



Texto & Contexto - Enfermagem

ISSN: 0104-0707

ISSN: 1980-265X

Universidade Federal de Santa Catarina, Programa de Pós  
Graduação em Enfermagem

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Texto & Contexto - Enfermagem, vol. 28, e20180118, 2019  
Universidade Federal de Santa Catarina, Programa de Pós Graduação em Enfermagem

DOI: <https://doi.org/10.1590/1980-265X-TCE-2018-0118>

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## PATIENT SAFETY CULTURE: PERCEPTION OF NURSES IN A CARDIOPNEUMOLOGY REFERENCE CENTER

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### ABSTRACT

**Objective:** to evaluate the patient safety culture dimensions from the nurses' point of view in a cardiopneumology reference hospital in the city of São Paulo (Brazil).

**Method:** a quantitative, descriptive-exploratory study. Nurses from Inpatient Units and intensive care units participated in this study, which responded to the *Hospital Survey on Patient Safety Culture* instrument, validated for Brazil. Data was collected from July to September 2017. For data analysis, descriptive and inferential statistics were used; percentages greater than or equal to 75% of positive responses represent satisfactory results regarding to the patient safety culture.

**Results:** of 102 nurses, 52 (51%) worked in inpatient units and 50 (49%) in intensive care units, 90.2% being nursing assistants. Females predominated (85.3%) and the mean age was 37.5 years old. As for the safety culture, the best rated dimension was "Organizational Learning - Continuous Improvement" (59.4%) and the worst, "Nonpunitive Response to Errors" (24.1%). The best evaluations were from inpatient unit's nurses, regarding items of positive answers at the hospital level ( $p=0.01$ ), and negative answers at the level of the professional's unit of work ( $p=0.04$ ).

**Conclusion:** these findings make it possible to draw up intervention plans to strengthen and solidify components that encompass safety culture in the institution on this research scenario.

**DESCRIPTORS:** Quality of health care. Health services evaluation. Patient safety. Nursing. Inpatient care units. Intensive Care Units.

**HOW CITED:** Ribeiro AC, Nogueira PC, Tronchin DMR, Rossato V, Serpa LF. Patient safety culture: perception of nurses in a cardiopneumology reference center. *Texto Contexto Enferm* [Internet]. 2019 [cited YEAR MONTH DAY]; 28:e20180118. Available from: <http://dx.doi.org/10.1590/1980-265X-TCE-2018-0118>

# CULTURA DE SEGURANÇA DO PACIENTE: PERCEPÇÃO DOS ENFERMEIROS EM UM CENTRO DE REFERÊNCIA EM CARDIOPNEUMOLOGIA

## RESUMO

**Objetivo:** avaliar as dimensões da cultura de segurança do paciente sob a ótica dos enfermeiros em um hospital de referência em cardiopneumologia do município de São Paulo (Brasil).

**Método:** estudo quantitativo, descritivo-exploratório. Participaram enfermeiros de unidades de internação e de terapia intensiva, os quais responderam ao instrumento *Hospital Survey on Patient Safety Culture*, validado para o Brasil. Os dados foram coletados no período de julho a setembro de 2017. Para análise dos dados, empregou-se a estatística descritiva e inferencial; percentuais maiores ou iguais a 75% de respostas positivas representam resultados satisfatórios quanto à cultura de segurança do paciente.

**Resultados:** dos 102 enfermeiros, 52 (51%) atuavam nas unidades de internação e 50 (49%) nas unidades de terapia intensiva, sendo que 90,2% eram enfermeiros assistenciais. Predominou o sexo feminino (85,3%) e a média de idade foi de 37,5 anos. Quanto à cultura de segurança, a dimensão melhor avaliada foi “Aprendizado organizacional – melhoria contínua” (59,4%) e a pior, “Respostas não punitivas aos erros” (24,1%). As melhores avaliações foram dos enfermeiros de unidade de internação, em relação aos itens de respostas positivas do nível do hospital ( $p=0,01$ ), e de respostas negativas do nível de unidade de trabalho do profissional ( $p=0,04$ ).

**Conclusão:** esses achados possibilitam traçar planos de intervenção para adensar e solidificar os componentes que abarcam a cultura de segurança na instituição cenário desta investigação.

