, gerenciais e administrativas; Promoção do ensino às outras enfermeiras. Foram identificados os antecedentes e consequências e foi desenvolvida uma definição do conceito.

Conclusão: Diante da expansão da ideia de enfermagem avançada pelo mundo, particularmente na América Latina, recomendam-se outros estudos relacionados à Prática Avançada de Enfermagem. É necessária uma compreensão aprofundada das questões na prática de implementação no Brasil para ajudar a determinar o conceito futuro de PAE para o país. Este estudo contribui para essa compreensão ao definir o conceito de PAE com seus antecedentes, atributos e consequências.

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Introduction

The Pan American Health Organization (PAHO) and the World Health Organization (WHO) officially address the mandate for Universal Health Coverage when they recommend increasing the pool of advanced practice nurses to develop a skillful health care practice able to respond to population health needs. This directive is in keeping with the strategic plan of the International Council of Nurses (ICN) and its four goals for the development of the profession. Improvement of health coverage to populations by providing leadership and strategic support to nurses in implementing Advanced Nursing Practice around the world is one of these goals. To this end, PAHO proposes strategies that broaden professional nursing practice and allow the best use of advanced nursing skills in health services. It recommends strategic measures such as implementing educational programs to prepare nurses in the advanced practice role and designating key functions in primary healthcare services for these professionals.

The ICN defines the advanced practice nurse as “a nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master’s degree is recommended for entry level.” In addition, the organization delineates some conditions that are necessary for Advanced Nursing Practice (ANP) to occur in health services. These are: educational preparation at an advanced level for formal recognition; a role function that integrates research, education, practice and management; a high degree of professional autonomy; advanced assessment, and diagnostic and decision skills; certification or accreditation; and its own legislation.

However, ANP as a care model presents difficulties in its implementation because of various obstacles. These include different educational levels of professional nurses, economic factors, and restrictive practice policies advocated by the medical profession. Public policies that assure legal support of the practice and promote autonomy are needed for evidence-based practice to take place and for the integration of research, theory and practice in holistic and directed care in the advanced practice perspective.

Studies also indicate an expressive difficulty in understanding advanced practice nursing, as a specific type of care, because it embraces various roles with a wide and growing variety of actions, requirements and outcomes.

Furthermore, there is confusion about the terminology that addresses the practice. The use of the term Advanced Practice Nursing (APN) interchangeably with other similar concepts such as Advanced Nursing Practice and Advanced Practice Nurse adds to the problem of diverse roles and may represent another barrier to its implementation, especially in non-English speaking countries.

The purpose of this study was to clarify the concept of Advanced Practice Nursing, with the intent to enhance knowledge of its characteristics that may aid in its implementation and evaluation.

Thus, the objective of the study was to analyze the concept of advanced practice nursing and elucidate the essential elements: attributes, antecedents and consequences. In reviewing the literature for similar studies, two articles were identified. These studies aimed to clarify the concept of advanced nursing practice through concept analysis, using different methods. The authors also point out the existing confusion of terms, roles and nomenclatures for this practice. The studies indicated the need for consistency in determining the scope of practice and the definitions of the concept. While these studies contribute to the understanding of the concept, further analyses are important because of the dynamicity of a concept and the increase of scientific production.

Methods

The concept analysis model proposed by Walker and Avant (2011) was the methodological reference for the study. In attendance to the purpose of the study, five of the eight stages that comprise the model were addressed in this analysis: selection of...
the concept; determination of the purposes of the conceptual analysis; identification of the use of the concept; identification of the attributes that define the concept; and identification of the antecedents and consequences of the concept.\(^{(6)}\)

It is important to clarify that steps five and six of the analysis model, that refer to the construction of a model case and others, are recommended for the purpose of emphasizing and/or elucidating the attributes of the concept.\(^{(6)}\) These steps were not conducted in this analysis because the mode of study selected, a systematic review of the literature, was considered adequate in elucidating the attributes. Step eight identifies the empirical referents of the attributes that can be used in their measurement. This step was also not included because the study did not seek to establish measurement criteria for the concept. The exclusion of these steps does not imply in losses in the result of this conceptual analysis.

Having selected the concept of Advanced Practice, a wide-ranging integrative literature review\(^{(9)}\) conducted to implement the other steps that focus on the identification of the uses, attributes, antecedents and consequences of the concept. The review steps were: determining the research question(s); search of the literature; evaluation of data; analysis of the results and presentation.

The research question(s) for the review were: What is the concept of advanced practice nursing? What are the characteristics of advanced practice nursing? What are the antecedent conditions and the consequences of advanced practice nursing? A study protocol to organize the review data was constructed that included: the objective of the search, guiding questions, selected data bases, and search strategies; the inclusion and exclusion criteria; the strategy for critical evaluation of the articles based on the pyramid of scientific evidence; and the instrument for data extraction. The relevant information extracted from the articles was registered in a worksheet form. Seven online databases were searched during the months of May and June, 2017. They were: Scopus, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Science Direct, Cochrane and Lilacs.

The search terms derived from the Medical Subject Headings of U.S (MeSH) and the Health Sciences Descriptors (DeCS) and translated into Portuguese, English and Spanish were: Prática Avançada de Enfermagem; Advanced Practice Nursing; Enfermería de Práctica Avanzada; Enfermagem Baseada em Evidências; Evidence-Based Nursing; Enfermería Basada en la Evidencia; Prática Clínica Baseada em Evidência; Evidence-Based Clinical Practice; Práctica Clínica Basada en la Evidencia.

The combination search strategies using the AND Boolean performed in all the selected databases, except in the Lilacs database, were: Advanced Practice Nursing AND Evidence-Based Nursing; Advanced Practice Nursing AND Evidence-Based Clinical Practice. In the Lilacs database it was only possible to use a descriptor for the lack of articles from the use of the strategies used in the other databases, it was used: Advanced Practice Nursing.

The inclusion criteria were: complete articles published in the selected databases that addressed advanced practice nursing and that they be written in Portuguese, English or Spanish. Articles that did not answer the guiding questions of this study, articles not available electronically in their full version, editorial-type publications, letters to the editor, abstracts, reviews and experts’ opinion texts were excluded.

The search was performed by a pair of researchers, individually, on the same day and time. A total of 1,907 titles were identified in the databases. After reading the titles, 157 articles were selected, listed and saved in a Word document. Of these, 52 articles were excluded due to repetition. The abstracts of the resulting 105 articles were read and examined for indication that reading of the entire article would be necessary. A total of 57 articles were selected for further examination. After careful reading of the full texts, a sample of 33 articles was obtained.

## Results

Among the seven different countries where the studies were conducted, the United States of America (USA)
and Canada stand out with 54.5% and 15.2% of the publications, respectively. The studies were published in the period of 2000 to 2016, with 56.2% of these from 2011 to 2016, indicating recent interest on the subject. Regarding the databases where the studies were located, 42.6% as shown in table 1.

