

## Patient Safety Culture in the Surgical Center: Perspective of Nursing Professionals

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### ABSTRACT

**Objective:** To determine the patient safety culture among nursing professionals of surgical center in a high-complexity hospital in North-eastern Brazil.

**Materials and Method:** Cross-sectional study performed with 56 professionals from the nursing staff, in the period from January to June 2019. The instrument Hospital Survey on Patient Safety Culture was applied. In the data analysis and verification of the results, the Cronbach alpha test was used.

**Results and Discussion:** The Dimensions: "Organizational Learning" (91.67%,  $\alpha=0.72$ ); "Feedback and communication about error" (80.36%,  $\alpha=0.63$ ) and "Supervisor/manager expectations and actions promoting patient safety" (77.68%,  $\alpha=0.60$ ) constituted strong points. However, the dimensions "Frequency of events reported" (32.59%,  $\alpha=0.57$ ) and "Nonpunitive response to error" (25.60%,  $\alpha=0.41$ ) were more fragile. The study covers, therefore, the extended and multidimensional perspective of safety culture when considering such specificities and cross-sectional characteristics influencing the organization's commitment to health with patient safety.

**Conclusion:** Despite the strong points evidenced, some dimensions presented weaknesses, which requires management/professionals collaboration to improve patient safety culture in this sector. The limitation was the small sample of the nursing staff.

## **INTRODUCTION**

The qualified health care stands out as a challenge in the hospital scenario and indispensable in health care. In this context, there appear the commitment to meet the patient's needs, the demand by increasing patient satisfaction, the offer of a safe, effective, efficient and ethical care, with technical quality and systematization of the care process, as well as the guarantee of good structure in care. Therefore, there is need to determine the relationship between structure, process and outcome for the evaluation of the health care quality <sup>[1,2]</sup>.

Among the elements essential to the health care quality, patient safety stands out, because it delimits actions that aim to manage and prevent risks to which patients would be exposed. In this way, safety constitutes a strategy for reducing potential damage in the care process <sup>[3,4]</sup>.

In Brazil, the Ordinance n. 529 of 2013, of the Ministry of Health, launched the Patient Safety National Program (PNSP) with the objective of providing subsidies so that all health institutions in the territory have a starting point to deploy and promote safety measures <sup>[5,6]</sup>. Thus, the patient safety culture is a set of values, attitudes, perceptions and group or individual skills that determine the involvement in the issues of patient safety in a health institution, being a primary factor in the development of a system focused on good clinical practices <sup>[1]</sup>.

The safety culture encourages professionals to be responsible for their actions and to develop a new concept about adverse events, ensuring the impartiality and the abandonment of punitive and blaming practices of those who commit any unintended adverse event. Unsafe care practices turn adverse events into a public health problem, reaffirming priority in the development of strategies for monitoring errors and the establishment of quality improvements for patient safety <sup>[1]</sup>. Health professionals and managers perceive the safety culture differently, so that knowing it is a fundamental aspect for the routing of safe practices <sup>[5]</sup>.

The incorporation of safety culture in a work team requires a high level of commitment of management and employees, as well as a strong spirit of cohesion between the various departments, factors that determine the guarantee of an efficient assistance. Based on this premise, the nursing, as the major working force at the hospital, must assume this responsibility as a potential improvement in care provision <sup>[7]</sup>.

Among the hospital sectors of health care, the Surgical Center, due to its peculiarities, is seen as a high-complexity and risk sector. With so many peculiarities and a work that involves different professional categories and specialties, this sector lacks initiatives that strengthen patient safety, particularly the very nature of the meaning of caring in nursing. Therefore, studying the patient safety in the Surgical Center allows observing the weaknesses and strengths in this process, thus ensuring the possibility of a new concept to adopt managerial and assistance strategies to overcome the occurrence of adverse events <sup>[6,7]</sup>.

Then, in this context, the following guiding question arises: how does the surgical nursing staff perceive the patient safety culture? Thus, this study aimed to determine the patient safety culture among nursing professionals of the Surgical Center in a high-complexity state hospital in North-eastern Brazil.

## **MATERIALS AND METHODS**

Cross-sectional study with a quantitative approach, derived from the research "Patient Safety Culture among Nursing professionals", belonging to the Research Group Psychomotor Skills for Care (HPPC), linked to the Nursing Department of the Federal University of North-eastern Brazil.