**DESCRIPTORES:** Qualidade da assistência à saúde. Avaliação de serviços de saúde. Segurança do paciente. Enfermagem. Unidades de Internação. Unidades de Terapia Intensiva.

# LA CULTURA DE LA SEGURIDAD DEL PACIENTE: LA PERCEPCIÓN DE LOS ENFERMEROS EN UN CENTRO DE REFERENCIA EN CARDIONEUMOLOGÍA

## RESUMEN

**Objetivo:** evaluar las dimensiones de la cultura de la seguridad del paciente desde la perspectiva de los enfermeros que trabajan en un hospital de referencia en cardioneumología del municipio de São Paulo (Brasil).

**Método:** estudio cuantitativo, descriptivo y exploratorio. Participaron enfermeros de unidades de internación y de cuidados intensivos, quienes respondieron al instrumento *Hospital Survey on Patient Safety Culture*, validado en Brasil. Los datos se recolectaron en el período de julio a septiembre de 2017. Para el análisis de los datos se empleó la estadística descriptiva e inferencial; los porcentajes de respuestas positivas mayores o iguales al 75% representan resultados satisfactorios en cuanto a la cultura de seguridad del paciente.

**Resultados:** de los 102 enfermeros, 52 (51%) se desempeñaban en las unidades de internación y 50 (49%) en las de cuidados intensivos; el 90,2% de ellos eran enfermeros asistenciales. Se registró un predominio del sexo femenino (85,3%) y el valor medio de la edad fue de 37,5 años. En relación a la cultura de seguridad, la dimensión mejor evaluada fue la de “Aprendizaje organizacional – Mejora continua” (59,4%) y la peor evaluada fue la de “Respuestas no punitivas a los errores” (24,1%). Las mejores evaluaciones correspondieron a los enfermeros de las unidades de internación, en relación a los ítems de respuestas positivas del nivel del hospital ( $p=0,01$ ), y de respuestas negativas del nivel de la unidad de trabajo del profesional ( $p=0,04$ ).

**Conclusión:** estos hallazgos permiten diseñar planes de intervención para intensificar y solidificar los componentes que abarcan a la cultura de la seguridad en el escenario de la institución de esta investigación.

**DESCRIPTORES:** Calidad de la asistencia a la salud. Evaluación de los servicios de salud. Seguridad del paciente. Enfermería. Unidades de internación. Unidades de Cuidados Intensivos.

## INTRODUCTION

In their practice, health professionals aim to ensure adequate patient care; however, in this process, the occurrence of failures, errors and adverse events (AEs), which cannot be disregarded, is inevitable. Thus, there must be a constant concern for safety, which can be defined as a set of activities to avoid, prevent and correct the negative outcomes of health care.<sup>1</sup>

AEs have been defined by the World Health Organization (WHO) as an incident that results in some harm to the patient, which may result in the impairment of the body function and/or structure and in any harmful effects resulting from injury, suffering, disability and death, which can be physical, social or psychological. Error, in turn, is defined as the inability to perform a planned action as intended or the incorrect application of a plan, which can manifest itself through wrong action or not taking the right action, and can occur throughout the entire process, both in planning and in execution phases. An error is always unintentional and may or may not cause an AE.<sup>2</sup>

An important advance in the country was the creation of the National Patient Safety Program (*Programa Nacional de Segurança do Paciente*, PNSP), which aims to prevent and reduce incidence of health care-related AEs, through Ordinance MS/GM No.529, April 1<sup>st</sup>, 2013. This program includes strategies such as: creation of a safety culture; systematic and structured execution of risk management processes; integration with all care processes and articulation with organizational processes of health services; best evidence available; transparency, inclusion, accountability and awareness and ability to respond to change.<sup>3</sup>

In this ordinance, article 3 presents the following as specific objectives of the PNSP: I - To promote and support the implementation of patient safety initiatives in different areas of care, organization and management of health care services, through the implementation of risk management and Patient Safety Centers in health facilities; II - To involve patients and families in patient safety actions; III - To broaden society's access to patient safety information; IV - To produce, systematize and disseminate knowledge about patient safety; and V - To promote the inclusion of patient safety theme in technical, undergraduate and graduate health education.<sup>4</sup>