Table 1. Distribution of studies according to country, year of publication and database

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of the study</td>
<td></td>
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<tr>
<td>United States</td>
<td>18(54.5)</td>
</tr>
<tr>
<td>Canada</td>
<td>5(15.2)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4(12.2)</td>
</tr>
<tr>
<td>Norway</td>
<td>2(6.1)</td>
</tr>
<tr>
<td>Finland</td>
<td>1(3.0)</td>
</tr>
<tr>
<td>China</td>
<td>1(3.0)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1(3.0)</td>
</tr>
<tr>
<td>Ireland</td>
<td>1(3.0)</td>
</tr>
<tr>
<td>Total</td>
<td>33(100)</td>
</tr>
<tr>
<td>Year of publication</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>2(6.1)</td>
</tr>
<tr>
<td>2015</td>
<td>4(12.1)</td>
</tr>
<tr>
<td>2014</td>
<td>5(15.1)</td>
</tr>
<tr>
<td>2013</td>
<td>3(9.1)</td>
</tr>
<tr>
<td>2012</td>
<td>3(9.1)</td>
</tr>
<tr>
<td>2011</td>
<td>4(12.1)</td>
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<tr>
<td>2010</td>
<td>2(6.1)</td>
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<tr>
<td>2009</td>
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<td>2008</td>
<td>1(3.0)</td>
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<tr>
<td>2007</td>
<td>3(9.1)</td>
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<td>2006</td>
<td>2(6.1)</td>
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<tr>
<td>2003</td>
<td>1(3.0)</td>
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<tr>
<td>2001</td>
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<tr>
<td>2000</td>
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<tr>
<td>Total</td>
<td>33(100)</td>
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<tr>
<td>Database</td>
<td></td>
</tr>
<tr>
<td>Science Direct</td>
<td>13(39.4)</td>
</tr>
<tr>
<td>Scopus</td>
<td>9(27.3)</td>
</tr>
<tr>
<td>Pubmed</td>
<td>6(18.1)</td>
</tr>
<tr>
<td>Cinahl</td>
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<tr>
<td>Web of Science</td>
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<tr>
<td>Lilacs</td>
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</tr>
<tr>
<td>Total</td>
<td>33(100)</td>
</tr>
</tbody>
</table>

According to table 2, all the articles were published in English regardless of the country where they were conducted. The studies were mostly descriptive (56.2%) and exploratory (43.7%), and used qualitative research methods (96.8%).

The attributes, antecedents, consequences and the definition of the concept Advanced Nursing Practice as determined by the analysis of the 33 articles are explained in the following sections. The synthesis of the concept analysis results is described in chart 1.(5,6,10-27)

Concept definition

The analysis of the information derived from the studies that described Advanced Practice Nursing in this review, resulted in the following conceptual definition: Advanced Practice Nursing is the specialized knowledge used by a registered professional nurse that is qualified to perform complex and advanced decision-making and clinical skills necessary for the implementation of the advanced practice role in healthcare, integrating theory, practice, teaching, research, leadership, and management.

Discussion

The Advanced Practice Nursing concept is widely discussed worldwide as observed by the plethora of publications on the subject. Countries such as Canada and the United States have integrated the advanced practice nursing role into the health care
Advanced practice nursing: a concept analysis

system and have generated evidence regarding the quality and safety of care provided by nurses in this role and of the positive health outcomes to this type of nursing. It is important to note, however, that readiness for implementing the role in Latin America is presently under discussion and preparation of advanced practice nurses to attend to the existing health access disparities in these countries is recommended as a priority strategy for the region.

Advanced practice nursing has mainly focused on primary health care of urban and rural populations. The lack of medical doctors in countries such as the US, and the difficulties of the population in accessing health care were primary contributing factors to the development and growth of advanced practice nursing in the 1960s. Exerting advanced practice includes prescription drugs, a practice that requires professional competence and provides greater autonomy as it enables better provision of patient care and more time-efficient use, including spending on professional medical care, and resources. Although there is consensus of the benefits of advanced practice nursing, there are obstacles that limit the extent to which the role is implemented and its authority for practice. Medical efforts to contain the expansion of advanced practice nursing, primarily because prescription of medications and some treatments, actions commonly performed by medical doctors, figure among the nurse’s competencies. In this sense, there are also concerns about patient safety and quality of care.

Prescription of medications and treatment as a competence in advanced practice nursing is denoted worldwide as an important aspect to be discussed when implementing the role. There is little information, however, about action patterns of the APN nurse practitioners in this function, or on the legal authority to prescribe. The action is context dependent to the extent that the individual countries legal boundaries for nursing and the political force that the nurses may exert for needed legislation changes determine the application of this competency. In addition, there are different levels of knowledge that these nurses may present. Although prescription is one of the actions within the scope of practice of the APN, authority for this competence may be difficult to achieve, thus affecting the nurse’s performance in the health establishment.

However, the basic curricular standards for advanced practice preparation that allow the consolidation of the course subjects and of the core curriculum for APN graduate education would standardize the procedures of APNs would clarify the nurses’ actions with the health team and the community to provide professional direction. In addition, legal support and professional training configure the prescription of medications by the nurse as a safe and resolutive practice.

Advanced Practice Nursing role expansion arose, among other factors, from the need to improve: access to care and population health; health care provider capacity; cost-effectiveness of services; and quality and coordination of care. This group of health care nurses have specialties with clinical skills and judgments that improve care delivery, resultant from their education and practice experiences. In primary care, they perform advanced level tasks with quality and a high rate of satisfaction among patients.

In Brazil, the discussion of advancing nursing practice continues to expand. However, for many researchers, it is still unclear what actions are to be related to Advanced Practice Nursing and what is necessary to become able and competent to perform them from the perspective of their legal regulation. This study results contribute to that understanding by defining the concept of APN, including its antecedents, attributes, and consequences.

Among the attributes identified in this study, educational preparation at the master’s or doctoral level is an important characteristic of advanced nurses. This is because these courses require extensive preparation and experience. In addition, they demand greater commitment to the profession and allow the development of intellectual capacity, educational competencies, and evidence-based clinical skills. Studies have shown that the acquisition of these high-level professional abilities is not common to all advanced practice nurses. Thus, it as a challenge for the AP nurse to execute these skills because it involves teaching and research.
Research suggests that because there is a lack of a solid and informed understanding of the autonomous, independent actions of APNs when there is an absence of physician care, patients and families may experience feelings of insecurity with this care.\(^{(23)}\) To address this potential obstacle, the results of a study evaluating the role of advanced practice nurses in Finland suggests the importance of clearly defining the role of APNs for the development of their sustainable and trusted practice.\(^{(32)}\)

Regarding the perception of doctors and nurses about the introduction of the APN role, benefits for patient care and safety, such as the optimization of actions and evidence-based practice, and an increase in professional status were identified. Those factors help to improve the perception of other professionals and patients about the image of the APN.\(^{(23,33)}\)

In view of the incorporation of strategic planning for coverage and universal access to health in the health systems of the countries supported by the Pan American Health Organization and the Human Resources for Health resolution that underscores the increase in the number of advanced practice nurses to provide support to health systems, this practice is recognized as of fundamental importance for reducing morbidity and mortality in primary health care.\(^{(29)}\)

Therefore, for the implementation of this practice it is necessary that a modification occurs in order to promote a broader role of nursing, which requires political support, the direction of health services, health teams, nursing teachers and professionals themselves. In order to prioritize training and professionalization that meets the population demands and that guarantees a safe and quality care.\(^{(29)}\)

**Conclusion**

The study identified the essential characteristics of Advanced Practice Nursing and elucidated its meaning, thereby contributing to a better understanding of the aspects that identify this professional role, the preconditions to its occurrence, its outcomes and its implementation. Moreover, the results contribute to a better identification of the challenges for the integration of this role in the current Brazilian health care system. In order to contribute to the improvement of access to quality healthcare services and to the provision of care that meets the patients’ needs. The study indicates that there is a demand for regulation and standardization of the graduate curriculum to meet the requirements of preparing advanced practice nurses and to promote the potential benefits that the change in the nursing curriculum can offer. Establishing a unified force to exercise advanced practice with enough autonomy and independence in the execution of clinical assessments, diagnoses and prescriptive actions is a challenge that must be discussed. This will lead to the promotion of the development of new profiles of health professionals, with a special focus on nurses in order to improve the patient’s health outcomes, the quality of care and the efficiency of the health system. Besides that, the advanced practice nurse can offer greater accessibility to the care of risk groups, people in rural or remote areas, high-risk populations in critical and specialized care units and better outcomes in managing care for people with chronic illnesses. Further investigations are recommended, especially in Brazil. New analyses of the concept of advanced practice nursing can be carried out with the understanding that the concept undergoes constant modifications and its ideas and words develop and evolve over time. A thorough understanding of this APN role and practice helps its integration into the health system and encourages professionals to seek more information.