The study was developed in the period from January to June 2019, in the Surgical Center of the Hospital of state reference in high-complexity cases in North-eastern Brazil, which offers assistance, research and extension in the health area. The Surgical Center of the hospital has nine surgical rooms, covering general, urology, vascular surgeries, head and neck surgeries, proctologic, gynecological, mastology, thoracic, reparative plastic surgeries, neurosurgeries, cardiac surgeries and dental surgeries.

The participants were all nursing professionals who work at the Surgical Center of the hospital, whether those in direct contact with patients or those in management activities (nursing supervisors, leaders and coordinators). Thus, the participants were 19 nurses and 37 nursing technicians, totaling 56 participants.

The study included nursing professionals of both sexes, with weekly workload greater than or equal to 30 hours in the hospital and who were part of the effective staff. Exclusion criteria were professionals who were, in the period of data collection, on health or maternity leave or absent due to various reasons.

Data collection used the questionnaire Hospital Survey on Patient Safety Culture (HSOPSC) created by the Agency for Healthcare Research and Quality (AHRQ) of the United States in 2004 <sup>[8]</sup>. The instrument was translated and validated for the Brazilian Portuguese, made available to the public domain by the Collaborating Center for Care Quality and Patient Safety (PROQUALIS) and aims to evaluate the multiple dimensions of patient safety, whether at individual, hospital unit/

sector or hospital level [9]. The questionnaire consists of 8 sections (A to H) comprising 53 items, of which 44 are related to specific issues of patient safety culture and 9 to personal information. The sections “A” to “G” cover 12 dimensions or values of the patient safety culture.

The evaluation of the safety culture occurred through the percentage of neutral, positive and negative responses obtained in each dimension about patient safety culture. Neutral responses comprised those with the option 3 marked (“do not agree nor disagree” or “sometimes”) for any item. The positive responses referred to those with the option 4 or 5 marked (“agree/strongly agree” or “often/always”) for the sentences expressed in a positive way, or 1 or 2 (“disagree/strongly disagree” or “never/rarely”) for the sentences formulated negatively. The negative responses comprised those with the options 1 or 2 marked (“disagree/strongly disagree” or “never/rarely”) to the questions formulated in a positive way, or 4 or 5 (“agree/strongly agree” or “often/always”) in sentences formulated negatively [10].

The generated results allowed identifying strengths and weaknesses of patient safety. The “strong areas of patient safety” in the hospital were those whose items written positively obtained 75% of positive responses (“strongly agree” or “agree”), or those whose items written negatively obtained 75% of negative responses (“strongly disagree” or “disagree”). In the same way, the “fragile areas of patient safety” and that need improvement were those whose items obtained 50% or less of positive responses [10].

After observing the dynamics of the sector and assessing the best way for data collection, the questionnaire was delivered to the employee at the beginning of the shift and returned at the end of each day, at a scheduled time. The researcher himself and students from the HPPC performed the collection.

To assist in data analysis and verification of results, the Cronbach alpha test was used. This test allows checking the reliability of the instrument’s internal consistency, defined as the consistency with which the instrument measures a certain characteristic, ranging between 0.00 and 1.00, whose minimum value should be 0.60 [11,12]. This analysis was performed using STATA 14.0 and the results were presented in tables.

The study followed with rigor the recommendations of Resolution 466/12 of the National Health Council, being approved by the Research Ethics Committee of the Federal University of North-eastern Brazil, under opinion number 2.076.153. All participants who agreed to participate voluntarily after information on the research signed the Informed Consent Form (ICF).

**RESULTS**

In **Table 1** is characterized by heterogeneous distribution between women (91.1%) and men (8.9%), with predominance of age from 30 to 40 years (46.4%), with an average age of 32.2 years, nursing technicians (66.1%), complete secondary education (30.4%), with working time in nursing from 1 to 10 years (80.4%), working time in the current area/unit from 1 to 10 years (55%) and weekly workload up to 39 hours (92.9%).

**Table 1.** Distribution of frequencies of sociodemographic variables of nursing professionals. Sao Luis -Maranhao, Brazil, 2019.