For the WHO, patient safety is to reduce the harm associated with health care to an acceptable minimum. Thus, it is necessary that every health institution promotes actions to reduce the possibility of harm to patients through the care provided.<sup>2</sup>

The patient safety culture is involved in the correction of the work processes, where a non-punitive model is adopted preventing the occurrence of undesirable events, where errors are caused by a sequence of events. These are attitudes and values that should encourage the professional to identify, notify, and resolve safety issues, and error identification leads to organizational learning. In addition, patient safety is considered as a marker of the quality of the care provided.<sup>5</sup>

In this sense, different instruments have been employed in the health area to evaluate the dimensions of the patient safety culture, which are composed of issues involving elements that are closely related to patient safety and organizational culture. Among the instruments, the *Hospital Survey on Patient Safety Culture* (HSOPSC)<sup>6</sup> stands out, which has been widely used in hospital environment around the world to measure patient safety culture.

HSOPSC features a structure with 42 items spread over 12 safety culture dimensions. It was created by the *Agency for Healthcare Research and Quality* (AHRQ), in the United States of America in 2004.<sup>6</sup> This instrument assesses issues regarding the safety culture at the individual, unit, organization and hospital levels, with valid and reliable results. In Brazil, HSOPSC has been translated, validated and made available for use in the health services.<sup>7</sup>

Given the above and considering the importance of the theme to qualify the care provided, we proposed this study in order to evaluate the patient safety culture dimensions from the perspective of nurses in a reference cardiopulmonary hospital in the city of São Paulo.

## METHOD

This is a quantitative, exploratory and descriptive study, conducted in a high-complexity public university hospital specialized in cardiopneumology, located in the city of São Paulo (Brazil).

This study's population corresponds to nurses of the inpatient units (IUs) and of the adult intensive care units (ICUs) of the hospital, who met the following inclusion criteria: being hired in full professional activity for at least six months, not being on vacation or dismissed for any reason during data collection period and returning the completed instrument on the established date.

Data was collected from July to September 2017, by applying the HSOPSC translated and validated questionnaire for Brazil.<sup>7</sup> The HSOPSC encompasses 12 dimensions/factors of the multi-item scale safety culture. In total, it contains fifty items, where forty-four are related to specific security culture issues and six to personal information.

Each of the 12 dimensions has three to four items, three dimensions related to the hospital, seven to the work unit within the hospital, and two outcome variables.<sup>6</sup> Most items are answered on a five-degree Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5), and the "neither" (3) degree mediates this scale. Other items are answered using a five-point frequency scale: from "never" (1) to "always" (5). Finally, two outcome variables are answered as follows: a) patient safety degree, measured by a five-point scale, from "excellent" (1) to "failing" (5); and b) number of reported events, in which the respondent describes how many event reports they have written and delivered in the last 12 months in the following response categories: "none", "1-2 events", "3-5 events", "6 to 10 events" and "11 to 20 events".<sup>6-7</sup> Percentages greater than or equal to 75% of positive responses represent satisfactory results regarding the patient safety culture and, when less than or equal to 50%, they show to be fragile dimensions that need to be better worked on in these units.<sup>6-7</sup>

To analyze the answers, first, the reverse items were inverted (questions described in negative form, with the letter referring to the sections and the number to the question item: A5r, A7r, A8r, A10r, A12r, A14r, A16r, A17r, B3r, B4r, C6r, F2r, F3r, F5r, F6r, F7r, F9r, F11r)<sup>6</sup> (Chart 1). After inverting the reverse items, the percentage of positive responses for each dimension was calculated using the following equation:  $X = [\text{number of positive X dimension responses} / \text{total number of valid responses to dimension X items (positive, neutral, negative excluding missing data)}] \times 100$ .<sup>6</sup>

Data was analyzed using descriptive statistics, with absolute and relative frequencies for categorical variables and mean, standard deviation, minimum and maximum for numerical variables. Comparing the patient safety culture perception between IU and ICU nurses regarding the dimensions of the HSOPSC instrument and the level of the professional's work, hospital and outcome, the ANOVA analysis of variance was performed. The level of statistical significance adopted was 5%.

