



REVIEW

Health professionals' knowledge about patient safety: an integrative review

Conhecimento de profissionais da saúde sobre segurança do paciente: revisão integrativa

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ABSTRACT

Objective: To analyze, in the literature, health professionals' knowledge about patient safety. **Methods:** An integrative review with searches and selection in five electronic databases: MEDLINE, CINAHL, Web of Science, LILACS and BDNF, using controlled and non-controlled descriptors indexed in the DeCS and MESH vocabularies. Primary studies with no time or language restrictions were included, with exclusion of duplicates, editorials, theses and dissertations. For analysis and synthesis purposes, the level of evidence classification based on the *Oxford Centre for Evidence-based Medicine* recommendations and the descriptive methods was used. **Results:** Eleven articles with level of evidence 2C and developed in the national and international contexts were selected. The level of general knowledge about patient safety among health professionals was considered low, involving significant limitations in the understanding of concepts and definitions, as well as in the application of theoretical assumptions in the care practice. In the categories investigated, certain variation of this knowledge level was observed. **Conclusion:** There are important gaps in health professionals' knowledge about patient safety, with the subjects presenting low knowledge levels. Therefore, permanent education stands out as a strategy to promote improvements.

Descriptors: Patient Safety. Health Personnel. Knowledge. Nursing. Education Continuing.

RESUMO

Objetivo: Analisar na literatura o conhecimento dos profissionais da saúde sobre segurança do paciente. **Métodos:** Revisão integrativa com busca e seleção em cinco bases eletrônicas de dados: MEDLINE, CINAHL, Web of Science, LILACS e BDNF, utilizando descritores controlados e não controlados indexados nos vocabulários DeCS e MESH. Foram incluídos estudos primários, sem delimitação temporal ou de idioma e excluídos os duplicados, editoriais, teses e dissertações. Para análise e síntese, utilizou-se a classificação do nível de evidência baseadas nas recomendações do *Oxford Centre for Evidence-based Medicine* e os métodos descritivos. **Resultados:** Foram selecionados 11 artigos desenvolvidos em contexto nacional e internacional, de nível de evidência 2C. O nível de conhecimentos gerais sobre segurança do paciente entre os profissionais de saúde foi considerado baixo, envolvendo limitações significativas no entendimento dos conceitos e definições, assim como na aplicação dos pressupostos teóricos na prática assistencial. Nas categorias investigadas, observou-se variação desse nível de conhecimento. **Conclusão:** Existem lacunas importantes no conhecimento de profissionais de saúde sobre segurança do paciente, que apresentam nível baixo de conhecimento. Destaca-se então, a educação permanente como uma estratégia para promover melhorias.

Descritores: Segurança do paciente. Pessoal de saúde. Conhecimento. Enfermagem. Educação continuada.

RESUMÉN

Objetivo: Analizar, en la literatura, el conocimiento de los profesionales de la salud sobre seguridad del paciente. **Métodos:** Revisión integradora con búsquedas y selección de materiales en cinco bases de datos electrónicas: MEDLINE, CINAHL, Web of Science, LILACS y BDNF, utilizando descriptores controlados y no controlados indexados en los vocabularios DeCS y MESH. Se incluyeron estudios primarios, sin restricciones temporales o de idioma y se excluyeron materiales duplicados, editoriales, tesis y disertaciones. Para el análisis y la síntesis se empleó la clasificación del nivel de evidencia sobre la base de las recomendaciones del *Oxford Centre for Evidence-based Medicine* y los métodos descriptivos. **Resultados:** Se seleccionaron 11 artículos desarrollados en los contextos nacional e internacional, con nivel de evidencia 2C. El nivel de conocimiento general sobre seguridad del paciente entre los profesionales de la salud se consideró bajo, con significativas limitaciones en la comprensión de los conceptos y las definiciones, al igual que la aplicación de los supuestos teóricos en la práctica asistencial. En las categorías investigadas se observó cierta variación de este nivel de conocimiento. **Conclusión:** Se percibe la presencia de importantes brechas en el conocimiento de los profesionales de la salud sobre seguridad del paciente, además de que los profesionales presentan un bajo nivel de conocimiento. En consecuencia, la educación continua se destaca como una estrategia para promover mejoras.

