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Difficulties of nurses in patient safety in the surgical center: An exploratory study

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ABSTRACT

Objective: To describe the nurses' difficulties in managing patient safety in the surgical center. **Method:** A descriptive exploratory study, with a quantitative and *qualitative* approach, conducted by means of an online survey with 204 nurses working in the surgical centers from different Brazilian regions. The questionnaire contained data on socio-professional characterization and an open question. For analysis, descriptive statistics and textual analysis were adopted with the support of the IRAMUTEQ software. **Results**: Three semantic classes were obtained: (1) Organizational support (35.6%); (2) Interpersonal conflicts at work (38.3%); and (3) Involvement of the health team in the safe surgery checklist (25.8%). **Conclusion:** The nurses' difficulties in managing patient safety in the surgical center are mainly related to interpersonal relationships in the workplace and to organizational support.

Descriptors: Patient Safety; Surgical Centers; Nursing Care; Hospitals; Organization and Administration.

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INTRODUCTION

The Surgical Center is a unit that includes a structured socio-technical, administrative and psychosocial system. The complexity that permeates this work environment is related to surgical-anesthetic procedures, to the use of technology, and to the involvement of different professional categories[1].

Due to the surgical condition, the perioperative period is marked by susceptibility to errors, given the vast complexity of procedures and the necessary articulation between the preoperative, transoperative and postoperative stages[2]. In this perspective, the need to deepen the knowledge about safe care in the surgical period is inserted, a topic that has been discussed worldwide, especially after the publication of the *Safe Surgery Saves Lives* campaign of the World Health Organization (WHO), which defined international safety standards for surgical procedures[3].

In Brazil, patient safety has been part of the political agenda since 2013, with the mobilization of the Ministry of Health together with the World Health Organization, following the publication of Ordinance 5290/2013, which instituted the National Patient Safety Program[4]. In Nursing care in the surgical center, the nurse is present at all stages of the surgical period, being considered one of the main agents of the health team who can contribute to the transformation of patient care with a view to reducing adverse events[5]. In the Brazilian scenario, according to data from the Unified Health System, there were 31,774 incidents in the country in 2015, 93% of them in the hospital environment. It is also estimated that, on average, 50% of the adverse events are related to surgical assistance and that they could have been avoided[2-4].

Adverse events have the potential to cause serious harms and to provide negative repercussions in the patient, such as emotional physical harms, increased length of hospital stay and increased hospital costs, since their occurrence is directly related to the quality of health care and to the patient safety culture. To reduce adverse events and improve patient safety in the surgical center, it is necessary to implement a safety culture to enhance changes in the professional practice within this sector[5].

The safety culture is the result of values, attitudes, perceptions and competences of the group or individuals that determine behavioral standards for the institution's security management. In this context, the surgical center has been considered as one of the hospital environments where the greatest number of adverse events related to patient safety occurs due to the complexity present in this sector[6-7].

Thus, scientific production on patient safety in the surgical center is scarce, although it is a current and relevant topic for the Nursing practice in these care environments. In addition, recent studies on patient safety have focused on analyzing the patient safety culture[5,6]and on identifying technologies and good practices to promote patient safety[8].

In view of the above, the results of this study can assist in the development of actions and provide opportunities for planning strategies aimed at patient safety in the perioperative period. Therefore, this study is aimed at answering the following guiding question: What are the difficulties identified by nurses in managing patient safety in the surgical center?

The objective is to describe the nurses' difficulties in managing patient safety in the surgical center.

METHOD

A quantitative and *qualitative* research study, of the exploratory descriptive type, developed from an online survey, on the *Google Forms*® platform. The online survey was chosen in order to enhance data collection, allowing greater access to convenience sampling of the participants selected for the survey[9].

The research started by sending the link containing the survey questionnaire via e-mail to the nurses who work in a surgical center in Brazil and who were registered with the Brazilian Society of Surgical Center (*Sociedade Brasileira de Centro Cirúrgico*, SOBECC), Sterilization Material Center and Post-Anesthetic Recovery Center, the Brazilian Network of Nursing and Patient Safety (*Rede Brasileira de Enfermagem e Segurança do Paciente*, REBRAENSP) and the Network of Hospitals in Brazil with a Patient Safety Center (*Núcleo de Segurança do Paciente*, NSP) registered with the National Health Surveillance Agency (*Agência Nacional de Vigilância Sanitária*, ANVISA).