## RESULTS

Of the 243 nurses from the IUs and ICUs, 169 met the eligibility criteria. However, 102 (60.3%) returned the questionnaire. Of these, 52 (51%) worked in the IUs and 50 (49%) in the ICUs. Most of them, 92 (90.2%), nurse assistants. There was a predominance of females, 87 (85.3%), and the mean age was 37.5 years old (SD=9.5), with a minimum age of 24 years old and a maximum of 62 years old. Regarding education, 84 (83.2%) have a graduate degree, followed by 4 (4%) with a *stricto sensu* post-graduate degree (Master's).

Regarding the workload, most (90.2%) of the nurses work 40 hours per week. As for the working time in the institution, the majority, 85 (83.3%), have been working in the hospital for more than 48 months.

### Patient safety culture assessment

In Table 1, we can evaluate the mean percentage of positive answers obtained for each question of the safety culture dimensions and for their respective items. The mean percentage of positive responses for the 42 items that make up the 12 dimensions of safety culture was 45.3%.

Table 2 presents the mean percentages of positive responses to the dimensions of the safety culture according to the levels of the professional's work, of the hospital and of the outcome dimensions.

Table 3 shows the comparison of the mean percentages of positive and negative responses the 42 items that make up the 12 dimensions of the safety culture instrument and for the dimensions according to the levels of the professional's work, hospital and outcomes, in the perceptions of the nurses working in the IUs and ICUs.

Findings regarding reports number of AEs by the nurses in the last 12 months revealed that 37% of the participants made 1 to 2 notifications; 41%, from 3 to 5 notifications; 12%, from 6 to 10; and 4%, from 11 to 20 notifications, and 5% of the participants did not make notifications during this period. Only one nurse made more than 21 notifications in the period, and two participants did not answer this question.

## DISCUSSION

Within a hospital unit, as well as in the hospital in this study, nursing makes up the largest number of workers, who are closer to patients, are close to understanding actions that lead to error and can intervene with the barriers to prevent them from occurring. In this sense, in most health institutions, the nursing staff has been developing their work processes with special attention to patient safety issues, seeking improvement in care practices.<sup>8</sup>

A Brazilian study showed that the patient's fall inside the hospital, whether from bed, bathroom or any other hospital dependence, and the pressure injury represented about 25% of preventable AEs, mainly by nursing professionals, who provide care 24 hours a day and are closer to the patients.<sup>9</sup>

Nursing, as an effective participant in the care and management actions, plays an essential role in developing strategies and in promoting a favorable setting for the patient safety culture. Consequently, for a safe nursing care, it is necessary to have a link between professionals and managers. Thus, attitudes aimed at improving work processes, changing the culture in the face of an error, with notification of the AEs and assessment of the possible causes, should be focused on improving the quality of care provided to the patients in health institutions.<sup>10</sup>

**Table 1** – Mean percentage of positive responses to the safety culture dimensions of the Hospital Survey on Patient Safety Culture and its respective component items. São Paulo, SP, Brazil, 2017. (n=102)

Dimensions and component items*	Positive answers (%)
<b>1. Teamwork within units*</b>	<b>50.2</b>
A1.† In this unit, people support each other.	68.6
A3. When there is a lot of work to do quickly, we work together as a team to complete it properly.	75.6
A4. In this unit, people treat each other with respect.	74.5
A11. When a work area/unit becomes overloaded, the others help.	56.6
<b>2. Supervisor/Manager expectations &amp; actions promoting patient safety</b>	<b>54.1</b>
B1. My supervisor/chief praises when he sees work performed in accordance with established patient safety procedures.	39.2
B2. My supervisor/chief really takes into consideration the suggestions of the professionals for improving patient safety.	43.2
B3R.‡ Whenever the pressure increases, my supervisor/chief wants us to work faster, even if that means “skipping steps”.	58.8
B4R. My supervisor/boss does not pay enough attention to patient safety issues that happen repeatedly.	75.5
<b>3. Organizational learning—continuous improvement</b>	<b>59.4</b>
A6. We are actively doing things to improve patient safety.	79.2
A9. Errors have led to positive changes around here.	51.6
A13. After we implement changes to improve patient safety, we evaluate effectiveness.	47.4
<b>4. Management support for patient safety</b>	<b>43.4</b>
F1. The hospital management board provides a work setting that promotes patient safety.	32.4
F8. The hospital management actions demonstrate that patient safety is a top priority.	52.9
F9R. The hospital management only seems interested in patient safety when an adverse event occurs.	45.1
<b>5. Overall perceptions of patient safety</b>	<b>47.8</b>
A10R. It is just by chance that more severe mistakes do not happen here.	61.4
A15. Patient safety is never compromised in function of a larger amount of work to be concluded.	17.6
A17R. In this unit, we have patient safety issues.	30.4
A18. Our procedures and systems are adequate to prevent the occurrence of errors.	38.3
<b>6. Feedback and communication about error</b>	<b>37.9</b>
C1. We receive information on implemented changes from event reports.	32
C3. We are informed about errors happening in this unit.	44.2
C5. In this unit, we discuss ways to prevent errors from happening again.	37.6
<b>7. Communication openness</b>	<b>47.8</b>
C2. The professionals are free to speak when seeing something that can negatively affect patient care.	72.5



