

## Hospital patient safety at the emergency department – a systematic review

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**Abstract** *Patient safety in health care is the cornerstone of quality in nursing care. It is a duty of nurses and an objective of the health organizations. This article aims to analyze the scientific evidence on the nurses' perception and opinion on patient safety in the emergency department. Systematic literature review with 3 steps. 1) Primary search at CINHAI and MEDLINE. 2) A broader search, using the same keywords and search terms in the remaining database of the EBSCOHost platform. 3) Search the bibliographic references of the selected articles. The selected studies were published between 2014 and 2019. Five articles were selected. The nurses' perception reveal that the work environment, teamwork and matters related to the leadership of hierarchical superiors are fundamental factors to improve the quality of care provided and patient safety. Promoting teamwork improves patient care, reduces adverse events and improves quality. Recognizing the nurses' perception on patient safety culture in emergency services, contributes to improving the quality of care provided.*

**Key words** *Emergency service, Hospital, Nurses, Patient safety, Review*

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## Introduction

The nursing practice environment (NPE) is critical to the success of health systems<sup>1</sup> and is related to the nursing care quality (NCQ), patient safety and the effectiveness of care for patients and the efficiency of organizations<sup>2-4</sup>.

Promoting the quality of care that nurses provide and, therefore, contribute to the improvement of the clinical practice contexts is a vital factor for professional and patient satisfaction. NCQ is an essential element in the profession and is related, among other aspects, to the direct relationship between patient and nurse. NCQ depends on many factors, mainly the NPE<sup>3</sup>.

Lake defines the practice environment as the organizational characteristics of a working context that facilitate or restrict the professional nursing practice<sup>1,3,5</sup>. A favorable NPE leads to improved patient outcomes and it is an essential factor for increasing the nurses' satisfaction, being essential to maintain teams with safe staffing and retain the nurses in them<sup>3,4</sup>. A favorable NPE is characterized by the adequacy of human and material resources, active participation of the nurses in the governance of organizations, quality of care and the provision of nursing care, and good relationships between different professional groups in health services<sup>1,5</sup>. According to scientific evidence from recent decades, these favorable NPE have significant impacts on the levels of quality and safety of patient care, health professionals' well-being, quality and productivity, and effectiveness of services, organizations and health systems<sup>1</sup>.

On the other hand, poor NPEs, with lack of management support, weak leadership and poor multidisciplinary relationships are associated with: decreased NCQ; adverse events in patients<sup>6</sup>, such as errors; increased mortality and complications; hospital readmissions due to complications; increase in health care costs; ineffective care delivery, conflicts and stress among health professionals<sup>7</sup>; professional dissatisfaction and increased nurse turnover<sup>3</sup>. All these aspects strongly contribute to patients' dissatisfaction with the care they receive.

A safe NPE is characterized by good professional relationships between its members, management support for professionals and well-balanced working hours<sup>3,8,9</sup>. It is also characterized by the adequacy between the workload and the nurses' competences, time to meet the patients' needs, professional autonomy, adequate resources and opportunities for professional advancement<sup>3,8,9</sup>.

Nurse managers play a key role in creating a favorable/positive NPE<sup>8</sup> and in promoting the provision of quality care<sup>2,3</sup>. They can also provide the necessary tools for the professional development of nurses and future managers<sup>10</sup>. The nursing leadership plays a central role in quality patient care, which involves four key activities: facilitating effective and ongoing communication; strengthening of intra- and interprofessional relationships; building and maintaining the teams; and peer involvement<sup>2</sup>. Leadership influences the NPE<sup>3,11</sup> and the quality of nursing care<sup>2</sup>. Nurses, as leaders, are essential to improve communication with and between the team to achieve goals, aiming at the quality of care, patient safety and innovation in health<sup>2,12</sup>.

Without adequate competences and knowledge, it becomes difficult for nursing leaders to maintain a favorable NPE<sup>3,8</sup>. The nurse manager is an engine of change on the path to excellence, organizing the existing resources and creating a safe environment in nursing care<sup>3</sup>.

Studying the NPEs allows us to obtain evidence on how to increase the quality of nursing care<sup>8,13,14</sup> and patient safety, how to improve the achievement of results<sup>13,15</sup> and reduce complications for clients<sup>16,17</sup>, namely by improving disease control and preventing associated risks<sup>18</sup>.

Patient safety must always be the objective of the care provided in emergency services. It is not always easy to attain, due to the presence of patients with complex and highly acute conditions, a difficult-to-control work environment and multidisciplinary teamwork that involves frequent transfers with the potential for communication failures<sup>19</sup>.