Descritores: Seguridad del Paciente. Personal de Salud. Conocimiento. Enfermería. Educación Continua.

INTRODUCTION

The debate on patient safety has intensified in recent decades, as care is an activity that can cause harms and which, in this context, is understood as the reduction of risks of unnecessary healthcare-related harms to an acceptable minimum level, and is considered as one of the quality pillars.⁽¹⁾

In Brazil, epidemiological projections carried out by the National Health Surveillance Agency (*Agência Nacional de Vigilância Sanitária*, ANVISA) demonstrate the magnitude of the problem by showing that, from May 2019 to April 2020, 153,126 incidents with healthcare-related harms, also known as Adverse Events (AEs), and that 65.61% of the deaths associated with AEs were due to failures during care, according to ANVISA data.⁽²⁾

Health professionals are important actors in this process of improving patient safety and care quality; therefore, they should have knowledge, skills and abilities for early identification of failures, aiming to prevent or reverse them when necessary and, thus, promote changes in the safety culture of the organizations in which they are inserted.⁽³⁾

Therefore, training in patient safety, in curricular terms both at undergraduate and graduate levels, is an imperative recommendation in Brazil, considering that health professionals need to understand their fundamental role in the prevention of AEs. As well as in-service training, highlighting permanent health education as a strategy to involve them, with regard to the different professional categories in order to identify possible risks and anticipate strategies to minimize occurrence of incidents.^(1,4)

Knowledge is an essential tool for grounding care on quality, efficacy and safety elements, as well as favoring the development of critical capacity, attitude and professional practice, leading to planning and implementation of care strategies capable of guaranteeing health promotion and prevention of avoidable conditions.⁽⁵⁾

Knowledge assessment can contribute to decision-making and consolidation of the evidence-based practice; when limitations are found, they should be considered as parameters for permanent education activities, leading to care qualification and to a reduction of the epidemiological, financial, social and health impacts.⁽³⁾

Although the importance of assessing professional knowledge about patient safety is recognizable, in the teaching and research context this has been addressed more frequently with undergraduate students.⁽³⁾ Considering this gap, the current study aims at analyzing, in the literature, health professionals' knowledge about patient safety.

METHODS

An integrative literature review based on the theoretical framework by Whitemore and Knafl, and conducted in six research stages: elaboration of the research question; search and sampling in the literature; definition of all the information to be extracted from the articles selected; critical evaluation of the evidence included; interpretation

Health professionals' knowledge about patient.. of the results; knowledge synthesis and presentation of the review.⁽⁶⁾

The research question was prepared using the PICO strategy: health professionals were defined as Population, knowledge was defined as Phenomenon of interest, and patient safety was defined as Context.⁽⁷⁾ Thus, this review was conducted by asking the following question: What do health professionals know about patient safety?

The bibliographic survey took place between May and July 2021 by consulting the following databases: Medical Literature Analysis and Retrieval System online (MEDLINE via PubMed®), Cumulative Index to Nursing and Allied Health Literature (CINAHL-EBSCO), Web of Science™, *Literatura Latino-Americana de Ciências da Saúde* (LILACS) and *Banco de Dados em Enfermagem* (BDENF) via *Biblioteca Virtual em Saúde* (BVS).

In order to operationalize the search, controlled and non-controlled descriptors indexed in the Descriptors in Health Sciences (*Descritores em Ciências da Saúde*, DeCS) and Medical Subject Headings (MESH) vocabularies were selected. Chart 1 presents the search strategy generated in each database from combining the terms with the *OR* and *AND* Boolean operators.

The materials included were primary studies with no time or language restrictions which analyzed health professionals' knowledge about patient safety. Exclusion was conditioned to the following criteria: duplicate studies, editorials, theses, dissertations and reviews.