Variables	N (%)
<b>Sex</b>	
Female	51 (91.1)
Male	5 (8.9)
<b>Age (mean age =32.2 years)</b>	
Up to 29 years	19 (33.9)
30 - 40 years	26 (46.4)
41 - 50 years or more	11 (19.8)
<b>Position/Function</b>	
Nurse	19 (33.9)
Nursing Technician	37 (66.1)
<b>Education</b>	
Complete Secondary Education	17 (30.4)

Incomplete Higher Education	16 (28.6)
Complete Higher Education	14 (25)
Specialization	9 (16.1)
<b>Time working in the specialization or current profession</b>	
< 1 year	10 (17.9)
1 - 10 years	45 (80.4)
11 - 20 years	1 (1.8)
<b>Time working in the current area/unit</b>	
< 1 year	9 (16.1)
1 - 10 years	42 (55.0)
<b>Weekly workload</b>	
Up to 39 hours	52 (92.9)
<b>Total</b>	56 (100)

According to **Table 2**, the dimensions with a higher proportion of positivity with values above 75% considered strong areas of patient safety were: “Organizational learning and continuous improvement” (91.67%), “Feedback and communication about error” (80.36%) and “Supervisor expectations and actions promoting patient safety” (77.68%). The others had positivity below 75%. The dimension “Nonpunitive response to error” had the lowest percentage of positivity (25.60%), considered fragile areas of patient safety.

**Table 2.** Proportion of positive responses and reliability by Cronbach's alpha ( $\alpha$ ) of each dimension of the instrument Hospital Survey on Patient Safety Culture, Sao Luis, Maranhao, Brazil, 2019.

Safety culture dimension	%	Alpha
Organizational learning and continuous improvement	91.67	0.72
Feedback and communication about error	80.36	0.63
Supervisor expectations and action promoting patient safety	77.68	0.6
Overall perceptions of patient safety	66.07	0.51
Teamwork within units	63.39	0.64
Communication openness	50.63	0.63
Adequacy of professionals	40.18	0.65
Hospital management support for patient safety	35.71	0.35
Handoffs and transitions	35.27	0.61
Teamwork across units	35.67	0.49
Frequency of events reported	32.59	0.57
Nonpunitive response to error	25.6	0.41

Still in Table 2, the HSOPS obtained good reliability by Cronbach's alpha (0.60 -0.72), except in the areas of “Overall perceptions of patient safety” (0.51), “Nonpunitive response to error” (0.49), “Teamwork across units” (0.41), “Management support for patient safety” (0.35) and “Frequency of events reported” (0.57).

The evaluation of the patient safety quality in the surgicenter area/unit was considered “excellent/very good” by 84% of the employees, according to Table 3. Regarding the quantitative of reportable events, 53.6% did not have any report in the last 12 months. There was a percentage of just 12.5% greater than 10 reports made by nursing professionals of the referred surgical center, as seen in **Table 3**.

**Table 3.** Patient safety quality in the work area/unit and number of reports performed in the past 12 months. Sao Luis, Maranhao, Brazil, 2019.

Variables	N*	(%)
<b>Patient safety quality in the work area/unit</b>		
Excellent	17	-30
Very Good	30	-54
Regular	8	-14
Very Bad	1	-2
<b>Number of events reported in the past 12 months</b>		
No reports	30	-53.6
1 - 2 reports	2	-3.6
3 - 5 reports	11	-19.6
6 - 10 reports	6	-10.7
11 - 20 reports	1	-1.8
21 reports or more	6	-10.7

## DISCUSSION

The evaluation of the reliability of an instrument refers to stability, internal consistency and equivalence of a measure. It is not a fixed property of the questionnaire, because it depends on the function, the type of instrument and the way it was implemented and managed to obtain the results [13]. This instrument has good reliability by Cronbach’s alpha in seven of the 12 dimensions evaluated.

Starting from the premise that the safety culture in health services is associated with the evaluation of the structure, the process, the results and the perception of professionals working in the institution, in relation to the sociodemographic variables, there was prevalence of women from 30 to 40 years and mostly belonging to the professional category of nursing technician, characterized by a secondary level education.