Table 1 – Cont.

Dimensions and component items*	Positive answers (%)
C4. The professionals (regardless of their employment) feel free to question decisions or actions of their superiors.	29.7
C6R. The professionals are afraid to ask when something seems to be wrong.	41.2
<b>8. Frequency of events reported</b>	<b>56.9</b>
D1. When an error occurs but is noticed and corrected before affecting the patient, how often is it notified?	55
D2. When an error occurs but there is no risk of harm to the patient, how often is the patient notified?	51.5
D3. When an error occurs that could cause harm to the patient but not cause it, how often is the patient notified?	64.4
<b>9. Teamwork across units</b>	<b>36.5</b>
F2R. The hospital units are not well coordinated with each other.	22.6
F4. There is good cooperation between the hospital units that need to work together.	29.5
F6R. It is often unpleasant to work with professionals from other hospital units.	51.9
F10. The hospital units work well together to provide the best care for patients.	42.2
<b>10. Staffing</b>	<b>32</b>
A2. We have enough staff to handle the workload	10.8
A5R. The professionals in this unit work longer hours than would be best for patient care.	23.3
A7R. We use more temporary/outsourced professionals than would be desirable for patient care.	74.2
A14R. We work in a “crisis mode” trying to do too much, too quickly.	19.9
<b>11. Handoffs and transitions</b>	<b>46.2</b>
F3R. The care process is compromised when a patient is transferred from one unit to another.	43.5
F5R. It is common to lose important patient care information during duty or shift changes.	42.1
F7R. Frequently, problems occur in exchanging information among the hospital units.	30
F11R. In this hospital, duty or shift changes are problematic for patients.	69.3
<b>12. Nonpunitive response to errors</b>	<b>24.1</b>
A8R. The professionals consider their mistakes can be used against them.	12.7
A12R. When an event is notified, it seems the focus is on the person, not the problem.	37.3
A16R. The professionals worry that their errors are recorded in their functional records.	22.5

\*The component dimensions items are identified and appear in the same order as the questionnaire;

† Indicates the alphanumeric position in the questionnaire; ‡ Indicates sentences written negatively with respect to safety culture (they are marked with the letter R in front of their respective alphanumeric indication).



**Table 2** – Mean percentage of positive responses to the dimensions of the Hospital Survey on Patient Safety Culture safety culture related to the levels of the professional's unit of work, of the hospital, and of the outcome. São Paulo, SP, Brazil, 2017. (n=102)

Dimensions of safety culture by levels	Mean percentage of responses	Best rated dimension	Worst rated dimension
Professional unit level of work - dimension numbers (n): 1,2,3,6,7, 10 and 12	43.6	59.4 (level 3)	24.1 (level 12)
Hospital level - dimension numbers (n): 4, 9 and 11	42	46.2 (level 11)	36.5 (level 9)
Result dimension level — dimension numbers (n): 5 and 8	52.3	56.9 (level 8)	47.8 (level 5)

**Table 3** – Comparison of the mean percentages of positive and negative responses among the nurses of the Inpatient Units and Intensive Care Units. São Paulo, SP, Brazil, 2017. (n=102)

