Patient safety culture: perception of professionals working in the surgical center

Cultura de segurança do paciente: percepção de profissionais atuantes no centro cirúrgico

Cultura de seguridad del paciente: percepción de los profesionales que trabajan en el centro quirúrgico

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ABSTRACT: Objective: To evaluate the patient safety culture in a surgical center of a federal public hospital. **Method:** This is an exploratory descriptive study, with a cross-section and a quantitative approach. Data collection took place between December 2019 and February 2020, using the Hospital Survey on Patient Safety Culture questionnaire, which gathers the largest number of specific psychometric criteria on patient safety culture. **Results:** A total of 55 professionals participated in the research, most of them nursing technicians in direct contact with the patient. The dimensions "organizational learning/ continuous improvement" and "hospital management support for patient safety" obtained higher rates of positive responses, considered dimensions of strength for the safety culture. However, ten dimensions did not reach the strength level of patient safety culture. **Conclusions:** Through the analysis of the dimensions, we evidenced a still fragile patient safety culture in the institution, with particular emphasis on hospital management support and organizational learning, which directly impact the professionals' perception of this topic.
Keywords: Health services research. Surgicenters. Organizational culture. Patient safety.

RESUMO: Objetivo: Avaliar a cultura de segurança do paciente em um centro cirúrgico de um hospital público federal. **Método:** Trata-se de um estudo descritivo exploratório, com corte transversal e abordagem quantitativa. A coleta de dados ocorreu entre dezembro de 2019 e fevereiro de 2020, por meio do questionário *Hospital Survey on Patient Safety Culture*, que reúne o maior número de critérios psicométricos específicos sobre a cultura de segurança do paciente. **Resultados:** Participaram da pesquisa 55 profissionais, a maioria técnicos de Enfermagem em contato direto com o paciente. As dimensões "aprendizagem organizacional/melhoria continuada" e "apoio da gerência do hospital para a segurança do paciente" obtiveram maiores taxas de respostas positivas, consideradas dimensões de fortaleza para a cultura de segurança. Entretanto, dez dimensões não atingiram o nível de fortaleza da cultura de segurança do paciente. **Conclusão:** Mediante a análise das dimensões, evidenciou-se uma cultura de segurança do paciente ainda frágil na instituição, com destaque importante para o apoio da gerência hospitalar e a aprendizagem organizacional, que impactam diretamente na percepção dos profissionais sobre esse tema.
Palavras-chave: Avaliação dos serviços de saúde. Centros cirúrgicos. Cultura organizacional. Segurança do paciente.

RESUMEN: Objetivo: Evaluar la cultura de seguridad del paciente en un centro quirúrgico de un hospital público federal. **Método:** Se trata de un estudio descriptivo exploratorio, de enfoque transversal y cuantitativo. La recogida de datos se realizó entre diciembre de 2019 y febrero de 2020, mediante el cuestionario *Hospital Survey on Patient Safety Culture*, que reúne el mayor número de criterios psicométricos específicos sobre cultura de seguridad del paciente. **Resultados:** Participaron de la investigación 55 profesionales, la mayoría técnicos de enfermería en contacto directo con el paciente. Las dimensiones "aprendizaje organizacional/mejora continua" y "apoyo de la gestión hospitalaria a la seguridad del paciente" obtuvieron mayores índices de respuestas positivas, consideradas dimensiones de fortaleza para la cultura de seguridad. Sin embargo, diez dimensiones no alcanzaron el nivel de fortaleza de la cultura de seguridad del paciente. **Conclusión:** A través del análisis de las dimensiones, la cultura de seguridad del paciente aún era frágil en la institución, con importante énfasis en el apoyo a la gestión hospitalaria y al aprendizaje organizacional, que impactan directamente en la percepción de los profesionales sobre este tema.
Palabras clave: Investigación sobre servicios de salud. Centros quirúrgicos. Cultura organizacional. Seguridad del paciente.

INTRODUCTION

Health incidents can be of three types: with harm, considered adverse events (AE), resulting from health care that caused some unintentional harm to the patient, whether avoidable or not[1]; without harm, characterized when there is an error, but it is unable to generate problems; and near miss, in which the error is identified and corrected before it happens[2].

In the period from March to December 2018, 272,689 AE were reported, of which around two thirds caused harm to patients[3].