For data extraction, an instrument developed by the authors was used, prioritizing identification variables (main author, objective, study locus and year of publication), methodological aspects (design and level of evidence), main results and conclusions.

The recommendations proposed by the *Oxford Centre for Evidence-based Medicine* were used to classify the Level of Evidence, considering the following: 1A - systematic review of randomized controlled clinical trials; 1B - randomized controlled clinical trial with narrow confidence interval; 1C - therapeutic results of the "all or nothing" type; 2A - systematic review of cohort studies; 2B - cohort study (including lower-quality randomized clinical trials); 2C - observation of therapeutic results or ecological studies; 3A - systematic review of case-control studies; 3B - case-control study; 4 - case report (including cohort or lower-quality case-controls); and 5 - experts' opinion.⁽⁹⁾

In order to analyze and synthesize the results, two descriptive methods were used in which the diverse evidence was presented in a chart, according to the variables of interest for this research.

Chart 1. Expression of the search generated in the databases investigated. Teresina, Piauí, Brazil, 2021.

Database	Search terms
MEDLINE	(((((("Health Personnel"[Mesh]) OR ("health personnel")) OR ("health care professionals")) OR ("Healthcare Workers")) OR ("health care providers")) AND (("Knowledge"[Mesh]) OR ("knowledge")) AND (("Patient Safety"[Mesh]) OR ("patient safety"))
CINAHL	((MH "Health Personnel") OR ""Health Personnel"" OR ""Health Care Professionals"" OR ""Healthcare Workers"") AND ((MH "Knowledge") OR ""Knowledge"") AND ((MH "Patient Safety") OR ""Patient Safety"")
Web of Science	TS=(("health personnel") OR ("health care professionals") OR ("healthcare workers") OR ("health care providers")) AND TS=(("knowledge")) AND TS=(("patient safety"))
LILACS and BDNF	((mh:("Pessoal de Saúde")) OR ("Pessoal de Saúde") OR ("Health Personnel") OR ("Personal de Salud") OR ("Profissionais da Saúde") OR ("Trabalhadores da Saúde")) AND ((mh:("Conhecimento")) OR ("Conhecimento") OR ("Knowledge") OR ("Conocimiento")) AND ((mh:("Segurança do paciente")) OR ("Segurança do paciente") OR ("Patient Safety") OR ("Seguridad del Paciente")) AND (db:("LILACS" OR "BDNF"))

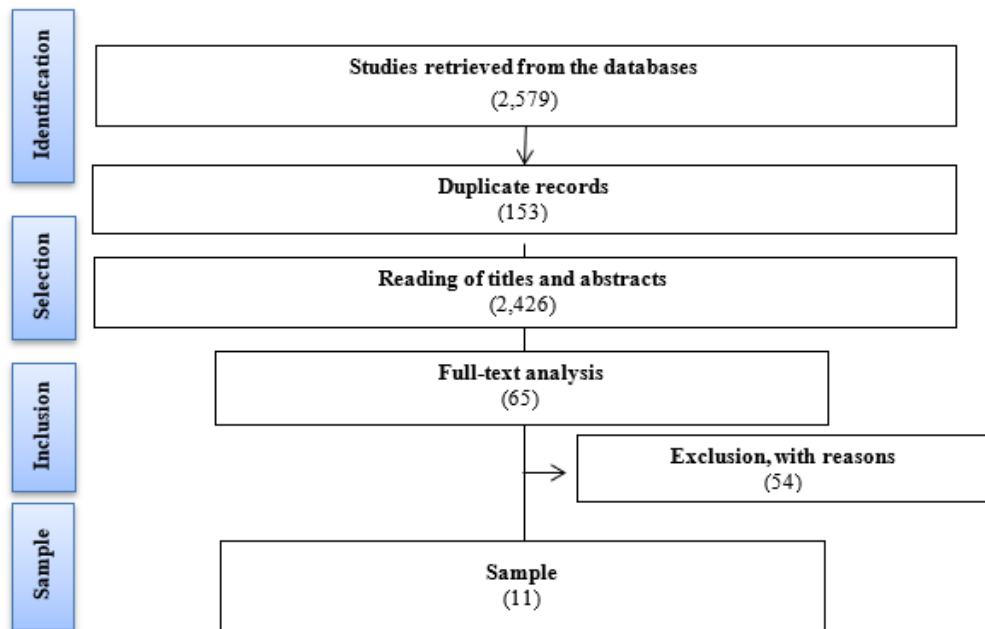
Source: authors (2022).