Variable	Group	Mean (%)	SD* deviation	p
Agreement of positive answers (totals)	IU ICU	48.9 41.6	20.6 22.7	0.09
Agreement of negative answers (totals)	IU ICU	45.9 39.3	22.06 22.04	0.13
Agreement of positive answers (Level 1)**	IU ICU	52.0 47.8	22.9 24.1	0.37
Agreement of negative answers (Level 1)	IU ICU	45.5 36.4	23.0 21.3	0.04
Agreement of positive responses (Level 2)†	IU ICU	52.3 37.2	27.1 33.8	0.01
Agreement of negative answers (Level 2)	IU ICU	46.1 46.0	36.8 34.7	0.98
Agreement of positive responses (Level 3) ‡	IU ICU	45.1 33.0	38.0 34.4	0.09
Agreement of negative answers (Level 3)	IU ICU	46.4 41.1	29.5 29.6	0.36

\*SD = standard deviation; \*\*Level 1 corresponds to the level of the professional's unit of work; † Level 2, to the hospital level; ‡ Level 3, to the dimensions of results.

In this sense, the HSOPSC instrument was built to evaluate multiple dimensions of the patient safety culture and it questions the opinion about values, beliefs and norms of the organization, AE notification, communication, leadership and management. This questionnaire identifies areas of the health service that need improvement through strengths and weaknesses, assesses the effectiveness of actions implemented over the long term and assists in the perception of the different safety cultures of each organization.<sup>7</sup>

The present study showed that most dimensions presented values below 50%, indicating weaknesses needing interventions for improvement. Among them the “Management Support for Patient Safety” dimension stands out, which obtained a mean percentage of 43.4%. This dimension is related to what the hospital provides for the professionals to develop their work actions, that is, work ambience and hospital actions that prioritize patient safety in the care provided.<sup>7</sup>

The safety culture assessment will result from the ambience surrounding organizational setting and how it is perceived and experienced by the professionals working in this workplace. The safety ambient demonstrates the behavior of the management, of the safety systems, of the barriers implemented and of the safety perceptions of the professionals. Currently, there is a perception that errors are strongly related to organizational, management and human factors.<sup>10</sup>

The low percentage in the “Feedback & Communication About Error”, with a mean percentage of 37.9%, and “Communication Openness”, with 47.8%, dimensions demonstrate communication problems, both to report the error to the team and their supervisor and to have open space to make placements about actions that do not seem to be correct, that is, difficulty in creating a dialog. Effective communication is of great importance among the health professionals in order to clarify doubts, so that actions are performed correctly and in the right patient. The written communication form is also subject to failures that directly influence patient safety. In addition, the lack of communication among the professionals can generate several errors, such as AEs related to patient identification, prescription, preparation and administration of medications, among others.<sup>11</sup>

The “Handoffs & Transitions” dimension, with a mean percentage of positive responses of 46.2%, was the one which received the highest percentage in the assessment regarding the hospital level, and is also an item that evaluates active communication, because it shows us important information on the patient that is lost on shift changes and on transferring patients to other sectors, causing problems for the patients because they do not actually have continuity of care. The aspects related to communication within the health services need to be increasingly developed. Efforts in this sense are likely to make it easier to report the most important information needed to improve patient safety. Strategies which favor safe information transfer on shifts and on patient management among the units are also required.<sup>12</sup>

In establishing the study, in some units, the SBAR (Situation, Basis of the scenario, Analysis, Recommendations) quality improvement tool is used for shift transfers, considered as a guiding tool for indispensable components that must be passed from shift to shift to prevent important information from going unnoticed. It should be noted that other health professionals use this tool. On the other hand, in patient transfer, SBAR is not yet performed, and notes are made in the computerized system.

Another dimension, considered fragile, is “Staffing”, with a mean percentage of positive answers of 32%, possibly perceived due to the work overload evidenced by the nursing professionals reduced number and by a workload above 40 hours per week, as recommended by the organization. This situation contributes to the occurrence of errors and AEs, compromising patient safety and quality of care. Patient safety involves, among other elements, adequacy of human resources number, professionals training for decision-making, being all individuals’ responsibility, regardless of hierarchical levels, and a collective thinking regarding patient safety. This commitment occurs at all levels, including the board of directors.<sup>8</sup>