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**References**

Advanced practice nursing: a concept analysis


Nursing practices in patients with chronic pain: an integrative review
Práticas de enfermagem ao paciente com dor crônica: revisão integrativa
Prácticas de enfermería para pacientes con dolor crónico: revisión integrativa

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Marcia Morete4
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Abstract
Objective: To know the benefits of nursing practices to patients with pain followed-up in the pain clinic.
Methods: Integrative literature review, using the electronic portal SCIELO, CINAHL and PubMed Central databases, with time cut from 2008 to 2018 and data collection period between June and July 2018. The Health Science Descriptors (DeCs) and Medical Subject Heading (MeSH) were: Patients, Chronic pain, Nurse Care, Pain clinic.
Results: It was evidenced that the production analyzed is mostly on non-pharmacological nursing practices for patients with chronic pain, with reduced publications in Brazil and tended to focus on the last five years. The patient with this type of injury experiences multifactorial conditions that directly influence the health condition, and requires integral follow-up by an interdisciplinary team, including the care network, through qualified and resolutive interventions, aiming at adaptation and/or improvement of their health condition.
Conclusion: The studies indicate benefits generated by systematized practices implemented by nurses, through instruments and tools for detection, intervention and evaluation, as well as clinical support.

Resumo
Objetivo: Conhecer os benefícios das práticas de enfermagem aos pacientes com dor acompanhados na clínica de dor.
Métodos: Revisão integrativa de literatura, sendo utilizado o portal eletrônico SCIELO, e base de dados CINAHL e PubMed Central, com recorte temporal de 2008 a 2018 e período de coleta de dados entre junho e julho de 2018. Como descriptores em saúde (DeCs): Pacientes, Dor crônica, Cuidados de Enfermagem, Clínicas de dor, e, o Medical Subject Heading (MeSH): Pacientes, Chronic pain, Nurse Care, Pain clinic.
Resultados: Evidenciou-se que a produção analisada é, majoritariamente, sobre práticas de enfermagem não farmacológica a pacientes com dor crônica, com publicações reduzidas no Brasil e tendem a se concentrar nos últimos cinco anos. O paciente com este tipo de agravo, vivencia condições multifatoriais que influenciam diretamente na condição de saúde, e necessitando de acompanhamento integral por equipe interprofissional, com inclusão da rede cuidadora, através intervenções qualificadas e resolutivas, visando adaptação e ou melhora da sua condição de saúde.
Conclusão: Os estudos indicam benefícios gerados pelas práticas sistematizadas implementadas por enfermeiros, por meio de instrumentos e ferramentas para detecção, intervenção e avaliação, além de apoio clínico.

Resumen
Objetivo: Conocer en la literatura la producción científica sobre prácticas de enfermería para pacientes con dolor crónico realizada en las clínicas de dolor.
Métodos: Revisión integrativa de literatura, utilizando el portal SCIELO, y las bases CINAHL y PubMed Central, con recorte temporal de 2008 a 2018 y periodo de recolección de datos de junio a julio de 2018. Como descriptores de salud (DeCs): Pacientes, Dolor crónico, Atención de Enfermería, Clínicas de Dolor; y, en Medical Subject Heading (MeSH): Pacientes, Chronic pain, Nurse Care, Pain clinic.
Resultados: Se evidenció que la producción analizada se refiere principalmente a prácticas de enfermería no farmacológica a pacientes con dolor crónico, con publicaciones reducidas en Brasil y tienden a concentrarse en los últimos cinco años. Los pacientes con este tipo de problemas experimentan condiciones multifactoriales que influyen directamente en su estado de salud y necesitan un seguimiento completo por equipo interprofesional, incluyendo la red de atención, mediante intervenciones calificadas y resolutivas, con el objetivo de adaptar y/o mejorar su estado de salud.
Conclusión: Los estudios indican beneficios generados por las prácticas sistematizadas implementadas por enfermeros, a través de instrumentos y herramientas para detección, intervención y evaluación, además del apoyo clínico. El propósito es mejorar la calidad de vida, la adhesión al tratamiento, manejo del autocuidado y minimización del sufrimiento en pacientes con dolor crónico.

How to cite:
Introduction

The focus of nursing attention is the human being, with its bio-psycho-socio-spiritual needs, with the primary function of instituting nursing practices, promoting health, preventing diseases and, recovering and rehabilitating health, with care capable of meeting needs of patients.\(^{(1)}\) The care, present in the different practices, adds actions of the nature of the profession, resulted from a technical and scientific preparation that is based on empirical, personal, ethical, aesthetic and political knowledge, aiming to promote health and human dignity.\(^{(2)}\) It requires greater application of knowledge, which guides the practices of these professionals in the search for objective and subjective data from the patient.\(^{(3)}\)

In this sense, nursing should pay special attention to pain. It has always been present in the life of man and its chronicification negatively impacts the physical and mental health of the human being.\(^{(4)}\) The need for pain to be recognized as a vital sign has the objective of raising the awareness of health professionals about their treatment and adequate therapeutics.\(^{(5)}\) Currently, this definition is in the process of hospital accreditation, as in the case of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).\(^{(6)}\)

Patients suffering from pain should be assisted by multidisciplinary and interdisciplinary health team in the design of a multidimensional model of care.\(^{(7,8)}\) Thus, the Pain Clinics model is highlighted, in which they differ from a multidisciplinary pain center, since they include research activities and academic teaching in their regular programs. Participating professionals can be physicians, nurses, mental health professionals and physiotherapists, and must be able to manage evidence-based, patient-centered care.\(^{(9)}\)

Considering the need to expand knowledge and given the scarcity of production, it was aimed to know in the literature the scientific production on nursing practices to patients with chronic pain accompanied in the pain clinics.

Methods

Integrative literature review (IRL) is a research method developed in evidence-based medicine that allows the incorporation of evidence into clinical practice. It consists of gathering and systematizing research results on a given topic. It has 6 different and complementary stages in its course: elaboration of the research question, search for studies, data extraction, analysis of included studies with interpretation of the results and presentation of the review.\(^{(10)}\)

For this study, we used the PICo strategy (Population, Phenomenon of Interest and Context) to guide data collection, a specific guide to extract information and classify the quality of the results.\(^{(11)}\) In this review, Population (P) covered patients with chronic pain; the Phenomenon of Interest (I), the nursing practices and the Context (Co) referred to the pain clinics.