Emergency department health professionals work under high-pressure conditions, with multiple interruptions and time constraints. Thus, there is an increased possibility of errors and unfavorable patient outcomes. Although there are many approaches aimed to improve patient safety, establishing a safety culture is considered a core strategy<sup>19</sup>. The emergency department is a challenging work environment due to the high influx and turnover of patients, lack of control and the nurses' work overload and communication difficulties. Thus, it becomes an environment that is vulnerable to risks for patients, putting their safety at risk<sup>20</sup>. Glickman et al.<sup>21</sup> found that 8.5% of the problems identified by the patients were related to their safety. They found in their study that the emergency department has adverse incidents and was the third most common location for adverse incidents in hospitals.

The working environment is an essential factor in this topic.

Therefore, we consider it essential to analyze the scientific evidence about patient safety in a hospital emergency department, according to the nurses' opinion. The guiding question of this review is: "What is the nurses' opinion about patient safety in the context of a hospital emergency department?"

## Methods

This review was based on the methodology proposed by the Joanna Briggs Institute for reviews<sup>22</sup>, aiming at "Analyzing the scientific evidence about the nurses' perception of the safety culture in an emergency department." This systematic review answers the question and is based on the PCC (population, concept and context) elements, taking into account the inclusion criteria. The review question is: "What is the nurses' perception about the safety culture in an emergency department?" The following databases were searched to identify review studies related to nurses' perception of the safety culture in the emergency department, published between 2014 and 2019: CINAHL Complete; MEDLINE Complete; Nursing & Allied Health Collection: Comprehensive; Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Cochrane Methodology Register; Library, Information Science & Technology Abstracts; MedicLatina, via EBSCOhost - Research Databases; BVS - Biblioteca Virtual da Saúde, PubMed, RCAAP - Open Access Scientific Repositories of Portugal. The initial search strategy used search terms mapped to Medical Subject Headings (MeSH). The following descriptors were used: #1 MeSH Emergency department; #2 MeSH Nurse's perception; #3 MeSH Patient Safety; #4 MeSH Safety culture e #4 [#1 AND #2 AND #3 OR #4] (explode all trees).

To identify relevant studies that met the defined inclusion criteria, surveys were carried out that included the studies published between 2014 and 2019, in Portuguese, English and Spanish. After their combination with the Boolean operators in search engines to obtain the full texts of the publications that had been identified, the following formulations resulted: (("Emergency department") AND "Nurse's perception") AND "Patient Safety") OR "Safety culture".

The following were defined as inclusion criteria: studies published in the aforementioned

databases, presented in full text, in English, Portuguese and Spanish, and whose title and/or abstract cited the nurses' opinion on patient safety in the context of the hospital emergency department.

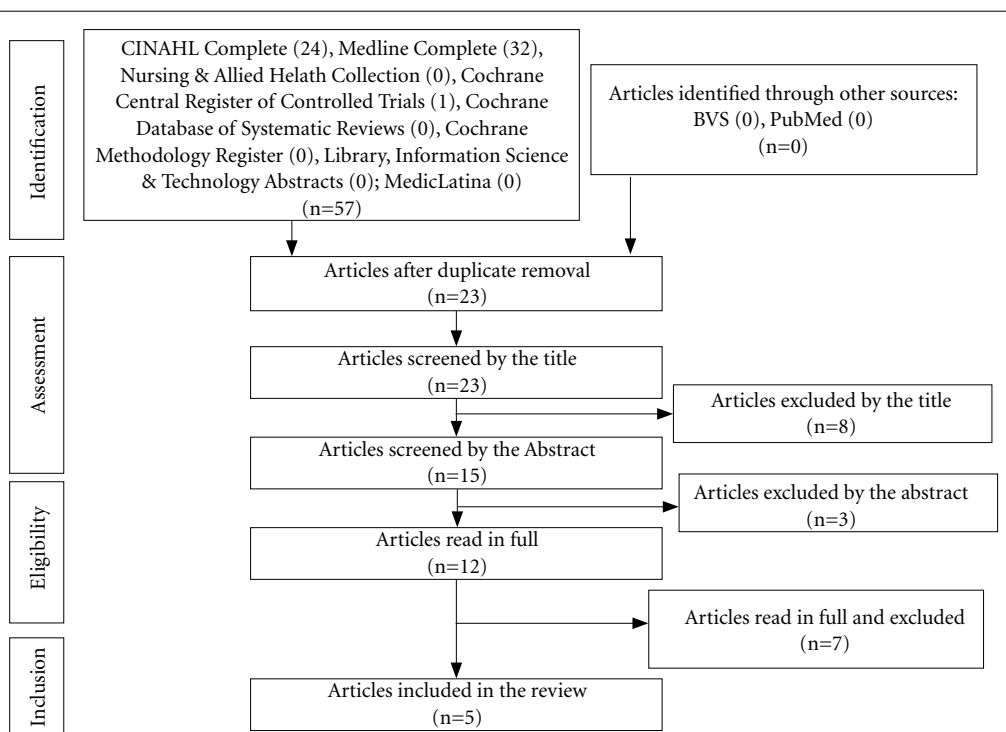
The selection process was based on the Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist for systematic reviews<sup>23</sup> and the Joanna Briggs Institute methodology regarding the guidelines of a systematic review<sup>22</sup>, which was used as part of the search strategy. The full text of each article was reviewed to determine whether it met the study inclusion criteria by two reviewers after discussions between them to reach a consensus on the exclusion of articles.