The worst assessed dimension was “Nonpunitive Response to Error”, with 24.1%, showing that this is the area that needs most attention from managers. It can be inferred that nurses believe that errors can be used against them, the consequences being attributed to a single person, as well as disciplinary measures. This dimension also got the worst rating when categorized at the level of the professional work unit. Corroborating this result, a study conducted in an ICU of a general public hospital located in southern Brazil, showed that this dimension obtained one of the lowest scores of positive responses (21.21%), in the nurse’s perception.<sup>13</sup> Knowing how to analyze the error and the near miss in the institutions, and encouraging them to be notified, will always favor the understanding of the failures which occurred, providing organizational learning and assisting in the implementation of changes in the work care process.<sup>10</sup>

The culpability culture ends up blaming the individual for the occurrence of the errors and prevents the identification of problems in the work processes that may lead to error occurrence. The punitive culture impairs error recognition by the professionals, discourages notification and, consequently, prevents organizational learning from their occurrence. This leads us to believe that the culpability culture is a challenge for strengthening the patient safety culture among hospital professionals.<sup>13-14</sup>

Within the scope of the dimensions of greater fragility of this highly complex hospital, these items about the patient safety culture and its components deserve an improved perception of care and management nurses, and still need to be worked on.

Regarding the dimension that received the highest percentage of positive responses, "Organizational Learning-Continuous Improvement", with 59.4%, we can point out that the professionals are striving to improve patient safety issues within the units, in the institution in general, and even past mistakes are serving to generate changes in patient care. Thus, by the level of professional work, shown in Table 1, this was the best-evaluated dimension in the study; however, it obtained a percentage below 75%.

Discussing the health service errors is relatively recent in Brazil, and the punishment to the professionals who make mistakes is still deeply rooted. The power relations within the health service are also observed, among professional categories, such as doctors and nurses, and within the hierarchical structure of the institutions, between leadership and subordinates. The organizational cultures, which are more prone to care quality development, have a work balance among groups, aggregating all professional categories.<sup>12</sup> Thus, these will vary according to the composition of each institution and are related to the safety ambience of its professionals. The cultures that are more conducive to change are more sensitive and flexible to implementing strategies to improve a safety ambience.<sup>10</sup>

Good care practices should be adopted and prioritize health care errors reduction, and are critical to ensuring patient safety in health care. They are now widely disseminated by renowned organizations that lead hospitals accreditation process such as the *Joint Commission on Accreditation of Healthcare Organizations* (JCAHO). As a basis, there are six goals, namely: identify patients correctly; improve effective communication among the professionals; improve safety in prescription, use and administration of medicines; ensure surgeries with correct intervention site, correct procedure and correct patient; reduce the health care-associated infections (hand hygiene) risk; and, finally, reduce the patient injury risk of falls and pressure injury.<sup>11</sup>

Future research should always check the level of implementation of the safe practices in the health settings, strategies to improve the adherence of the professionals, the influence of context on implementation, such as leadership, organizational culture, size of hospitals, type of management (public or private), funding, among others, and the development of new technologies to help with an easy and rapid monitoring of the patient safety practices.<sup>13-15</sup>

Among the presented levels of the professional's unit of work, of the hospital and of the outcomes, the dimension that obtained the best evaluation was "Organizational Learning-Continuous Improvement", with 59.4%, and the one with the worst rating was "Nonpunitive Response to Errors", with 24.1%. Both belong to the level of the professional's unit of work, and refer to the issues that group daily activities of the nursing professionals within a unit or sector, which are lagging and need to be strengthened. We realized that within the same level there is the best and worst rating, but all showed fragility, because they are below 75% of positive responses. It is noteworthy that the item "Nonpunitive Response to Errors" was poorly rated in this study, as measured by dimension as by level.

When comparing the assessment of the patient safety culture between IU nurses and ICU nurses, it was observed that the IU professionals' perceptions were better, with statistically significant results regarding hospital-level positive response items ( $p=0.01$ ), which correspond to the dimensions of "Management Support for Patient Safety" (4), "Teamwork Within Units" (9) and "Handoffs and Transitions" (11), and in relation to the negative answers of the levels of the professional's unit of work ( $p=0.04$ ), which encompass the dimensions of "Teamwork Within Units" (1), "Supervisor/Manager Expectations & Actions Promoting Patient Safety" (2), "Organizational Learning—Continuous Improvement" (3), "Feedback and Communication About Error" (6), "Communication Openness" (7), "Staffing" (10) and "Nonpunitive Response to Errors" (12).