The main reasons for AE are deficiencies in the design, organization, and operationalization of the system rather than professionals and products individually[4]. Therefore, it is valid to consider that isolated actions are not responsible for the incident, but a sequence of events as well as an environment conducive to the occurrence of these AE.

Patient safety culture (PSC) is the product of values, attitudes, perceptions, skills, and behavioral patterns of groups and individuals, which determines the commitment, style, and mastery in managing healthcare safety in an organization[5].

In this context, evaluating PSC is important to understand the organizational conditions that lead to possible harm to patients in healthcare services. Furthermore, it has several uses, such as: diagnosing the level of PSC, possible risks of harm, evolution of patient safety (PS) interventions, and monitoring the evolution of PSC over time as well as incident notification[6].

One of the responsibilities of the Centers for Patient Safety (CPS) is to promote PSC by implementing patient safety plans in healthcare institutions[7].

From this perspective, measuring PSC involves evaluating the variables that permeate the hospital environment and the care provided to the patient by the multidisciplinary team. Thus, one of the tools used in the evaluation process is the Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire, which provides professionals and managers with more precise and extensive data on the PSC of a healthcare service, and can serve as a comparison with other health units or hospitals[8].

In this scenario, evaluating PSC in a surgical center (SC) is a challenge for healthcare practices. A total of 234 million surgeries are performed annually, with 7 million incidents and 2 million deaths, 50% of which could have been avoided[9].

Furthermore, the length of stay for patients who present with AE in elective surgeries can vary from 1 to 102 days, with an average of 11.9 days, a high number when compared to the nonoccurrence of these events. Therefore, by increasing the hospital length of stay, the patient is susceptible to exposure to pathogens capable of causing infections for a longer period of time[10].

Hence, the development of research on PSC within the SC is vital, as the quality of care must be continually assessed, both to guarantee quality care and to understand and reflect on healthcare practices, allowing the improvement of good safety practices.

Therefore, the relevance of the present study is evidenced, as it considers the perception of professionals involved in the SC context about PS in this environment. Thus, it will be possible to analyze whether the practices developed within the surgical environment are, in fact, safe.

OBJECTIVE

To evaluate PSC in a SC of a federal public hospital.

METHOD

This is an exploratory, descriptive study, with a cross-section and a quantitative approach, developed in the SC unit of a university hospital in the Northeast region of Brazil, a reference in highly complex procedures. It performs more than 30 surgical specialties, with emphasis on kidney transplants, oncological and cardiac surgeries and neurosurgeries.

The sector has seven operating rooms available for surgeries of all sizes, with the necessary equipment for all surgical specialties proposed. All performed procedures are exclusively funded by the Brazilian Unified Health System (SUS).

Healthcare professionals with secondary, higher, and technical education and who were part of the hospital's SC were selected for the study. Interim professionals or those who were not part of the institution's permanent staff were excluded, in order to ensure better quality of responses.

Data were collected in person in different shifts, from December 2019 to February 2020, by completing the questionnaire on electronic devices (tablets or smartphones), using software developed for automatic data collection and analysis, namely: PSC E-Questionnaire, available from: https://csp.qualisaude.telessaude.ufrn.br/.

The participants were selected as follows: the professionals were approached and received the main research

information; upon agreement to participate, the participants were registered in the system and then their authorization was requested by signing the Informed Consent Form in the very system. Hence, participants had access to the questionnaire and decided whether to respond immediately or at a more opportune time, at the institution or at home.

In order to obtain as many responses as possible, three attempts were made via email for each participant, within 7, 10, and 15 days, after the first sending of the questionnaire.

The instrument used for collection was the translated electronic HSOPSC questionnaire, adapted and validated to the Brazilian cultural reality and hospital context.

In the original cross-cultural validation study for Brazilian Portuguese, the instrument underwent conceptual adaptation of words and idiomatic expressions as well as healthcare professional categories that do not apply to the reality of Brazil[11,12]. The questionnaire presented a good validation rate, considering Cronbach's alpha between 0.52 and 0.91 for the different dimensions, and it had a cutoff score defined using the Kolmogorov-Smirnov test[13].

The HSOPSC was chosen because it is a comprehensive instrument, used in different cultural contexts and that gathers the largest number of specific psychometric criteria regarding PSC. This instrument provides easy access for research participants to respond to the instrument's items, in addition to presenting the data in a clear and objective way for the researcher.