The messages were sent directly by the aforementioned institutions or by the researchers from the list of available e-mails. In addition, the Regional Nursing Councils (*Conselhos Regionais de Enfermagem*, COREN) and the state sections of the Brazilian Nursing Association (*Associação Brasileira de Enfermagem*, ABEN) were asked to forward the questionnaire to associate nurses. Another method adopted was sharing the questionnaire link on the social networks *Facebook*®, *LinkedIn*® and *Instragam*® and in *WhatsApp*® groups.

Data collection was carried out in the second semester of 2017, using an instrument consisting of a socio-professional characterization form for nurses containing gender, age, experience in the surgical center,

training, region of the country, type of work institution, practice area, weekly workload, type of professional activity and information about the service, such as the number of operating rooms under the responsibility of the nurse and number of surgeries; as well as an open question about the nurses' difficulties in managing care for patient safety in the surgical center. Before data collection, a pre-test of the instrument was carried out with three nurses in the surgical center and two nurse professors with experience in the topic. There was no need to modify the instrument. The data obtained were organized in a *Microsoft Excel*® spreadsheet.

The inclusion criterion in the study was a minimum professional experience of three months as a surgical center nurse. Questionnaires with incomplete and duplicate information were excluded. Duplicity of answers was assessed by auditing the participants' e-mail records, considering the last response received. From this, a convenience sample was obtained.

The initial sample consisted of 248 answers. 10 participants who indicated having worked in the surgical room for less than three months were excluded, as well as 10 questionnaires due to duplication of participation and eight with incomplete items. Sixteen participants did not answer the open question about the difficulties regarding patient safety in the surgical center. Therefore, the answers of 204 nurses, who make up the final research sample, were considered.

Data analysis regarding the participants' socio-professional profile was performed using the *Statistical Package for Social Sciences* (*SPSS*) *for Windows software,* version 19. The categorical variables were assessed by means absolute and percentage frequency. For the continuous variables, measures of position (mean, minimum and maximum) and dispersion (standard deviation) were analyzed.

The answers to the open question of the questionnaire were analyzed using the *Interface de R pourles Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ) software, which explores the main information contained in a text segment through processing and statistical analysis. Each analyzed text concerns the answer of one of the participants to the open question and the set of texts must be organized in a single *corpus* for processing the data that was prepared in an *Open Office*® program file. Terms composed of more than one word were rewritten using a dash between the words in order to identify them as a unique term in the analyses. The categories of words included for analysis were the following: adjectives, nouns, verbs and unrecognized forms, so that 98.3% of the material was used by the software.

The analysis in IRAMUTEQ occurs through the grouping of words called occurrences, by semantic similarity, allowing five types of analysis: classic textual statistics; research on specificities of groups and confirmatory factorial analysis; Descending Hierarchical Classification (DHC); analysis of similarity of words; and word cloud[10]. In this study, analysis by DHC was performed, which generates semantic classes. From the text segments assigned to each of the classes revealed by the program, the data were analyzed and interpreted by the researchers to identify the difficulties identified by the nurses in managing patient safety in the surgical center.