In the first stage of IRL, the guiding question was created from the strategy mentioned above:

**What is the impact of nursing practices on patients with chronic pain followed-up in the clinic of Pain?**

Following the second step, we performed the search using the Health Sciences Descriptors (DeCs), in the electronic portal SCIELO, with the boolean phrase: (“patients”) AND (“chronic pain”) AND (“nursing care”) AND (“pain clinics”) totaling 10 articles. The Medical Subject Heading (MeSH) was used in the CINAHL and PubMed Central database: (patients) AND (“nursing care” OR “care, nursing” OR “nursing care Plan” OR “nursing interventions”) AND (“pain clinics” OR “pain clinic” OR “Clinic, Pain”), with respectively 32 and 220 articles.

In this study, the key word “nursing practices” was replaced by the descriptor “nursing care”, because it allows the expansion of scientific findings.

The searches was conducted between June and July 2018, as inclusion criteria were considered: articles in English, Spanish and Portuguese languages, published between 2008 and 2018, that addressed nursing practices to patients with chronic pain followed-up in pain clinics.
As exclusion criteria, other forms of publication were chosen that did not respond to the guiding question, did not present content related to the research topic, duplicated articles in other databases.

To assist in choosing the best possible evidence, a hierarchy of evidence is proposed: 1: Systematic reviews; 2: evidence obtained in individual studies with experimental design; 3: evidence from quasi-experimental studies; 4: evidence from descriptive or qualitative studies; 5: evidence from case or experience reports; 6: evidence based on expert opinions. (12)

The analysis of the studies was carried out in a descriptive way with the purpose of answering the research question, taking into account ethical aspects, respecting the authorship of the ideas, concepts and definitions present in the included articles. The titles and summaries of the articles were evaluated in order to refine the sample, highlighting those that responded to the proposed objective of this review. Subsequently, exhaustive reading of each selected publication, subsidizing reflections about the health scenario, seeking to identify relevant aspects that were repeated or highlighted. Afterwards, the articles were organized in order to collect data for the construction of IRL.

The analysis occurred critically identifying the issues pertaining to each article. They were grouped by levels of evidence, identifying different methodologies, as well as samples and data collection technique.

In the initial search, performed by two independent reviewers, with a standardized protocol for the use of descriptors and cross-referencing, we found, initially, 262 articles. After applying the inclusion and exclusion criteria, there were 57 studies that after reading the titles and abstracts, 18 were analyzed, of which 02 were excluded because they did not address the topic (Figure 1).

**Results**

The scientific production analyzed was 16 articles, 31.25% of which were indexed in the CINAHL database, 56.25% PUBMED and 12.5% in the
Nursing practices in patients with chronic pain: an integrative review

SCIELO portal; mostly on nursing practices, with reduced publications in Brazil and concentrated in the last five years (75%). The most prevalent study designs were randomized clinical trials (31.25%), followed by a systematic and qualitative review (18.75%); and experimental, almost experimental, experience report, case study and literature review (6.25%). The nursing practices provided to the patient with chronic pain formed a totality in the findings, with 25% of non-pharmacological interventions; 18.75% of educational practices; 12.5% interface with the team, patient follow-up by telephone and home visits; 6.25% Pain Assessment, Nursing Prescription and Adequate Registry.

The 4th and 5th stages were performed concomitantly, where analysis and interpretation of the results occurred (Chart 1).

**Chart 1. Synthesis of data collection**

<table>
<thead>
<tr>
<th>Author/ Year/ Country</th>
<th>Design</th>
<th>Level of evidence</th>
<th>Nursing practices</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freire et al, 2018</td>
<td>Systematic review</td>
<td>1</td>
<td>Non-pharmacological interventions</td>
<td>Therapeutic interventions of physical, emotional and spiritual aspects that promoted the improvement of the health conditions of the patient his QoL, evidenced by means of validated measurement scales and reliable statistical power, described in the respective studies.</td>
</tr>
<tr>
<td>Oliveira et al, 2013</td>
<td>Descriptive, qualitative</td>
<td>4</td>
<td>Educational practices to assess pain and Non-pharmacological interventions</td>
<td>The nurse can evaluate, examine and implement non-pharmacological strategies of effectiveness to the relief of pain, guaranteeing the quality of life of the patient but is not aware as a direct responsible for the care, regarding the identification of the nursing activities performed for pain management.</td>
</tr>
<tr>
<td>Thomas et al, 2012</td>
<td>Randomized Case-Control</td>
<td>1</td>
<td>Educational Practices</td>
<td>Using educational techniques, nurses help patients develop an adequate plan of care to reduce pain and other symptoms. The motivational interview technique achieves good results in this type of patient.</td>
</tr>
<tr>
<td>Baker, 2016</td>
<td>Experimental</td>
<td>2</td>
<td>Non-pharmacological interventions - Cognitive behavioral therapy, Mindfulness</td>
<td>With the understanding of how chronic pain is related to mental illness, mindfulness techniques and behavioral therapy can be used to help decrease dependence on dangerous opioid medications and help patients understand, accept, and deal with their chronic pain.</td>
</tr>
<tr>
<td>Taplin et al, 2015</td>
<td>Systematic review</td>
<td>1</td>
<td>Interface with team</td>
<td>Multidisciplinary teams for screening result in improvements in follow-up and continued compliance with the guideline, positively affect the planning and implementation of therapy, leading to better adherence and pain control.</td>
</tr>
<tr>
<td>Stapelfeld et al, 2011</td>
<td>Randomized case-control study</td>
<td>1</td>
<td>Non-pharmacological interventions</td>
<td>A study performed in patients with low back pain within the study showed that multidisciplinary, non-pharmacological intervention is more effective than brief intervention in subgroups of patients with low job satisfaction, without influence on job planning and with risk of job loss due to medical leave, compared to subgroups that do not meet these criteria.</td>
</tr>
<tr>
<td>Mohammed et al, 2016</td>
<td>Systematic review</td>
<td>1</td>
<td>Interface with team</td>
<td>User satisfaction impacts on the planning and evaluation of health care delivery. The study evidenced the importance of the nurse’s communication with the team and patient.</td>
</tr>
<tr>
<td>Yıldırım e Kanan, 2016</td>
<td>Quasi-experimental study</td>
<td>3</td>
<td>Nursing care plan - non-pharmacological therapy</td>
<td>Mirror therapy practiced for 4 weeks provided a significant decrease in the severity of phantom limb pain and patients who were not using prophylaxis had greater benefit from mirror therapy.</td>
</tr>
<tr>
<td>Griffith et al, 2010</td>
<td>Experience report</td>
<td>5</td>
<td>Telenovation consultation</td>
<td>The implantation of early palliative care helps to control pain, especially with an interdisciplinary approach, as well as insertion of the family into the care plan. The palliative care nurse often communicates with patients and family members outside the immediate family to ensure that the recommended interventions are effective in controlling pain and symptoms without causing costly side effects.</td>
</tr>
<tr>
<td>Potássio et al, 2009</td>
<td>Literature review</td>
<td>5</td>
<td>Nursing Registration</td>
<td>Identified the main impediments and facilitating factors in the provision of service in pain management, due to the professionals' records in the electronic system, being an important factor in the continuity of services after a regional disaster.</td>
</tr>
<tr>
<td>Ramelet et al, 2014</td>
<td>Cross-over randomized study</td>
<td>1</td>
<td>Telenovation consultation</td>
<td>The telenovation consultation happens at least once a month, by a qualified and experienced nurse. It aims to provide affective support, health information and decision support. It allows individualized and frequent care, with patient satisfaction, adherence to treatment and use of tele-research service and cost.</td>
</tr>
<tr>
<td>Antony e Merghani, 2016</td>
<td>Cross-sectional and descriptive study</td>
<td>4</td>
<td>Home Visits</td>
<td>The results of this study showed that certain demographic and psychosocial factors influence the manifestation of pain and its intensity among chronic patients. Therefore, improvements in education, economic status and psychosocial support should be considered for the management of chronic patients.</td>
</tr>
<tr>
<td>Morales et al, 2016</td>
<td>Randomized controlled study</td>
<td>1</td>
<td>Educational Interventions</td>
<td>Nurses can play a vital role in treating pain by using best practices in assessing and managing pain under a holistic approach where the patient plays a proactive role in approaching the disease process. Educational interventions on self-esteem, pain awareness, communication and relaxation techniques will be performed.</td>
</tr>
<tr>
<td>Costello et al, 2013</td>
<td>Case-study</td>
<td>5</td>
<td>Pain Evaluation</td>
<td>The ability to balance the level of patient comfort by minimizing adverse outcomes related to opioid overdose is key to providing excellent postoperative care for the patient with chronic pain.</td>
</tr>
<tr>
<td>Sørensen e Frich, 2008</td>
<td>Randomized controlled study</td>
<td>1</td>
<td>Home visits</td>
<td>Patients in the nursing intervention group used fewer health care resources at lower costs.</td>
</tr>
<tr>
<td>Stemmer e Courtenay, 2008</td>
<td>Qualitative, descriptive study</td>
<td>4</td>
<td>Nursing Prescription</td>
<td>The nurse’s prescription is beneficial for patients and for the health service in general. Faster access to treatment, better quality of care, greater security, better relationship and communication with patients, greater efficiency and cost-effectiveness.</td>
</tr>
</tbody>
</table>
Discussion