According to a survey conducted by the ENADE [14], in 2015, the prevalence of women starts from the academic scenario, extending to the profession, corroborated by a study done by the Federal Nursing Council in partnership with Oswaldo Cruz Foundation, reaffirming and demonstrating that 87.7% of nursing professionals North-eastern Brazil comprise the female sex, predominance also found in other studies [15]. In a previous study, the age range found was from 31 to 35 years (22.4%), of these, 75.3% belong to the professional category of Nursing Technician/Assistant [16].

In relation to the level of schooling, 30.4% had complete secondary education, showing only the professionalizing course as training. This is because the most frequent category was nursing technician. However, the desire to qualify has been a search of these professionals, which is confirmed by the 28.6% of secondary-level workers (technicians), who attend nursing graduate school, aiming to conclude higher education. In a study in Rio de Janeiro in 2013 [17], most professionals (64.6%) has higher education, evidencing the importance of higher education for hiring to the position.

Concerning working time and time working in the unit carrying out the current function, the highest percentage of participants, respectively, (80.4%) and (55%), have from 1 to 10 years of service. The temporal range related to working time and time of service in the institution are similar. What leads us to interpret that the staff at the Surgical Center remain working in the sector since they were hired by the Hospital, also showing low turnover among professionals from the hospital organization. This service time can influence the care systematization and knowledge of the sector routines, contributing to a better safety culture.

With the prevalence of up to 39 hours, the weekly workload found complies with the recommendations of COFEN, according to Resolution n. 0154/2016. Such hour load suggests that those professionals combine them with free time, employment in another institution or even the completion of extra shifts, to complement their income <sup>[18]</sup>. Nonetheless, this study did not evaluate whether the professional had another employment, because the HSOPSC does not include this information, which can be a limiting factor.

In the HSOPSC, three dimensions stood out with scores of positive responses over 75%, an item necessary to be considered strength area for the patient safety culture, namely: “Organizational learning and continuous improvement,” “Feedback and communication about error” and “Supervisor expectations and actions promoting patient safety”.

The importance of the dimension “Organizational Learning” is confirmed by a study that emphasized the continuous learning as able to the rate of avoidable mortality <sup>[19]</sup>. This domain comprises the assessment of learning from mistakes, in which continuing education is an integral part of the safety culture. This is a substantial factor for improving the assistance, which is revealed as a strong dimension in the research, aiming to change protocols and mentioning the need for implementing risk management and systems to report adverse events (AE) <sup>[20]</sup>. In the present study, professionals understand the importance of training, which included positive changes and evaluation of effectiveness. And this organizational learning is fundamental to entrench this culture, because it investigates the causes of errors.

Another point that stood out as strength was the “Feedback and communication about error”, which showed the participants’ concern about implementing changes and discussing strategies for improvements. In contrast, a study performed at the Surgical Center of three hospital wards in Paraná <sup>[21]</sup> and in units located in the capital and port region of Peru revealed flaws in the units surveyed and in other public and private hospital institutions, involving, in the latter, 1,679 health professionals as participants <sup>[22]</sup>. According to this research <sup>[21]</sup>, the dimensions “Communication openness”, “Feedback and communication about error” and “Frequency of events reported” have low rates of positive responses of 35%, 37% and 30%, respectively, showing weakness.

The dimension corresponding to “Supervisor/manager expectations and actions promoting patient safety” features 77.68% of positivity, evidencing that supervisors/managers take into account the suggestions from employees and recognize their participation in improving patient safety. The influence of leaders in the development of habits, behaviors and processes culminate in a positive culture evolving to a constant improvement <sup>[23]</sup>. Concerning the positive perception of professionals (mostly nursing technicians), the influence of the leadership role played by nurses leaders of their respective sector instigates habits, behaviors and organizational changes <sup>[23]</sup>. The nurse’s position stands out as a member leader of the staff, who shall act based on knowledge and increase his/her contact with the staff to enhance the patient safety culture.

In relation to the prevention of Adverse Events, the issue of reporting incidents, regarding their understanding and causes of occurrence, should be strongly included <sup>[20]</sup>, because there is still the need to consolidate the culture of communication and analysis of those incidents. The communication can be worked from the report of events, taking from the abstract the association between safety culture and other results, and may vary among the professional categories and different departments of the same hospital. In the present study, most participants did not report the adverse events in the past 12 months, but realize the importance of this act.