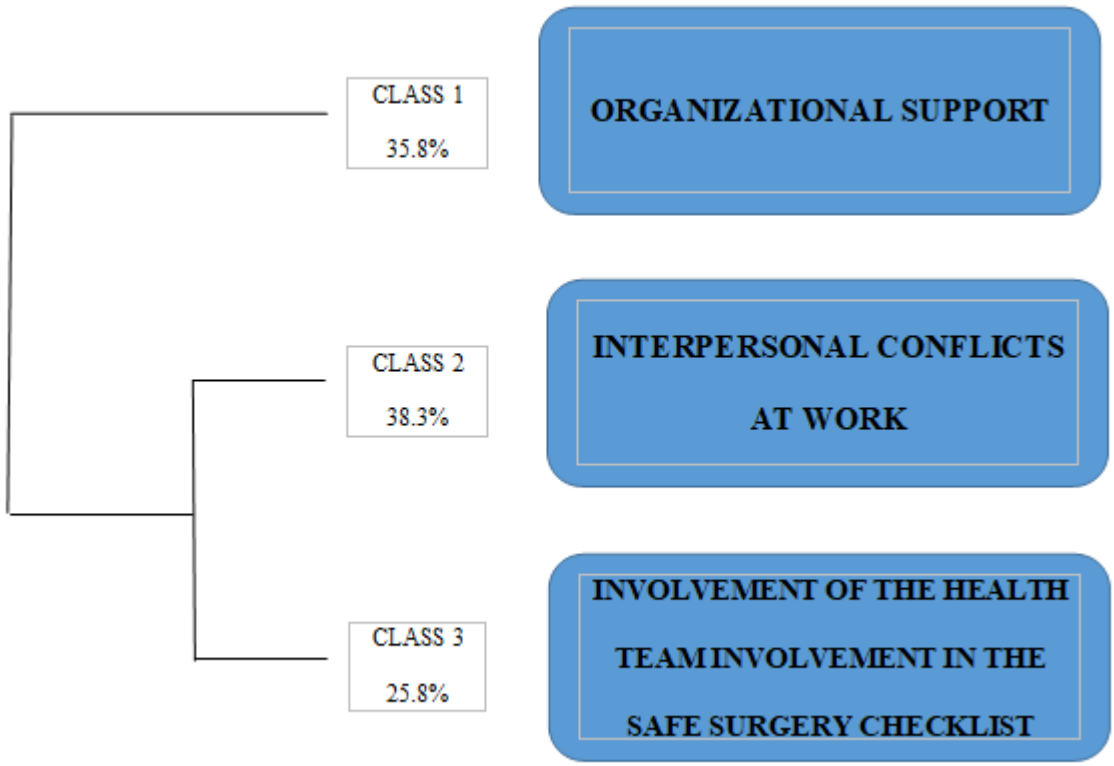
The ethical recommendations were followed and the research was approved by the Research Ethics Committee of the Federal University of Santa Catarina, by means of Certificate of Presentation for Ethical Appreciation (*Certificado de Apresentação para Apreciação Ética*, CAAE) No. 64255317.9.0000.0121. The Free and Informed Consent Form was presented online to the participants before beginning data collection through an explanation page about the research. The participant had to click on the "I agree to participate in the survey" option to confirm agreement with the terms of the study and be directed to the next screen with the questionnaire.

RESULTS

The nurses participating in the research were mostly female (n=186; 85%), with a mean age of 37.6 years old (SD=8.40; minimum of 21 and maximum of 62 years old) and specialization in the surgical center area (n=75; 35%). Regarding the labor variables, there was predominance of nurses from private hospitals (n=79; 39%), from the Southeast region (n=75; 35%), with performance in Nursing care (n=108; 53%) and mean time working in a surgical center of 7.84 years (SD=7.11; minimum of 3 months and maximum of 37 years).

As for the nurses' difficulties in relation to patient safety, the *corpus* analyzed was composed of 242 texts, 2,289 words, and 668 different occurrences, divided by the software into 246 text segments. The analysis by CHD generated three semantic classes: (1) Organizational support (35.6%); (2) Interpersonal conflicts at work (38.3%); and (3) Involvement of the health team in the safe surgery checklist (25.8%). The analysis of the relationships between the semantic classes indicates complementarity between classes 2 and 3, which are encompassed by class 1. The frequency of occurrences by class and the relationships between them are shown in Figure 1.

Figure 1 – Distribution of occurrences and relationships between semantic classes. Florianópolis, SC, Brazil, 2020.



Source: Created by the authors

Class 1 refers to the difficulties in relation to organizational support such as lack of employees, turnover of professionals, and support from the institution's managers. It is also highlighted that the difficulties referring to organizational support are related to other semantic classes as a contributing factor to the other difficulties encountered by the nurses in the surgical center. Class 2 covers difficulties regarding communication and teamwork in the surgical center, especially in relation to physicians/surgeons. Class 3 shows the lack of involvement of the health team in adopting the safe surgery checklist. Figure 2 presents statements that illustrate the semantic classes and a qualitative synthesis of each one.