The nurse’s role is set in the articulation of knowledge that provides the patient with adaptive possibilities in his/her life due to the varied interventionist practices that positively impact the understanding of chronic pain.

Elimination of painful sensation, possibly in acute pain, is often not feasible in patients with chronic pain. The control of chronic pain, associated symptoms, disability and improvement of quality of life are paramount in the treatment. In addition, the practices implemented in pain clinics should guide patients about the harmful effects of inactivity, attend to their needs, know their limitations and plan patient-centered care actions.

Patient-centered practice aimed at empowering the patient to self-care, having the support and guidance of nurses with appreciation of the painful experience can enable the recovery and control of their lives with less suffering. It is pertinent to emphasize that suffering is the word that has been most used to designate mental, internal and subjective aspects of pain. It happens when the dimensions of the inner self and personal integrity are threatened.

It was verified that patients with greater social interaction had decreased pain intensity and that this fact is due to the opportunity to verbalize about it; as well as, there is a direct correlation between purchasing power and educational level, where, faced with the intensity of pain, these people have better tools to access health care and, thus, increase their quality of life. This finding raises that the social, socioeconomic, cultural and educational level of patients with chronic pain determine the way to reconfigure their daily life experience with pain.

Social isolation (solitude) is an important risk factor for the manifestation of the disease in patients with chronic diseases. This indicates the importance of social interaction for general health and well-being. The finding that the highest level of social interaction was associated with reduced pain intensity corroborates this explanation.

Household patients have more interpersonal interactions with family members and society than hospitalized patients, so home visits are shaped as innovative strategies because they contribute to cost reduction in health treatment, but they will not necessarily impact, alone, in the pain-related health situation. The aspects that involve this symptom do not change based, solely, on the logistics, but on the integrated and interprofessional care.

The inclusion of the family network is poten
tiated as a link in the relationship between patient and team and is presented as one more proposal, in order to raise awareness and make possible a greater understanding about the aggravation and interaction with the environment. A concrete example of this possibility of partnership in this nursing care is effected by the nurse’s patient service by phone. Studies have shown that the recommended interventions are effective for pain and symptom management without causing costly side effects, as well as having a holistic approach that facilitates assessment of quality of life, that is, they increase their efficiency in meeting patients’ needs and include a wide range of activities, including screening in emergencies, patient safety through nursing counseling and teaching.

The systematized care of the nurse produces autonomy in the management of pain and its interventions were able to overcome the existing inadequacies through pain evaluation, nursing prescription and adequate recording, resulting in comfort, better understanding of the patient and organization of the work process.

Regarding comfort and integrated approach, non-pharmacological complementary treatments have been proven as great contributors to pain relief. Thus, these therapeutic resources show, in the last decades, as potent adjuvants in the global rebalancing and not only symptomatic treatment, adding to the drug therapies previously had as the only and priority in the control of pain.

Multiprofessional programs offering chronic pain nursing practices, with patient-centered care, low complexity psychological approaches (cognitive behavioral therapy), combined with lifestyle reorientation, are interventions that have stood out in the studies, with potential emphasis on rehabilitation, promotion of self-care, ability
to promote comfort, minimization of suffering and promotion of quality of life, as well as meditation.\(^{(12,13,15,17,19,24,25)}\) These programs constitute a multidisciplinary approach\(^{(9,16,17)}\) and for those with pain and life-threatening risks, the implementation of a palliative care program is essential for receiving appropriate interventions from trained professionals for problematic symptoms, thus improving quality of life, as they aim to reduce pain and other symptoms.\(^{(20)}\)

The continuing offering of Continuing Education is highlighted as an important ally in pain management. In this sense, the interventions need to be carried out by qualified professionals, which interfere both in the care and in the health of the patient.\(^{(13,27)}\) Systematized activities, with good communication and evaluation of the behaviors established to the patient, as well as satisfaction regarding the care, guide improvements and benefits both the team and the patient.\(^{(13,18,21,22,27)}\) The Educational Practices allow direct positive interference both in the care plan and in the daily life of the same as in the greater response to the treatment due to the information provided that causes understanding the lived situation.\(^{(13,15,24)}\)

**Conclusion**

There was a low production of studies carried out in Brazil and Latin America. Levels of evidence were strong in other countries, such as North America and Europe. There was a reduced number of typologies of nursing practices, which shows the need to increase investments in the area, such as Continuing Education. We observed the prevalence of non-pharmacological interventions and educational practices in the follow-up of patients with chronic pain. The benefits of these services are reinforced by the systematized form of the nurse’s role in care, carried out through instruments and tools for detection, intervention and evaluation, as well as clinical support, which has produced improved quality of life, adherence to the proposed treatment, management self-care and minimization of patients’ suffering.

**References**

Abstract
Objective: To identify, in the national and international literature, advanced practices in nursing that contribute to safe care.

Methodology: An integrative review study was conducted in the indexed databases of PubMed, EBSCO, Proquest and Web of Science from June to August 2018 to answer the guiding questions: (1) What studies in the national and international literature relate advanced practices and patient safety?; and (2) How can advanced practices in nursing contribute to patient safety? The inclusion criteria were: academic articles published in journals (abstract and full text) in Portuguese, English or Spanish, adopting an empirical method of investigation of the study subject. The study had no restriction regarding the publication year.

Results: The search in databases resulted in 91 references obtained at first; after analysis, the final sample consisted of 12 studies.

Conclusion: The results of this integrative review showed that advanced practices in nursing have a positive relation to patient safety.

Keywords
Advanced nursing practice; Patient safety; Integrative review

Resumen
Objetivo: Identificar, en la literatura nacional e internacional, la práctica avanzada de enfermería como una contribución a la atención segura.