The questionnaire has 42 questions, distributed across 12 dimensions (D) of safety culture:

- D1. Frequency of reported events;
- D2. Safety perception;
- D3. Expectations and actions of the management/supervision of the unit/services that promote safety;
- D4. Organizational learning/continuous improvement;
- D5. Teamwork in the unit/service;
- D6. Openness for communication;
- D7. Feedback and communication about errors;
- D8. Nonpunitive response to errors;
- D9. Personnel sizing;
- D10. Hospital management support for patient safety;
- D11. Teamwork between units;
- D12. Issues with shift changes and transitions between units/services.

The questions were constructed based on a Likert scale with five response alternatives: agreement — "totally disagree," "disagree," "neither agree nor disagree," "agree," and "totally agree"; and frequency — "never," "almost never," "sometimes," "almost always," and "always."

The questionnaire also has a global qualification question for the PS level (0–10) and a question about the number of safety incidents reported in the last year. The results are evaluated based on the performance of each item and dimension.

Data analysis was performed based on the description of the percentages of positive responses in each of the safety culture dimensions and in the total dimensions, followed by their respective 95% confidence intervals (95%CI), which serve to classify the dimensions in strengths — when the items present 75% or more of positive responses — and weaknesses — whose percentages of positive responses are equal to or less than 50%.

The average overall score for patient safety, provided by the respondents, was also described, ranging from 0 to 10 (1 and 2, poor; 3 and 4, bad; 5 and 6, regular; 7 and 8, good; and 9 and 10, excellent).

This study followed the ethical-legal principles of research carried out with human beings, in accordance with Resolution No. 466/12 of the National Health Council, approved by the Research and Ethics Committee of Universidade Federal do Rio Grande do Norte (UFRN), CAAE No. 23713019.5.0000.5537.

RESULTS

A total of 73 questionnaires were sent to professionals who agreed to participate in the research; 55 were answered, totaling 75% of responses.

The characteristics presented in Chart 1 show that the majority of respondents had direct contact or interaction with the patient and more than half of the participants were part of the sector's Nursing staff. Regarding the weekly workload, 37 (68.5%) worked between 21 and 39 hours, and 22 (40.7%) had been working in the unit for 2 to 5 years.

According to information presented in Chart 2, the dimensions with the highest response percentages were: "organizational learning/continuous improvement" (48; 88%) and "hospital management support for patient safety" (42; 75.5 %), considered a strength for the safety culture.

However, ten dimensions did not reach the strength level of the PSC, of which five were considered weak dimensions, highlighting: "nonpunitive responses to errors" (17; 30.3%) and "frequency of reported events" (22; 40.5%).

From this perspective, the three items responsible for considering the best percentage of positive responses in the

"organizational learning/continuous improvement" dimension stand out. Subsequently, the second highlighted dimension obtained good results in items B1 and B2, followed by an average result in item B3 (Chart 3).

Chart 1. Characteristics of interviewees in the surgical center of the university hospital.

Characteristics	Number (%)
Direct contact with patients	44 (86.3)
Position or function in the hospital	
Nursing technician	28 (53.8)
Nursing assistant	2 (3.8)
Nurse	10 (19.2)
Resident physician	4 (7.7)
Clinical staff doctor	1 (1.9)
Administrative assistant/secretary	2 (3.8)
Pharmacy and radiology technician	2 (3.8)
Weekly workload (hours)	
Up to 2	4 (7.45)
21 to 39	37 (68.5)
40 or more	13 (24.1)
Working time in the unit (years)	
Less than 1	9 (16.7)
2 to 5	22 (40.7)
6 to 10	3 (5.6)
11 to 15	4 (7.4)
16 to 20	1 (1.9)
21 or more	6 (11.1)

The dimension with the lowest positive percentage was "nonpunitive response to errors," followed by "frequency of reported events," a dimension that obtained low percentages of positive responses in the three items, highlighting item C3 (Chart 4).

The dimensions presented in Chart 4 are followed by the dimensions "issues with shift changes and transitions between units/services" and "teamwork between units." The last dimension with negative emphasis is "feedback and communication about errors," showing greater weakness in items D1 and D2 (Chart 5).

The dimension "perception of PS in the work environment" was positive for most professionals, who classified it as good (36; 69.2%), excellent (8; 15.4%), regular (7; 13.5 %), and bad (1; 1.9%). The survey also showed that 34 (63%) respondents did not report any events and that only 12 (22.2%) reported 1 to 2 cases during the last 12 months.