Figure 2 – Semantic classes and synthesis of the study findings. Florianópolis, SC, Brazil, 2020.

Statements	Qualitative synthesis
Organizational support	
Lack of employees in the sector and high staff turnover; Lack of materials, employee turnover, lack of training to improve service; Lack of support from top management for the correct implementation of the checklist for safe surgery, for being a hospital with some owning physicians, they do not comply with the checklist; Adequate physical and material resources and staffing; Lack of organizational structure to enhance the implementation of new patient safety practices.	Absenteeism and employee turnover make it difficult for nurses to work, often needing to perform functions that are not their responsibility. Nursing develops actions in favor of patient safety; however, it needs both assistance and management support to achieve good results.
Interpersonal conflicts at work	
Lack of a multidisciplinary partnership, especially from physicians; The arrogance of the physicians; The cooperation of the medical-surgical team, as they do not consider the presentation of the team to be important and even make fun of it, many times even interrupting checks in the surgical center; There are two major problems: the communication and acceptability of new routines by the multi-professional team, mainly surgeons; The disagreement of some surgeons and anesthetists about good practices for patient safety.	The search for safe patient care in the Surgical Center requires cooperation and participation from the multi-professional team. The importance of using institutional protocols and communication among the professionals is emphasized, since it facilitates the standardization and continuity of care behaviors, contributing to a good interpersonal relationship and, consequently, to a favorable work environment.
Involvement of the health team in the safe surgery checklist	
The adherence of the medical teams to the fulfillment of international safety goals; Non-collaboration of most of the surgeons and anesthetists; Lack of involvement of the Nursing professionals, anesthesiologists and surgeons; The commitment of some employees; The commitment of the anesthetists to patient safety actions.	It is important to use the checklist and safe surgery protocols to reduce harms to the surgical patient. The commitment and involvement of the multi-professional team, including medical and nursing staff, is essential to ensure patient safety.

Source: Created by the authors

DISCUSSION

The main difficulties for the nurses in managing patient safety in the surgical room are especially related to "organizational support". In this sense, in the semantic class corresponding to this topic, the participants highlighted the undersizing of the Nursing team, lack of material resources, and lack of support from the managers. In this perspective, the relationship between the conditions promoted by the organization for the Nursing professional practice and the difficulties encountered in managing patient safety in the surgical center is perceived. The complex scenarios show the need for the development of organizational support and control to favor an enabling environment to promote quality and safe care for patients[11].

It is noticed that the undersizing of the Nursing team was one of the main difficulties cited by the participants, highlighting the high turnover and the lack of professionals for work in the surgical center. In health organizations, work intensity is mainly revealed by under-staffing, resulting in precarious work and compromised patient safety. Thus, the adequate sizing of the Nursing team is an important element for guaranteeing the quality and safety of the care provided to the patients[12]. In addition to the difficulties already presented, the nurses also highlight the lack of material resources in the surgical room, which is in line with the lack of human resources for the development of care. In this sense, the scenario of limited resources, the workload of the Nursing team and the accumulation of nurses' functions contribute to weaknesses in patient safety: the high rate of cancellation and suspension of surgeries due to lack of resources, equipment, physicians and Nursing professionals[13]. The limitation of work resources and the accumulation of functions of the nurses are aspects that contribute to weaknesses in patient safety. This problem involving work overload and the potential risk of an adverse event is one of the causes of the high mortality rates in the health units, and is strongly related to the reduced number of Nursing professionals, which favors the incidence of adverse events[14].

Another aspect highlighted is the lack of management support to promote patient safety in the surgical center. The assessment of the perception of the safety culture among the health professionals working in surgical centers showed that nurses in managerial positions need to encourage patient safety in the surgical unit[5]. The challenges and limitations encountered in managerial activities in the surgical room derive from intrinsic conditions in the environment itself, in addition to

unpredictability and to the constant need for planning and organizing actions.

For the second class, called "Interpersonal conflicts at work", difficulties such as the relationship with physicians, the lack of communication among the professionals and multidisciplinary teamwork are highlighted. Relationship problems and communication failures can contribute to potential events related to patient safety.