RESULTS

The search yielded a total of 2,579 productions: 1,532 in MEDLINE, 777 in CINAHL, 224 in Web of Science and 46 in LILACS and BDNF. After applying the eligibility criteria while reading titles and abstracts and analyzing the full texts, a sample

comprised by 11 articles was obtained. The flow for identification, selection, eligibility, inclusion and sample definition followed the recommendations set forth in the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* (Figure 1).⁽⁸⁾

Figure 1. Flow corresponding to selection of the study sample. Teresina, Piauí, Brazil, 2021.



Source: authors (2022).

Among all 11 studies included, it was verified that 7 were available in the MEDLINE database, 2 in CINAHL, 1 in Web of Science and 1 in LILACS. The studies were distributed between 2012 and 2020, with most of them (4 papers) published in 2017, followed by 2018 and 2020 with 2 each year and by 2012, 2015 and 2019 with one publication each. The research studies were developed in various contexts of the national and international literature, namely: Brazil, Lithuania, India, Iran, Canada, Italy, Sweden, Spain and Australia. In addition, all the studies presented Level of Evidence 2C.

The level of general knowledge about patient safety among health professionals was considered

low, involving limitations in understanding concepts and definitions, as well as difficulty applying the theoretical assumptions in the care practice. Limited knowledge proved to be a barrier to patient safety and care quality. In addition to that, among the professional categories that took part in the research studies, variation was observed in the knowledge level.

The synthesis and distribution of the productions included are presented in Chart 2, according to main author, year and locus of the study, design adopted and Level of Evidence and category investigated, as well as the main results and conclusions regarding the professionals' knowledge about patient safety.

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Chart 2. Synthesis of the studies included in the review (n=11). Teresina, Piauí, Brazil, 2021.

Author, year and locus	Database	Design and Level of Evidence	Professional category investigated	Main results and conclusions
Moreira et al. ⁽¹⁰⁾ 2015 Brazil	LILACS	Observational Cross-sectional 2C	Physicians, nurses and nursing technicians	Limited knowledge about Adverse Events; 45.0% of the professionals were unaware of their meaning, although recognized them as part of the work process.
Brasaitė et al. ⁽¹¹⁾ 2017 Lithuania	<i>Web of Science</i>	Observational Cross-sectional 2C	Physicians, nurses and nursing technicians	Fairly low level of knowledge about safety, especially in terms of general knowledge about patient safety. The information they had about the theme was associated with knowledge acquired in professionalizing courses, continuing education and their own experience.
Ananya et al. ⁽¹²⁾ 2019 India	CINAHL	Observational Cross-sectional 2C	Physicians, nurses and paramedics (physiotherapists, nutritionists, laboratory technicians, radiologists)	The highest adherence rate to the safety goals was observed among the physicians (72%), followed by the nurses (69%) and the paramedics (68%). Although the physicians' adherence rate is 72%, 51% of them were unaware of the goals and the rest had partial knowledge about them. Among the nurses, 21% were aware of the goals and followed them, 23.5% were unaware and 55% had partial knowledge about the goals. The reason for the team not meeting the goals was lack of knowledge or excessive workload, which contributed to a reduction in implementation ease or, sometimes, a combination of both.
Musmano et al. ⁽¹³⁾ 2018 Brazil	CINAHL	Descriptive, exploratory, qualitative 2C	Community health agents	Understanding of the meaning of patient safety is limited to the concept, associating it to harm control and to the Standard Operating Procedures (SOPs). Limited knowledge about patient safety, although they manage to identify the occurrence of incidents.
Mahdaviyazad et al. ⁽¹⁴⁾ 2020 Iran	MEDLINE	Observational Cross-sectional 2C	Physician and nurses	Only 13.8% of the physicians and 10.8% of the nurses presented good knowledge levels. Although a significant percentage of participants asserted having acceptable knowledge about the definition and classification of medical errors, the knowledge scores showed low levels.
VanDenKerkhof et al. ⁽¹⁵⁾ 2017 Canada	MEDLINE	Observational Cross-sectional 2C	Nursing technicians	The professionals feel more confident with knowledge acquired in the clinical environment than in a classroom. Nursing technicians are more confident in all the patient safety domains. The ability to recognize and respond to immediate risks is related to the professionals' knowledge.
Flotta et al. ⁽¹⁶⁾ 2012 Italy	MEDLINE	Observational Cross-sectional 2C	Physicians	Inconsistent knowledge, 90% asserted that it only concerns counting surgical items during an invasive procedure, 60% reported that medical errors are less likely in hospitals performing a high volume of procedures. 70% indicated that the number of nurses exerts a direct influence on patient safety. 78% believes that reporting errors voluntarily can be effective in reducing their number.
Andersson, Hjelm ⁽¹⁷⁾ 2017	MEDLINE	Descriptive, exploratory, qualitative 2C	Nurses	The nurses describe the meaning of patient safety in terms of care, adequate treatments and a sensation of safety. The barriers for patient safety were described as lack of knowledge, lack of sufficient resources, non-communication and negative