DISCUSSION

Among the dimensions indicated by the instrument, "organizational learning/continuous improvement" stands out positively. Considered a strength, it is a fundamental aspect for strengthening a culture based on methods that seek the team involvement in the development of a safe system[14,15].

To implement improvement actions, it is necessary to make the institution aware of the issues surrounding PS, in such a way that hospitals must learn from the errors made to seek new opportunities for improvement[16].

Chart 2. Percentage of responses per dimension.

Safety culture dimension	Number (%)
Frequency of reported events	22 (40.5)
Safety perception	28 (51.9)
Expectations and actions of the management/supervision of the unit/service that promote safety	41 (73.8)
Organizational learning/continuous improvement	48 (88)
Teamwork in the unit/service	40 (72.1)
Openness for communication	28 (50)
Feedback and communication about errors	27 (49.4)
Nonpunitive responses to errors	17 (30.3)
Personnel sizing	29 (52.1)
Hospital management support for patient safety	42 (75.5)
Teamwork between units	25 (45.9)
Issues with shift changes and transitions between units/services	25 (45.3)

Chart 3. Distribution of responses per items in the dimensions with positive highlight.

Organizational learning/continuous improvement	Positive n (%)
A1 – We are adopting measures to improve patient safety.	52 (94.3)
A2 – When an error is identified in patient care, we adopt measures to prevent it.	48 (86.8)
A3 – After implementing changes to improve patient safety, we evaluate their effectiveness.	45 (82.7)
Hospital management support for patient safety	**Positive n (%)**
B1 – The hospital management provides a work climate that promotes patient safety.	42 (76.9)
B2 – The actions of the hospital management demonstrate that patient safety is a priority.	44 (80.8)
B3 – Hospital management only shows interest in patient safety when an adverse event occurs.	38 (68.6)

Chart 4. Dimensions with the lowest percentage of positive responses per item.

Nonpunitive response to errors	Positive n (%)
E1 – Professionals consider that their errors can be used against them.	14 (25.5)
E2 – When an event is reported, it seems that the focus falls on the person and not on the problem.	24 (44.2)
E3 – Professionals fear that their errors will be recorded in their employment records.	12 (21.2)
Frequency of reported events	**Positive n (%)**
C1 – How often are the errors identified and corrected before affecting the patient reported?	26 (47.1)
C2 – How often are the errors that do not pose a risk of harm to the patient reported?	21 (37.5)
C3 – How often are the errors that could cause harm to the patient, but did not, reported?	20 (36.7)

Chart 5. Dimensions with a low percentage of positive responses per item.

Issues with shift changes and transitions between units/services	Positive n (%)
G1 – Is the care process compromised when a patient is transferred to other sectors of the hospital?	27 (50)
G2 – Is it common to lose important information about patient care during shift changes?	23 (42.3)
G3 – Problems often occur when exchanging information between hospital units.	15 (28.6)
G4 – In this hospital, shift changes are problematic for patients.	33 (60)
Teamwork between units	**Positive n (%)**
F1 – The hospital units are not well-coordinated with each other.	20 (35.8)
F2 – There is good cooperation between hospital units that need to work together.	26 (47.2)
F3 – It is often unpleasant to work with professionals from other hospital units.	21 (38.5)
F4 – Hospital units work well together to provide the best care for patients.	35 (62.7%)
Feedback and communication about errors	**Positive n (%)**
D1 – We are informed about changes implemented as a result of event notifications.	24 (44.4)
D2 – We are informed about errors that occur in this unit.	20 (37)
D3 – In this unit, we discuss ways to prevent errors in order to prevent them from recurring.	37 (66.7)

The second dimension with the highest percentage of positive responses was "hospital management support for patient safety," which evaluates the performance of hospital management regarding PS from the perspective of health professionals who are directly involved in care. The responses to the items in this dimension demonstrate that, from the professionals' perspective, actions to promote this culture are being prioritized by the hospital management. Furthermore, the management shows interest in working on this topic, as measures are taken even before the occurrence of AE.

Thus, the personal practice of leaders positively affects the PSC, with a strong and consistent impact on PS, which can be achieved, for example, through a leadership style that

empowers employees and has open communication between team members[17].