Método: Estudio de revisión integrativa, realizado en las bases indexadas PubMed, EBSCO, Proquest y Web of Science, de junio a agosto de 2018 para responder a las preguntas norteadoras: (1) "¿Qué estudios existen en la literatura nacional e internacional que relacionan prácticas avanzadas y seguridad del paciente?" y (2) "¿Cómo contribuyen las prácticas avanzadas de enfermería a la seguridad del paciente?" Los criterios de inclusión fueron: artículos académicos publicados en revistas con resúmenes y texto completo, disponibles en portugués, inglés o español, y que hubieran adoptado método empírico para la investigación del tema analizado. No hubo restricciones respecto del año de publicación.

Resultados: La búsqueda en las bases de datos dio como resultado 91 referencias obtenidas inicialmente. Después del análisis, la muestra final incluyó 12 artículos.

Conclusión: Los resultados de esta revisión integrativa mostraron que las prácticas avanzadas de enfermería ejercen una relación positiva en la seguridad del paciente.

Descritores
Prática avanzada de enfermería; Seguridad del paciente; Revisión integrativa

How to cite:
Introduction

The concepts of advanced practice nurses (APN) and specialist nurses have existed for many years, with the role of these professionals increasingly disseminated and discussed to increase the quality and reduce the risks of health care, contributing to the excellence of the nursing profession.\(^{(1)}\) According to the International Council of Nurses (ICN), the concept of APN assumes that nurses acquire in their training specialized knowledge, skills, and competencies for decision making in complex situations in various scenarios of professional practice.\(^{(2)}\) It means that nurses need to expand their knowledge related to their fields and develop skills and clinical competencies for decision making and advanced practice, with a master’s degree recommended to achieve this level of training.\(^{(3)}\) In this sense, according to the Consensus Model for Advanced Practice Registered Nurse (APRN) Regulation, the APRN registration means that these professionals are prepared, that is, they have advanced nursing knowledge at graduate level to provide direct support to patients in four roles: certified nurse anesthetist, certified obstetric nurse, clinical nurse specialist, and certified practice nurse. These professionals must be approved in the national APRN certification exam to have their first registration and future recertifications and acquire advanced clinical knowledge and skills that prepare them to provide differentiated care.\(^{(4)}\)

In Latin America, the Pan American Health Organization (PAHO) provides specific recommendations for the expansion of advanced practices of nurses, who should assume more tasks with autonomy particularly in public health, improving the access to services, contributing to health promotion, disease prevention and reduction of deaths.\(^{(5)}\)

For this practice to be implemented and expanded in Brazil, “strategies should be adopted to address five axes: investment in professional training, national strategies for lifelong education, addition of evidence-based practice to guide professional actions of nurses in basic care, revision and expansion of legislation that guides the practice and the health system for extended practice.”\(^{(6)}\)

In order to adopt specific strategies and regulate advanced practice in Brazil, the Federal Nursing Council – COFEN created Resolution 581/2018, which defines the procedures for the registration of *lato* and *stricto sensu* graduate degree granted to nurses, and a list of specialties in this field. According to art. 6 of this resolution\(^{(7)}\), the areas of operation that cover nurse specialties are distributed in three broader areas: Area I: Collective Health, Child and Adolescent Health, Adult Health (Men’s Health and Women’s Health), Health of the Elderly and Urgency and Emergency; Area II: Management; and Area III: Training and Research. Its appendix describes the specialties by area, totaling around 60 specialties, besides the subspecialties. It is a breakthrough for nurses, nurse training and regulations.

Considering the specialization, required skills and competencies of APNs, one can say advanced practice nurses are prepared to influence the patient care environment and promote patient safety.\(^{(8)}\)

Studies suggest that the roles of advanced practice in nursing improve the attractiveness of this career, developing environments of favorable policies, and removing barriers as the demand for high-quality patient-centered care increases.\(^{(9)}\) In this sense, to ensure patient safety and keep a reliable/actionable health organization, joint actions involving health professionals, managers, and policy makers are required to find ways to reduce and/or eliminate the occurrence of adverse events, mitigate risks with specific strategies, methods, tools and comprehensive solutions.\(^{(10)}\)

Safe care requires supportive environments, trained committed professionals, and their understanding that effective technical work is transformative and needs specific ways to adjust the actual task to the competent organization, which requires accurate training.\(^{(11)}\)

In this context, it is important to understand how advanced practices in nursing contribute to patient safety, considering the possibility of risk minimization through differentiated skills and knowledge.

Aiming to provide nurses with a broad structured view of the relationship between advanced practices and patient safety, this study presents...
two guiding questions: (1) What studies in the national and international literature relate advanced practices and patient safety?; and (2) How can advanced practices in nursing contribute to patient safety?

This study aimed to investigate, in national and international literature, advanced practice in nursing as a contribution to safe care.

**Methods**

This is an integrative literature review, a technique that gathers and synthesizes relevant publications about a specific topic or issue, in a systemic and orderly manner, contributing to knowledge expansion and allowing conclusions about a specific study field.\(^{(12)}\) This review had two stages: identification of the theme and definition of the guiding questions; literature search and selection strategy; categorization, evaluation and analysis of studies; and review presentation.

The literature search was conducted in June 2018 and the studies collected were analyzed from June to August 2018. The following indexed databases were used for literature search: Pubmed, EBSCO, Proquest and Web of Science, combining the following descriptors: ‘Advanced Practice Nursing’ OR ‘Advanced Practice Nurse’ OR ‘Advanced Practice Nurses’ AND ‘Patient safety,’ all terms in English. The inclusion criteria were: academic articles published in journals (abstract and full text) in Portuguese, English or Spanish language, adopting an empirical method of investigation of the study subject. The study had no restriction regarding the publication year, resulting in studies published between 2010 and 2017.

The studies were categorized according to the three major areas of COFEN Resolution 581/2018 - Area I: Collective Health, Child and Adolescent Health, Adult Health (Men’s Health and Women’s Health), Elderly Health and Urgency and Emergency; Area II: Management; and Area III: Training and Research – to identify the fields of advanced practice most often discussed, according to the nursing practice in Brazil.\(^{(7)}\)

**Results**

The search in databases found 91 references obtained at first, with 34 studies from the Pubmed, 20 from EBSCO, 12 from Proquest, and 25 from the Web of Science. Of these 91 studies, 29 were duplicates and were removed; therefore, 62 studies were evaluated. The abstracts of these 62 publications were read, 39 studies were excluded, seven were non-academic, four were theoretical articles, one was in French, and 7 were not related to the guiding question. The full text of all remaining 23 studies was read independently by the two authors and 11 were removed from the analysis due to inadequacy to the study scope. Then, the final sample of this review consisted of 12 studies. Figure 1 shows the stages of this integrative review and the strategy of study selection.

Data from all 12 studies included in this review were inserted in a Microsoft Excel spreadsheet using the EndNote software, and grouped into the categories: author, year of publication, country, title, journal, methodology, conclusion, and focus of the study.

In the classification per study design, 10 were quantitative studies, which may indicate researchers of this field are more interested in this type of methodology. In terms of journal type, 11 studies were published in nursing journals and one in a medical journal.