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Sweden				attitudes in relation to reporting incidents.
Andrés et al. ⁽¹⁸⁾ 2018 Spain	MEDLINE	Observational Cross-sectional 2C	Physicians, nurses, pharmacists, nursing technicians and others (administrative, dentists, etc.)	60% of the participants answered the questions correctly, identifying some areas in need of improvement in the safety practices (hand hygiene with 66% of incorrect answers) and in risk management (investigation and identification of adverse events, with 62% and 56% of incorrect answers, respectively).
Murray, Sundin, Cope 2020 ⁽¹⁹⁾ Australia	MEDLINE	Observational Cohort 2C	Nurses	Patient safety was defined as preventing harms to provide the expected care level, minimize risks and be aware of the activities in the surroundings. Knowledge was described as integrated into their clinical practice. This can indicate confidence in theoretical knowledge, but certain inability to translate it into the real-world practice. The professionals failed to recognize their own roles in learning and transferred the responsibility for their knowledge deficits to their undergraduate studies and to their workplace.
Oliveira et al. ⁽³⁾ 2017 Brazil	MEDLINE	Observational Cross-sectional 2C	Physicians, nurses, physiotherapists, pharmacists, dentists	Knowledge about patient safety was limited. The item that was best evaluated was the one dealing with the National Patient Safety Program (with 72% of correct answers) whereas the worst evaluation item refers to the recommendation to identify the patient (29% of correct answers). Nurses were the most qualified professionals to take the lead in the strategic management actions for safe assistance (89% of correct answers).

*MEDLINE (Medical Literature Analysis and Retrieval System on-line)

*CINAHL (Cumulative Index to Nursing and Allied Health Literature)

Source: authors (2022).

DISCUSSION

The studies included in this review are concentrated between 2012 and 2020; in other words, it is a relatively recent theme in research. Although patient safety is not a current concern, the movement gained prominence after the *Institute of Medicine* report entitled *To err is human*, published in 1999, which mobilized professionals and researchers around the world by revealing the impact of errors and AEs on healthcare safety and quality.⁽²⁰⁾

In Brazil, an important milestone was the institution of the National Patient Safety Program (*Programa Nacional de Segurança do Paciente*, PNSP) through Ordinance No. 529 of 2013, which has the specific objective of producing, systematizing and disseminating knowledge about patient safety, justifying the Brazilian productions with higher occurrence after enactment of the PNSP.⁽²¹⁾