From this perspective, the hospital institution must learn from the errors made to seek new opportunities for improvement. Therefore, to implement improvement actions, it is necessary to make the institution aware of the problems surrounding PS, so that the healthcare service can act effectively to reduce risks[18]. Thus, the preventive risk reduction action must be cyclical, involving planning, implementation, monitoring, and intervention regarding the identified weaknesses[18].

Among the components of the PSC, there is the culture of incident notification, whose objective is to encourage the reporting and notification of events, so that underreporting rates decrease, improving the health unit's indicators to identify failures in PS and create strategies to reduce risks to the patient[4].

However, the dimension "frequency of reported events," deemed a priority for the PSC, had a percentage of positive responses below 50%, being considered one of the weak dimensions of the study. This fact affects the identification of risks and the promotion of information to improve safety[16].

Item C3 highlights a relationship between event notification and the presence of a punitive culture, leading to a low frequency of reporting incidents due to fear of punishment by the involved professionals. The team's lack of trust and knowledge can also make it difficult to notify events[19].

The interviewees' perception regarding the "feedback and communication about errors" dimension obtained similar results to other studies carried out in Brazilian public hospitals. These results highlight a weakness in the exchange of information about AE occurring in the unit, which impacts the reflection and learning about PSC[10,16].

The dimension with the highest overall percentage of negative indices was "nonpunitive response to errors," similar to findings in most studies[11,14,15,20]. The results show a worrisome panorama in terms of punitive culture, as participants believe that their errors or failures can be used against them, in addition to being concerned about the possible recording of incidents in their functional records.

From this perspective, the low number of AE reported may be related to the culture of blame rooted in the professional team or a lack of awareness about the importance of notifying AE[14]. This is evidenced by the high rates of underreporting, when there is a consensus among experts on the subject that the reported numbers of AE are a very modest estimate in relation to the real value of the issue[15]. "Teamwork between units" was also considered a dimension

with a negative result, demonstrating a worrisome scenario for PSC in the SC, as effective communication between professionals is crucial for a safe care, especially in complex services that involve multiple professionals. However, dialogue remains a challenge for safe care in SC[21].

Therefore, corroborating the surgical scenario that requires interaction with different sectors and professionals of the hospital, there is interaction between professionals from different units, who must coordinate to provide care, being a daily exercise for the development of teamwork. Hence, from the identification of this weakness in the PSC, there is an opportunity to improve the quality of care, which must be properly used by the Centers for Patient Safety[21].

Ultimately, the dimension considered weak for PSC is the "issues with shift changes and transitions between units/services." Although the items did not present favorable results for PSC, the findings showed similarities with other Brazilian studies[14,16].

PSC is rarely perceived in the same way by the entire organization. This perception may vary according to aspects such as the worker's hierarchical position and professional category, which is reflected in safety results[17].

Furthermore, the response percentage is considered an indicator of the level of safety culture, as the greater the culture, the more professionals feel motivated to respond to this type of questionnaire[22].

This study had some limitations, such as the adherence of employees to participate in the research, justified by the length of the collection instrument, and the low percentage of responses from professionals who showed interest in participating, even after sending the questionnaire back to the electronic addresses and going to the SC in person. Likewise, as with all voluntary surveys, estimates may be overestimated, considering that the answers may have been given by those people most committed to the topic.

CONCLUSIONS

Based on our results, we evaluated the perception of healthcare professionals about PSC, in addition to verifying the panorama of this culture through the dimensions of HSOPSC in a multidisciplinary team.

We evidenced, through the analyzed dimensions, that there is still a weak PSC in the institution; however, the support from hospital management has a great impact on the professionals' perception of the topic. In this context, a critical look

at possible failures is necessary in search of improvements to the quality of patient care. Therefore, organizational learning increases in the form of teamwork, promoting an environment that prioritizes the safety issues addressed in this study.

The application of this questionnaire can contribute to improving the work process of professionals working in the SC as well as allowing the increase of the adoption of a positive safety culture.

Thus, we expect that the results of this research can contribute to management actions to control and continuously improve the quality of surgical care in the face of identified problems.

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None.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest.

AUTHORS' CONTRIBUTIONS

RMS: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing, Supervision. CBO': Resources, Writing – review & editing. BSS: Resources, Writing – review & editing. EBLM: Resources, Writing – review & editing. MLBM: Supervision, Resources. SSMX: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing, Supervision.

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