A research conducted in 2015, in a teaching hospital of Minas Gerais <sup>[24]</sup>, revealed the main causes for the absence of reports. It showed that nursing professionals feel unprepared to report due to lack of professional training, revealing that the biggest obstacles are technical complaints, i.e., any amendment or irregularity in the management can lead to health problems. Furthermore, the problem of the fear of punishment constitutes obstacle for a “more fair culture” <sup>[23,24]</sup>. To do this, the institutional management, together with professionals, needs to incorporate this culture, having communicative, non-punitive leaders, with good personal relationship. Moreover, if there are no preventive and corrective actions, there is greater propensity of occurrence of underreport, resulting in failures in the diagnosis of the problems related to patient safety, which may limit the management, the reduction and control of the occurrence of adverse events.

In this study, the Nursing staff assessed the degree of patient safety in the Surgical Center, assigning a note of the qualitative value “Very Good”. In a study carried out in the capital of Piauí (PI) Teresina <sup>[6]</sup> and in the capital of Santa Catarina (SC) <sup>[25]</sup>, they classified as regular, and, in this same sector in São Paulo (SP), the professionals indicated as “very bad”. These differences found, both in the assessment of patient safety by health professionals and in different health care institutions or scenarios, may be related to the level of implementation of safety culture. In the institutions where the safety culture is rooted and present, the evaluations are more judicious.

The above demonstrates the need to improve the safety culture in the Surgical Center (SC), aiming to strengthen the communication and the work between the teams. Other forms would be discussing, in training environments, aspects related to surgical patients; reviewing the influence of the punitive approach, and if possible, replace it with a systemic approach; strengthening report systems so that all professionals learn from the mistakes in the institution, elaborating goals that prevent undesirable damage.

The 'regular' classification is characterized with greater frequency in studies conducted in Brazil. This periodicity is justified by the existence of conditions that provide an inadequate dimensioning of staff, overcrowding, lack of adequate infrastructure, lack of equipment, leading to the occurrence of errors [6]. However, this study demonstrates that this scenario seeks changes, establishes requirements more directed to patient safety. From a more critical view, one ratifies what nursing professionals perceive in the care quality.

Nevertheless, providing moments for interaction and discussion among employees about mistakes and guilt can be a way to show that errors potentiate as learning opportunities. There is need to improve the patient safety culture, in view of the elaboration of protocols, planning of capabilities, improvements in communication, working environment and infrastructure, reduction of work overload, error prevention and greater problem solving [26,27].

### CONCLUSION AND FUTURE CONSIDERATIONS

The use of the HSOPSC questionnaire allowed establishing an overview of patient safety according to the SC professionals' view. The strong dimensions were "Organizational learning", "Feedback and communication about error", "Supervisor/manager expectations and actions promoting patient safety".

Nonetheless, despite presenting three strong dimensions, the evaluation of the safety culture of the state hospital can establish that other dimensions need to be reviewed by management and staff, since they were considered fragile: "Overall perceptions of patient safety", "Teamwork within units", "Communication openness", "Adequacy of professionals", "Management support for patient safety", "Handoffs and transitions", "Teamwork across units", "Frequency of events reported," "Nonpunitive response to error". These dimensions need attention and investment of managers.

A limitation of the study was the relatively small population number and assessment of safety culture in a specific group of professionals in a sector with a variety of other health professionals, the SC. With such limitation, the safety culture should be investigated and expanded to other sectors and professional groups of the hospital.

To improve the care quality, there is need for efforts to hospital organization, incentive to professionals to carry out actions, recognition of factors that culminate in errors and their facets to the reasoning. From this, attitudes from criticality, logical and prudent reasoning are guided, consolidating the nonpunitive culture and removing the focus of attention from who made the mistake.

There is need for a systemized thinking in favour of the safety culture at the surgical center of this institution, considering the human condition susceptible to errors, and being responsible for the creation of systems that prevent errors, and intermediate the damage resulting from this error. With this, the professional is responsible for the opportunity to change his/her behaviour and attitudes, experiencing a new reference, establishing a safety culture in his/her workplace, demonstrating to the leadership that the guarantee of safety culture is a priority.

Finally, the education in health service and the training of professionals should promote regular qualifications. Managers should instigate the promotion and support of safe practices, taking into account evidence and care regulations.

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