The search in the databases resulted in the identification of 57 articles. Thus, in the first phase, the critical and reflective reading of the titles and abstracts of the identified studies was carried out. In a second phase, after removing the repeated articles in the databases (n = 23), a sample of 34 articles was established. After applying the inclusion criteria, a sample consisting of 15 articles was considered for eligibility. Subsequently, a careful analysis of the selected articles was carried out, with the exclusion of five articles as they did not discriminate the nurses' perceptions among those of health professionals and retaining five articles from which evidence was extracted related to the nurses' perception about the safety culture in the emergency department. At this phase, aiming to organize the entire analysis by performing an exploratory reading of each article, we identified, translated and transcribed phrases/words that corresponded to the topic of nurses' perception about the culture of safety in the emergency department. Aiming to systematize the information from the articles, the data extracted from the studies were descriptively compiled into a previously created table, which facilitated the identification and reformulation of thematic categorizations.

Figure 1 depicts the results of the analysis phases, according to the PRISMA Flow Diagram<sup>23</sup> model.

## Data extraction

The data extracted from the articles were aligned with the objectives and research questions and the respective instrument indicated by the analysis methodology developed by the Joanna Briggs Institute<sup>22</sup>. Both reviewers independently analyzed the first five studies using the



**Figure 1.** Diagram with the study selection process – PRISMA.

Source: Authors.

data form, and subsequently met to determine whether the approach to the extracted data was consistent with the present research<sup>24</sup>.

Chart 1 shows the synthesis of the articles included in the review..

## Results and discussion

The analyzed articles are unanimous in considering that knowledge of the perceptions of health professionals, especially nurses, about patient safety in the context of emergency services contributes to improving patient care, reduces adverse events and can concentrate the efforts on providing quality care. Promoting safe practice environments and, consequently, promoting patient safety are two main challenges for hospital organizations. When trying to improve these two results in a synergistic and interconnected way, psychosocial working conditions, leadership and perceptions of the patient safety culture should be considered. The studies showed that these key topics are interrelated and create a critical founda-

tion for the promotion of patient safety in the emergency department. Patient safety is promoted, with an effect on the nursing practice environment in order to ensure the quality of nursing care.

Health organizations should promote the development of patient safety<sup>28,29</sup>. The health organizations' safety culture is related to the product of values, attitudes, perceptions, competences and behavior patterns of individuals and groups that determine the commitment, the style and proficiency of an organization's safety and health management<sup>30</sup>. Emergency services with a positive patient safety culture are characterized by communications based on mutual trust, shared perceptions of the importance of safety and trust in the effectiveness of preventive measures<sup>28</sup>.

The patient safety culture reflects how safety is seen and treated, in the specific case of the emergency department. However, the nurses' perceptions are not always positive<sup>27</sup>, regardless of gender, length of professional experience in the emergency department and position held, suggesting the need for improvements at the level