Regarding the categorization, 9 (75%) studies were related to Area I and three (25%) to Area III. No study was related to Area II. Regarding the contribution of advanced practices in nursing to safe care, three studies demonstrated actions to reduce the risk of fall, one showed reduced risks in the placement of peripherally inserted central catheters (PICC), one study addressed infection control practices, one study presented improvements in care transition, one showed the implementation of standard assurance in anesthetic practice, one explained improvements in information systems to ensure better records with consequent improvements in care coordination, and three studies showed improvements in APN skills for safer care. Chart 1 shows information about the categories of studies and contributions of advanced practices to patient safety.

In this review, most studies were conducted in the United States (n=9) versus two studies in
Australia and one in Hong Kong, showing this subject presents regionalized discussions. No study of this review was conducted in Brazil.

The objective of three studies\(^{13-15}\) was to characterize the errors and adverse events to better understand how to minimize these problems. Another study aimed to analyze the satisfaction with the role played by nurse sedationists,\(^{16}\) three studies aimed to study APN training, including the evaluation of realistic simulation.\(^{17,22}\) Another study aimed to report the results of central venous catheters inserted by advanced nurses,\(^{18}\) and the purpose of three other studies was to analyze the reduction of fall in care settings.\(^{19,20,24}\) One study aimed to reduce levels of infection\(^{21}\) and, finally, another article aimed to analyze the role of advanced practice nurses in reducing length of stay and readmission rates.\(^{23}\)

Chart 1 shows the classification and categorization of studies selected in this review.

### Chart 1. Studies included in this integrative review – classification and categorization

<table>
<thead>
<tr>
<th>Author/Year/Country</th>
<th>Title</th>
<th>Journal</th>
<th>Study objective</th>
<th>Methodology</th>
<th>Conclusion</th>
<th>Categorization</th>
<th>Contribution to safe care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, Cho &amp; Bakken(^{13,14}) (2010) - USA</td>
<td>Identification of Hypertension Management-related Errors in a Personal Digital Assistant-based Clinical Log for Nurses in Advanced Practice Nurse Training</td>
<td>Asian Nurs Res (Korean Soc Nurs Sci)</td>
<td>Develop a taxonomy for detection of errors related to hypertension management and to apply the taxonomy to retrospectively analyze the documentation of nurses in Advanced Practice Nurse (APN) training</td>
<td>Quantitative and observational approach</td>
<td>The results provide an initial understanding of the nature of the errors associated with the diagnosis of hypertension and the management of nurses in APN training.</td>
<td>Area III</td>
<td>Support to develop educational interventions that promote the general skills of APN for patient safety.</td>
</tr>
<tr>
<td>Jones et al.(^{10}) (2011) - Australia</td>
<td>The role of the nurse sedationist</td>
<td>Collegian</td>
<td>Identify the benefits and the level of satisfaction for the role of nurse sedationists.</td>
<td>Qualitative and quantitative approach – interviews with and a questionnaire answered by patients and nurses</td>
<td>The results indicate the introduction of the role of nurse sedationist was positive, as it increases patient safety, generating a more collaborative approach to patient care, improving the work environment and strengthening multidisciplinary relationships. Patients also indicated a very high level of satisfaction with the service.</td>
<td>Area I</td>
<td>Increased ability to ensure standards of anesthetic practice, improving team relationships, patient satisfaction, and safety.</td>
</tr>
</tbody>
</table>
### Advanced practices and patient safety: an integrative literature review

<table>
<thead>
<tr>
<th>Author/Year/Country</th>
<th>Title</th>
<th>Journal</th>
<th>Study objective</th>
<th>Methodology</th>
<th>Conclusion</th>
<th>Categorization</th>
<th>Contribution to safe care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schnall et al.14(2012) - USA</td>
<td>Patient safety issues in advanced practice nursing students' care settings</td>
<td>Journal of Nursing Care Quality</td>
<td>Identify and characterize patient safety issues across advanced practice nursing (APN) care settings including ambulatory care visits.</td>
<td>Quantitative approach – questionnaire answered by 162 nurses from an APN training course.</td>
<td>The adoption of information technology can help improve patient safety issues in the APN settings.</td>
<td>Area I</td>
<td>Implementation of improvements in the information system to enhance communication and coordination of care so that patient care is safely performed.</td>
</tr>
<tr>
<td>Walton-Moss et al.17(2012) - USA</td>
<td>Advanced practice nursing students: Pilot test of a simulation scenario</td>
<td>Collegian</td>
<td>Develop a simulation scenario for APN students from a graduate health assessment course - Use of realistic simulation in an APN training course.</td>
<td>Quantitative approach - simulation</td>
<td>Clinical simulations with high fidelity human patient simulators provide APN students with opportunities to demonstrate clinical skills and judgment in a safe supportive environment.</td>
<td>Area III</td>
<td>Improved clinical skills and judgment of AP students to ensure safe care.</td>
</tr>
<tr>
<td>Schnell et al.27(2013) - USA</td>
<td>Advanced practice nursing students' identification of patient safety issues in ambulatory care</td>
<td>J Nurs Care Qual</td>
<td>Identify and characterize patient safety and explore the predictive factors of patient safety in the perspective of nurses enrolled in an educational institution of APN.</td>
<td>Quantitative approach – questionnaire answered by 172 nurses from an APN training course.</td>
<td>EPA education nurses identified a large number of issues related to patient safety in the outpatient environment. Greater complexity of patients was a significant predictor of the identification of a diagnosis or treatment problem.</td>
<td>Area I</td>
<td>Introduction of improvements in the information system to increase the communication ability between the teams and proper entries in medical records to ensure a safe diagnosis.</td>
</tr>
<tr>
<td>Alexandrou et al.21(2014) - Australia</td>
<td>Central Venous Catheter Placement by Advanced Practice Nurses Demonstrates Low Procedural Complication and Infection Rates - A Report From 13 Years of Service</td>
<td>Critical Care Medicine</td>
<td>Report procedural characteristics and outcomes from a central venous catheter placement service operated by advanced practice nurses.</td>
<td>Quantitative - Observational approach</td>
<td>The results suggest that a service provided by APNs can be beneficial, potentially improving patient safety and promoting organizational efficiency.</td>
<td>Area I</td>
<td>Reduction of risks in the placement of peripherally inserted central catheters performed by APNs.</td>
</tr>
<tr>
<td>Powell-Cope et al.18(2014) - USA</td>
<td>A qualitative understanding of patient falls in inpatient mental health units</td>
<td>J Am Psychiatr Nurses Assoc</td>
<td>Determine market segment-specific recommendations for prevention of falls in acute inpatient psychiatry.</td>
<td>Qualitative - Focus groups and interviews with 22 APNs, two physicians and one physical therapist.</td>
<td>Selling fall injury prevention to staff in psychiatric settings is similar to selling fall injury prevention to staff in other health care settings. Appealing to the larger construct of patient safety will motivate staff in psychiatric settings to implement best practices and customize these to account for unique characteristics of population needs.</td>
<td>Area I</td>
<td>Implementation of fall reduction measures for psychiatric patients, improving their safety.</td>
</tr>
<tr>
<td>Kirk et al.23(2015) - USA</td>
<td>Restraint Reduction, Restraint Elimination, and Best Practice: Role of the Clinical Nurse Specialist in Patient Safety</td>
<td>Clin Nurse Spec</td>
<td>Describe effective evidence-based data to reduce injuries and falls with the use of monitored mechanical restraint with frequent evaluations and reevaluations.</td>
<td>Quantitative approach - Experiment</td>
<td>APN management of the causes of agitation reduces the need for patient restraint, protecting patients from injury and increasing patient satisfaction.</td>
<td>Area I</td>
<td>Implementation of protective actions to reduce patient fall and restraint, contributing to patient safety.</td>
</tr>
<tr>
<td>Chan. Adamson &amp; Chow24(2016) - Hong Kong</td>
<td>Identifying Core Competencies of Infection Control Nurse Specialists in Hong Kong</td>
<td>Clinical Nurse Specialist</td>
<td>Confirm a core competency scale for Hong Kong infection control nurses at the level of advanced practice nursing.</td>
<td>Quantitative approach – Questionnaire answered by 112 infection control nurses.</td>
<td>Essential core competency items of advanced practice for infection control nurses in Hong Kong were identified based on the measurement criteria of the Rasch model.</td>
<td>Area I</td>
<td>Identification of key APN competencies in infection control to reduce the risk of infection and ensure safe care.</td>
</tr>
<tr>
<td>Gore &amp; Thompson25(2016) - USA</td>
<td>Use of Simulation in Undergraduate and Graduate Education</td>
<td>AACN Advanced Critical Care</td>
<td>Provide an overview of the use of simulation in undergraduate and graduate nursing education.</td>
<td>Quantitative approach - Simulation</td>
<td>High-quality simulation can increase opportunities for immersion and student learning.</td>
<td>Area III</td>
<td>Differeniated learning of AP students to develop skills for safer care.</td>
</tr>
<tr>
<td>Hsuath &amp; Dorcy26(2016) - USA</td>
<td>Improving Transitions of Care With an Advanced Practice Nurse: A Pilot Study</td>
<td>Clinical Journal of Oncology Nursing</td>
<td>Analyze the role of the APNs to reduce the length of stay, readmission rates, delays and treatment gaps during transitions of oncologic patients from hospitalization to outpatient care.</td>
<td>Quantitative approach - Experiment</td>
<td>Coordination of APN care can minimize transition gaps, improve patient safety, and increase the quality of care delivery with effectiveness and efficiency. The pilot program reduced the length of stay and infection rates.</td>
<td>Area I</td>
<td>Reduced gaps in care transition, improving patient safety.</td>
</tr>
<tr>
<td>Gray-Miceli, Mazzia &amp; Crane27(2017) - USA</td>
<td>Advanced Practice Nurse-Led Statewide Collaborative to Reduce Falls in Hospitals</td>
<td>Journal of Nursing Care Quality</td>
<td>Develop initiatives of advanced practices to reduce falls.</td>
<td>Quantitative approach - Experiment</td>
<td>A significant reduction was observed in patient fall rates.</td>
<td>Area I</td>
<td>Implementation of effective measures to reduce falls with a significant improvement in care safety.</td>
</tr>
</tbody>
</table>
Discussion