In addition, the professionals highlighted the relationship with the medical team as a difficulty. For the nurses, the difficulties in maintaining a good relationship with the medical team is one of the main difficulties faced in the surgical center. Relationship difficulties between the medical and nursing teams are also described, and other nurses' work environments as factors that can negatively influence patient safety[15].

Poor communication is implicated in the occurrence of many adverse events in the operating room. In the Danish context, four communication and relationship patterns were identified in interdisciplinary surgical teams: proactive and intuitive communication; silent and common communication; inattentive and ambiguous communication; and contradictory communication. The first occurs when the team members exchange considerations about the expected challenges before and during the surgical procedures and are then able to solve the problems in advance through shared decision-making.

Silent and common communication manifests itself when communication among the team members was informative and instructive, with no previous discussions regarding the patient and the surgical procedure. Inattentive and ambiguous communication, on the other hand, is characterized by inattention and exchange of ambiguous communications among the team members. In contrast, contradictory communication refers to the exchange of communication among the team members in an ironic and/or disrespectful manner. Therefore, it is essential to invest in improving work with regard to communication among the team members to advance issues related to patient quality and safety in the surgical center[16].

Communication within the surgical center was also highlighted by the nurses as a difficulty. It is evidenced that communication is a key competence for safety in the health services, an environment in which professionals must be able to communicate effectively with the team and the patients. A Peruvian study that sought to assess the culture of patient safety highlighted the failures in communication as one of the greatest

weaknesses[17]. Nurses at a hospital in Angola identified that communication is a risk in the operating room when the team members talk very loudly about other topics, which interferes with the proper communication process[18]. For the last semantic class, "Involvement of the health team in the safe surgery checklist", the lack of adherence by the health team to the safe surgery checklist stands out, considered a challenge for the promotion of patient safety in this sector. A study carried out with the health team and instructors in order to identify knowledge about the surgical safety checklist verified that most knew the protocol, but the lack of team adherence was the main challenge found for using this protocol[19].

The involvement of all the professionals who are directly or indirectly connected with care is of paramount importance for the development of a safe environment within the surgical center. A Brazilian study that measured the safety climate showed that this aspect is inherent to the professional practice, but little developed within the surgical center[5].

Problems related to the low safety culture in the surgical environment are described not only in Brazil, but also in other countries. In the international scenario, it was identified that, when disseminated across the team, the safety culture has been associated with the reduction of harms to patients in hospitals and in units such as the surgical center[20].

In this sense, the team's lack of commitment in the results can be associated as a factor that leads to low adherence to the safety protocols by the medical team. It is important that nurses pay attention to the need of greater involvement of surgeons and anesthetists in the search for patient safety in the surgical center. This result can be related to the physicians' lack of knowledge about patient safety protocols and/or checklists. In addition to that, many surgeons and anesthetists have sporadic performance in surgical centers according to their specialties, with little or no participation in organizational discussions on patient safety[20].

Finally, the difficulties related to organizational support, communication and adherence to the safe surgery checklist suggest interference with patient safety in the surgical center and require specific actions according to the work context. The surgical center nurse has the opportunity to have a positive impact on patient care through shared planning of the actions to be performed, being one of the professionals responsible for managing patient safety.

The results indicated that organizational support, interpersonal conflicts at work and the involvement of the health team in the use of the safe surgery checklist were the main

difficulties. Effective communication among the team members is still the main difficulty for nurses in the surgical center, being the problem that most contributed to the occurrence of adverse events in surgical procedures.

As a limitation of the study, the use of online data collection can be considered a complicating factor in the control of samples and populations, as the participant is more susceptible to refusing or abandoning the study in progress. In addition to that, there is a possibility for people interested in the research topic to bias the sample composition.

CONCLUSION

This study allowed describing the difficulties faced by nurses in the management and promotion of patient safety in the surgical center. The results presented may contribute to the practice of nursing assistants and surgical center managers in the development of strategies to overcome the difficulties that can compromise patient safety. It is important that nurses have organizational support and working conditions that enhance their performance as leaders and managers of care in the surgical center, in favor of greater adherence to safety protocols by all team members.

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Contributions:

Larissa de Siqueira Gutierres: acquisition, analysis and interpretation of study data.

Fernando Henrique Antunes Menegon: approval of the final version of the study to be published.

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