Most nursing professionals working in the ICU, in their daily lives, find it difficult to provide care to the patient under their care, either due to lack of material, work overload, lack of time to perform all daily tasks or other causes, which are impediments to providing quality and humanized care. Workers dealing with critically ill patients show signs of physical and/or psychological distress.<sup>16</sup>

A study conducted with 301 nursing professionals from a teaching hospital located in the city of São Paulo, working in different units, evaluated the patient safety culture perception with the HSOPSC instrument and concluded that the units that worked with pediatric patients had the best notions of the patient safety culture and that the ICU professionals had a better perception regarding medical clinic and adult emergency room. The authors attribute these differences to multiple causes, such as the work process developed in each researched scenario, since each unit has its specificity in relation to service dynamics and presents the need for distinct decision-making. The quantitative/qualitative element of the professionals and of the patients, the workload, continuing education and the management and leadership profile of each unit are also factors that influence the patient safety perception culture.<sup>17</sup>

Regarding the notifications made, 78% of the professionals made between 1 and 5 notifications within 12 months, which shows us that patient safety care is probably being effective, but also raises concerns about underreporting that may have occurred since, in the "Nonpunitive Response to Errors" dimension, the participants asserted that the notifications can be used against them and that the focus may be on the person rather than on the problem. There must be an incentive from the institution to notify errors and AEs, with full data, so that control strategies can be developed, avoiding new occurrences. Thus, nurses should be constantly guided and trained to perform the registration correctly and completely, and institutional forms should be simple and easy to understand.<sup>18</sup>

In the hospital scenario of this research, notifications are always performed twice in a spreadsheet in *Excel*® and in the computer system. The nurses' reports about this filling refer to the fact that it takes a lot of time and that they do not always receive a return of the problem and resolution.

The notification culture should be the first action to promote patient safety in order to understand where failures occur and what barriers should be implemented. AEs must be notified so that preventive measures, error corrections, reduction and elimination of occurrences can be adopted, tracking measures that have been implemented and whether they are generating improvements to safer practice.<sup>19</sup> AEs, moreover, are neglected to be notified, given the socially existing punitive culture. Accepting error is extremely difficult, from fear of punishment and social misunderstanding. The safety culture must be adapted to the legal norms, since safe care requires changing thoughts and the use of adequate records, one of the major problems of the nursing practice.<sup>19</sup>

## CONCLUSION

The findings of this study showed that almost all dimensions of the HSOPSC instrument were assessed as fragile by the nurses participating in the research, requiring investments in continuing education, in the error recognition process, in their notifications and in the barriers that need to be addressed to prevent the error from happening. Such information is useful for creating strategies that improve care delivery.

Given the results obtained, we can consider that the nurses feel discouraged to report errors, considering the repercussions this may have, as there is insecurity in the face of the consequences that permeate the punitive culture. Therefore, health organizations should support, encourage and promote these professionals to changes that lead to the practice of a fair culture.

The importance of these findings lies in the possibility of drawing up intervention plans for improvements that affect the patient safety culture, and it is essential to count on the engagement of managers, health professionals, patients and family members.

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## NOTES

### ORIGIN OF THE ARTICLE

Extracted from the residence conclusion work – patient safety culture: perception of nurses in a cardiopneumology reference center, presented to the High-complexity Cardiopneumology Nursing Residency Program of the *Universidade de São Paulo* at School of Nursing and to the Heart Institute of the Clinical Hospital at *Universidade de São Paulo*, School of Medicine in 2018.

### CONTRIBUTION OF AUTHORSHIP

Conception of this study: Ribeiro ACB, Nogueira PC.

Data collect: Ribeiro ACB.

Analysis and interpretation of data: Ribeiro ACB, Nogueira PC.

Discussion of the results: Ribeiro ACB.

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Review and final approval of the final version: Nogueira PC.

### ACKNOWLEDGMENT

To the statistician Bernardo dos Santos

### ETHICS COMMITTEE IN RESEARCH

This research was approved by the Research Ethics Committee (REC) of the University of São Paulo at School of Nursing, under the following Certificate of Presentation for Ethical Appreciation protocol N. 66471417.9.0000.5392.

### CONFLICT OF INTERESTS

There is no conflict of interest.

### HISTORICAL

Received on: April 13, 2018.

Approved on: December 12, 2018

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