According to the results of the categorization of articles analyzed according to COFEN Resolution 581/2018,(7) 75% of the studies discuss advanced practices in different areas of care, which is the purpose of Area I of this regulation. It may indicate the concern is still about patient care. This study presents below what each of these articles addressed and their contributions to patient safety.

The studies showed that advanced practices in nursing can contribute to patient safety in different ways, by reducing the risk of falls,(24) minimizing the risk of infection,(21) improving communication in care transition,(23) reducing complications and infections in the placement of peripherally inserted central catheters (PICC),(18) and promoting safe sedation,(16) thus ensuring quality care and promoting continuous improvements. The results also suggest that care provided by specialized and specifically trained nurses generates low rates of complications in the hospital service, increasing organizational efficiency.(18) In this sense, APNs can improve communication between teams in care transition, initiating preparation for hospital discharge at admission, checking the patient’s needs during hospitalization for a safe transition,(23) and ensuring that all information is provided and understood, and that care planning meets the patient requirements.

Three studies indicated that advanced practice nurses (APNs) are important for the identification and treatment of adverse events and their causes, issues related to patient safety, including problems in practice, diagnosis and treatment, or more common problems resulting from poor communication, professionals in a hurry, and frequent interruptions of the work process.(13-15) One of them includes a taxonomy to detect errors in the management of hypertension and applies such taxonomy to retrospectively analyze the documentation of APNs in training.(13) This procedure allows a standardization for the correct investigation of incidents, an accurate analysis of clinical practice, and an evaluation of patient records.

The levels of infection and complication, which are another important aspect of patient safety, can be reduced when APNs are responsible for specific care. In a study conducted in Hong Kong,(21) the competencies of the APNs for infection control were measured using the Rasch scale, and training models were suggested to increase the infection control skills of APNs. Reduced levels of infections in these cases show that nurses present greater adherence to the protocols and can ensure better infection control, acting as indicators for other professionals.

The results also indicate that injuries caused by falls led APNs to implement actions to reduce such risks. One study used results from 38 hospitals that participated in fall prevention training, followed by 3-month training and guidance to develop initiatives focused on assessing fall risks, post-fall monitoring and assessment to demonstrate the reduction of these risks.(24) Also regarding risks of fall, one study about the use of patient restraint showed that nurses can manage the causes of agitation, the need for restraint is reduced, protecting patients from injuries and increasing patient satisfaction.(20) Another study showed that the implementation of actions to prevent injuries due to falls in psychiatric settings is similar to the fall prevention actions in other health care settings, and that it should appeal to a broader construction of patient safety, encouraging professionals in psychiatric settings to implement best practices and personalize them to consider the unique characteristics of the needs of this patient population.(19)

One study conducted in Australia(16) discussed the role of nurse sedationist, a specialty not yet in force in Brazil, and indicated that the introduction of this role was recognized as adding value through increased patient safety, in high-quality results for patients and improved multidisciplinary approach to health.

Regarding the categorization, 25% of the studies were related to Area III - Training and Research, addressing APN training and teaching methods, as the training of these nurses is also a concern presented in the studies analyzed in this review. The method used in the studies and considered as the most effective and robust uses realistic simulation to improve patient safety, communication and the
student’s ability to think and act as a nurse or APN, according to the article. This type of training allows clinical simulations with high fidelity human patient simulations in a safe supporting environment, providing advanced practice students with the opportunity to demonstrate clinical skills and judgment, favoring their learning and qualification for patient safety.

However, in this integrative review, no article related to Area II – Management was found. This result may indicate possible low attention to training for nurses specialized in management, or poor discussion and publication of studies addressing this topic.

Conclusion

The results obtained in this integrative review showed advanced practices in nursing can have a positive influence on patient safety, contributing to reduced rates of patient fall and infection risk, improvements in care transition, assurance of standards in anesthetic practices and insertion of catheters, improvements in systems to ensure proper records and coordination of care, and enhancement of APN skills with realistic simulation techniques. However, few studies were found on this subject, which may be justified by the fact that both patient safety and advanced practice in nursing are recent topics. When evaluating the categorization of the articles, a gap was observed in the discussion about advanced practice in nursing in COFEN Resolution 581/2018 – Area II – Management, such as Health Management, Nursing Management, Hospital Administration, Health Quality Management, among other advanced practices mentioned in this regulation. The factors associated with this gap are outside the scope of this review, but it must be fulfilled, since nursing management is an important activity for the development of all other areas. In addition, no national study was found in this review, and the approach took place in differentiated contexts. Considering the gaps identified and the results from the analysis of the studies included in this integrative review, studies on the subject should be encouraged, including in Brazil, and the growth of advanced practice in nursing is expected to contribute to care safety and help consolidate the excellence of the nursing profession. The authors expect that, based on the results of this review, broader discussions are held on this practice so that patients can receive increasingly safe care.

References


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