**Chart 1.** Synthesis of articles selected for the review.

<b>Title of the article, author, year and country</b>	Rigobello MCG, Carvalho REFL, Guerreiro JM, Motta APG, Atila E, Gimenes FRE (2017). The perception of the patient safety climate by professionals of the emergency department <sup>25</sup>
<b>Study type</b>	Quantitative, descriptive, cross-sectional study.
<b>Study objective</b>	To assess the patient safety climate from the perspective of health professionals working in the emergency department of a hospital in Brazil.
<b>Population and sample</b>	The study sample consisted of 125 health professionals.
<b>Instruments used</b>	The Safety Attitudes Questionnaire (SAQ) – Short Form 2006, validated and adapted to Portuguese.
<b>Results</b>	Most participants were female (57.6%) and had worked at the emergency department for over ten years (56.8%); 49.6% were nurses. The participants demonstrated satisfaction with their work and dissatisfaction with the management of issues related to patient safety. The final mean score on the SAQ was < 75 (59.71 ± 14.82), indicating that the participants' perceptions of the safety climate were negative. The participants' perceptions were negative for all analyzed variables, regardless of gender, professional experience in the emergency department and position held, suggesting the need for improvements in terms of patient safety in the emergency department. None of the analyzed variables showed statistical significance. Regarding the SAQ domains, the results of five of the six domains indicated the need for improvement: in teamwork, safety culture, the recognition of stress, the management of the emergency room and the hospital, and the working conditions.
<b>Title of the article, author, year and country</b>	Burström L, Letterstål A, Engström M-L, Berglund A, Enlund M (2014). The patient safety culture as perceived by staff at two different emergency departments before and after introducing a flow-oriented working model with team triage and lean principles: a repeated cross-sectional study <sup>26</sup>
<b>Study type</b>	Cross-sectional study
<b>Study objective</b>	To study the patient safety culture in the emergency department at two different hospitals before and after a quality improvement (QI) project aimed at increasing patient safety.
<b>Population and sample</b>	Several professional groups participated, most of them nurses, with a prevalence in the age group from 25 to 44 years. In all groups, most health professionals had 1 to 5 years of professional experience, except the nurses from the municipal hospital, who mostly had more than 21 years of professional experience. The predominant duration of years of professional experience at the emergency department was 1 to 5 years
<b>Instruments used</b>	The Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire was used before and after a quality improvement project aimed at improving patient safety in the emergency department of two hospitals, a municipal hospital and a university hospital, in two different cities in central Sweden
<b>Results</b>	At the municipal hospital, a difference was observed in two dimensions, teamwork and open communication, with a higher score in patient follow-up. At the university hospital, a higher patient follow-up score was obtained. The most valued factor to ensure a culture of patient safety in both hospitals was teamwork

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of patient safety in the emergency department, in terms of teamwork, safety culture, the recognition of stress, the management of the emergency department and the hospital and the working conditions. The valorization of teamwork and open communication as a guarantee of a patient

safety culture<sup>25,27-29</sup>, is common to all analyzed studies.

The safety attitudes of physicians and nurses in the emergency services in Saudi hospitals are less positive and are correlated with the number of reported errors<sup>27</sup>. Safety training interventions

**Chart 1.** Synthesis of articles selected for the review.

<b>Title of the article, author, year and country</b>	Alzahrani, N, Jones R, Abdel-Latif ME (2018). Attitudes of doctors and nurses toward patient safety within emergency departments of two Saudi Arabian hospitals <sup>27</sup>
<b>Study type</b>	Cross-sectional study
<b>Study objective</b>	To investigate the attitudes of doctors and nurses towards the patient safety culture in emergency services in two Saudi hospitals
<b>Population and sample</b>	Sample consisting of 503 doctors and nurses working in the emergency department
<b>Instruments used</b>	The Safety Attitudes Questionnaire (SAQ) was used for data collection
<b>Results</b>	The mean score for each SAQ dimension was <75%, indicating that nurses and physicians generally had less positive attitudes towards patient safety, particularly in the stress recognition dimensions (58.1%) and perceptions at the hospital management level (56.9%). Nurses showed lower scores in the perception of teamwork ( $p < 0.01$ ), while physicians showed lower scores in working conditions than nurses ( $p < 0.01$ ). There was a significant correlation between the number of reported errors and teamwork climate, job satisfaction and working conditions
<b>Title of the article, author, year and country</b>	Van Noord IV, Wagner C, Van Dyck C, Twisk JWR, De Bruijne MC (2014). Is culture associated with patient safety in the emergency department? A study of staff perspectives <sup>28</sup>
<b>Study type</b>	Cross-sectional study
<b>Study objective</b>	To investigate the associations between dimensions of patient safety culture and levels of patient safety, as reported by an emergency department team, and compare these associations between nurses and physicians
<b>Population and sample</b>	Sample consisting of 480 nurses, 159 physicians and 91 other emergency department professionals from 33 Dutch central hospitals
<b>Instruments used</b>	The Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire was used for data collection
<b>Results</b>	Most participants had worked in the emergency department for less than ten years. In the non-adjusted analyses, all dimensions of patient safety culture were positively associated with the reported level of patient safety and six of these associations with patient safety were statistically significant after adjustment (teamwork, frequency of adverse event reporting, open communication, feedback on and learning from errors, hospital management support for patient safety). Differences were found between the perceptions of nurses and physicians in two dimensions (frequency of notification of adverse events and hospital management support regarding patient safety). The perception of physicians in relation to the culture of patient safety in the emergency department was more positive than that of nurses, who consider the lack of cooperation between team members as the most negative aspect, interfering with patient safety
<b>Title of the article, author, year and country</b>	Tourani S, Hassani M, Ayoubian A, Habibi M, Zaboli R (2015). Analyzing and prioritizing the dimensions of patient safety culture in emergency wards using the TOPSIS technique <sup>29</sup>