The definition of patient safety by health professionals in some studies was unsatisfactory, only associated with Standard Operating Procedures (SOPs)⁽¹³⁾ for proper treatment and a sense of safety.⁽¹⁷⁾ However, although restricted, the professionals link the concept with harms prevention to provide the expected care level, minimize risks and be aware of the surrounding activities.⁽¹⁹⁾

Marginal knowledge is evidenced, as the professionals are aware and mention the importance of safe practices, but they relate them to operating procedures. A health institution with well-established safety in its work process leaves no doubt about its existence in terms goals and protocols, as its benefits are visible and prioritized by the management.⁽²²⁾

Although the professionals asserted having knowledge about the definition and classification of errors and recognized AEs as part of their work process, as well as the importance of reporting errors, the knowledge scores in the study evaluations were at low levels.^(10,14,16) They also stated that they feel more confident with the knowledge acquired in the clinical environment, when compared to what they learned in the classroom.⁽¹⁴⁾ This shows that knowledge about patient safety is integrated into the clinical practice, although it reflects the difficulty they have incorporating theory into practice.⁽¹⁹⁾

Training in quality can be an incentive for the development of innovative programs that contribute to aligning the professionals' training and preparing them to work in an integrated way towards a safer health system, for which the need to reinforce patient safety teaching in the curricula of undergraduate and graduate courses is acknowledged, as well as in permanent and/or continuing education in health services, seeking to incorporate these topics into the clinical practice, in a comprehensive and structured way.⁽²³⁾

Learning based on problems and simulated experiences is a strategy that encourages discussion and active collaboration, leading to a more realistic view of the care practice and to the skills development to act in real situations.⁽²³⁾ Incorporating patient safety in the curricula, as well as active participation, is fundamental to bring theory closer to the practice and offer contributions to the work process of future professionals, favoring

Health professionals' knowledge about patient.. the development of a safety culture even in their academic path, as it refers to the set of individual and group values, perceptions and behaviors related to safety, which can be built and polished through those strategies.⁽¹⁾

The level of knowledge about patient safety among the professionals indicated by the studies was generally low,^(3,10-11,13-14,18) and there was also variation in this level across the different categories and with emphasis on Nursing, which presented better results.⁽³⁾ Due to their proximity and greater time in contact with the patients, the Nursing team gains prominence by carrying out safety actions in the hospital environment.⁽²⁴⁾

Patient safety is naturally perceived differently across the different professional categories, and even by the managers of an organization. In this way, promoting a safety culture is a complex activity constituted by challenges, which requires commitment and dedication from those involved.⁽²⁵⁻²⁶⁾ To promote patient safety, individual effort or a single group effort is not enough; on the contrary, a structured goal is required throughout the organization.⁽²⁷⁾

In some studies, lack of knowledge among the professionals was identified as a barrier to patient safety.^(12,17) An important action, such as AE notification, can be hampered due to lack of knowledge or training, leading to the need to make clear to the professionals what, how and where to notify, in addition to making them aware of the importance of this act, which depends on the efforts undertaken in search of learning from errors.⁽²⁸⁾

It is understood that knowledge is an important tool for changes and that it implies improvements; in this sense, qualification is an ally and the professionals themselves recognize this relevance, citing the responsibility of permanent education in their work environments.⁽¹⁹⁾ Therefore, inclusion of the topic in educational actions should be a priority in order to create opportunities for devising new safe health care practices.⁽²⁶⁻²⁷⁾

The study limitation refers to the prevalence of studies with LE 2C, characterized as observational, as they do not establish any causality relationship between the research variables. However, this design is fundamental, as it favors understanding of the phenomena, and is often used to indicate risk and health protection factors.⁽²⁹⁾ It is considered that the study helped to understand the importance of permanent education in promoting patient safety. It is suggested to conduct future studies focused on educational interventions targeted at health professionals.

CONCLUSION

By means of this study, it was possible to identify the presence of important gaps in the health professionals' knowledge about patient safety, with unsatisfactory knowledge levels. The results of unsatisfactory knowledge reflect the value and importance of training, highlighting permanent education as a strategy to promote changes and support the development of a safety culture and

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