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and management support seem to be the most likely ways to improve the health professionals' attitudes and performance in relation to patient safety.

Teamwork, job satisfaction and the nursing practice environment are correlated with a lower number of reported errors<sup>27</sup>. These factors are reported by and valued by nurses as promoters of patient safety in an emergency department<sup>27</sup>.

Management support, professional performance, teamwork, feedback from nurse managers, training to deal with errors are significant factors when promoting patient safety<sup>29</sup>.

The nurses indicated that the human factors are the most effective and important in improving the patient safety culture in the emergency department<sup>29</sup>. The results showed that the expectations and performance of the hierarchical

**Chart 1.** Synthesis of articles selected for the review.

<b>Study type</b>	Analytical-descriptive and cross-sectional study
<b>Study objective</b>	To analyze aspects of patient safety culture in the emergency department of hospitals affiliated with Tehran University of Medical Science
<b>Population and sample</b>	Sample consisting of 270 doctors and nurses
<b>Instruments used</b>	For data collection, the standard Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire was used
<b>Results</b>	There was a significant relationship between the dimensions performance, teamwork, feedback, knowing how to deal with errors and support from managers ( $p \leq 0.05$ ). The total score of the patient safety culture in most hospitals was at an average level of three. The maximum score was five. The results of the multivariate analysis of decision-making indicated that human, managerial, organizational and environmental factors were at the top of the priorities in descending order. The nurses, for the most part, indicated that human factors are the most effective and important in improving patient safety culture in the emergency department. The results showed that the expectations and performance of the hierarchical superior and the hospital management support were at a medium level; 30% of the participants reported that their superior did not pay attention to their recommendations to improve patient safety and 52% of the nurses stated that their superior supported them when they performed a task based on the principles of the patient safety culture; 17% reported improving patient safety is assumed to be a critical factor that has to do with all levels of management of the emergency department. In other words, each hierarchical superior must create a support environment in their section, such as the implementation of safety programs and training courses

Source: Authors.

superior and the hospital management support were at a medium level; 30% of participants reported that their hierarchical superior did not pay attention to their recommendations to improve patient safety and 52% of nurses stated that their hierarchical superior supported them when they performed a task based on the principles of the patient safety culture; 17% mentioned the improvement in patient safety is considered a critical factor that has to do with all levels of management of the emergency service<sup>29</sup>. In other words, each hierarchical superior must create a support environment in their section, such as the implementation of safety programs and training courses<sup>29</sup>. Human factors were the most effective and important in improving patient safety in the emergency department, suggesting the need to pay more attention to these factors in the implementation of improved patient safety culture<sup>29</sup>. Training, good organizational environment conditions and motivating environmental factors were the main measures that should be taken into account by nurses. Nurses consider

that the psychosocial work conditions and safety culture vary, although they work in the same environment<sup>31</sup>. There are close relationships between NPE and patient safety<sup>3,32,33</sup>. Therefore, it can be assumed that the NPE improvement leads to nursing care quality and patient safety. To optimize the patient safety culture, it is also essential to ensure a favorable NPE, psychosocial work conditions, with effective leadership from nurse managers.

## Conclusions

The knowledge of nurses' opinions about patient safety in emergency services contributes to improving the quality of nursing care, reducing adverse events and can concentrate efforts to improve the quality of care provided to patients. One of the most evident human rights is the right to be safe from possible risks while receiving healthcare. Patient safety is gaining prominence around the world and, every day, nurses in

emergency departments face several challenges regarding how to provide safe care to patients.

Evidence shows that the negative perceptions of nurses working in emergency services still per-

sist, considering that NPE, teamwork and issues related to the leadership of nurse managers are fundamental factors to have a culture of safety that can ensure nursing care quality.

### **Collaborations**

ABM Diz worked on the study design, research, methodology, review of results and writing of the manuscript. PRMB Lucas worked on the study design, review of results, final writing of the manuscript and approval of the version to be published.



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