■ Original Article
doi: https://doi.org/10.1590/1983-1447.2019.20180192

Safety culture and communication about surgical errors from the perspective of the health team

Cultura de segurança e comunicação sobre erros cirúrgicos na perspectiva da equipe de saúde

Cultura de la seguridad y comunicación sobre errores quirúrgicos en la perspectiva del equipo de salud

Josemar Batista[a]
Elaine Drehmer de Almeida Cruz[a]
Francine Taporosky Alpendre[a]
Danieli Parreira da Silva Stalisz da Paixão[a]
Ana Paula Gaspari[a]
Aline Batista Mauricio[a]

How to cite this article:
Batista J, Cruz EDA, Alpendre FT, Paixão DPSS, Gaspari AP, Mauricio AB. Safety culture and communication about surgical errors from the perspective of the health team. Rev Gaúcha Enferm. 2019;40(esp):e20180192. doi: https://doi.org/10.1590/1983-1447.2019.20180192.

ABSTRACT

Objective: To analyze the safety culture related to the communication dimensions and event notification from the perception of the health team.

Method: Survey carried out in a teaching hospital of Paraná through the application of the Survey on Patient Safety Culture questionnaire to 158 professionals working in surgical units from May to September 2017.The analysis of the data was done by descriptive and analytical statistics; dimensions with positive responses ≥75% represent strong areas for patient safety.

Results: No dimension or item/question were considered strong to surgical patient safety. There was a difference, with a less negative perception from nursing in relation to medicine, in the dimensions "Return of the information and communication about the error" and "Frequency of events reports" (p<0.001).

Conclusion: The health team perceives that there is fragility in the patient safety in relation to the communication dimension, demanding actions that promote the patient safety.

Keywords: Organizational culture. Communication. Patient safety. Surgicenters.

RESUMO

Objetivo: Analisar a cultura de segurança do paciente em relação às dimensões relativas à comunicação e notificação de eventos na percepção da equipe de saúde.

Método: Survey realizado em hospital de ensino do Paraná mediante aplicação do questionário Hospital Survey on Patient Safety Culture a 158 profissionais atuantes em unidades cirúrgicas no período de maio a setembro de 2017. A análise dos dados se deu por estatística descritiva e analítica; dimensões com respostas positivas ≥75% representam áreas fortes para a segurança do paciente.

Resultados: Nenhuma dimensão ou item/questão foram considerados fortes para a segurança do paciente cirúrgico. Houve diferença, com percepção menos negativa da enfermagem em relação à medicina, nas dimensões "Retorno da informação e comunicação sobre o erro" e "Frequência de relatos de eventos" (p<0,001).

Conclusão: A equipe de saúde percebe fragilidade na segurança de pacientes em relação à dimensão comunicação, demandando ações promotoras da segurança do paciente.

Palavras-chave: Cultura organizacional. Comunicação. Segurança do paciente. Centros cirúrgicos.

RESUMEN

Objetivo: Analizar la cultura de la seguridad del paciente en relación a las dimensiones relativas a la comunicación y notificación de eventos en la percepción del equipo de salud.

Método: Survey, realizado en un hospital de enseñanza del Paraná mediante el uso de la encuesta Hospital Survey on Patient Safety Culture con 158 profesionales que actúan en unidades quirúrgicas durante el período de mayo a septiembre de 2017. Se realizó el análisis de datos a través de la estadística descriptiva y analítica. Las dimensiones con respuestas positivas ≥75% representan significativas áreas para la seguridad del paciente.

Resultados: Ninguna dimensión o elemento/questión fue considerada como significativa para la seguridad del paciente quirúrgico. Se obtuvo un mayor índice (67,9%) cuanto a la libertad de hablar libremente sobre los riesgos en el cuidado, y un menor índice (25,2%) sobre los cambios generados por la comunicación del error. Hubo diferencias, con percepción menos negativa de la enfermería, en relación a la medicina, en las dimensiones "Retorno de la información y comunicación sobre el error" y "Frecuencia de relatos de eventos" (p<0,001).

Conclusión: El equipo de salud observa una debilidad en la seguridad de los pacientes en relación a la dimensión de la comunicación, demandando acciones que promuevan seguridad del paciente.

Palabras-clave: Cultura organizacional. Comunicación. Seguridad del paciente. Centros quirúrgicos.

[a] Universidade Federal do Paraná (UFPR), Programa de Pós-Graduação em Enfermagem. Curitiba, Paraná, Brasil.

INTRODUCTION

The actions to promote patient safety and to improve the quality of healthcare services have been progressively disclosed in order to prevent unforeseen incidents[1]. Nonetheless, in spite of the advancements regarding the global healthcare challenges, there are still low levels of reliability[2] in healthcare institutions when it comes to rendering proper medical care, which maintains the adverse events (AE) rate arising from structural and procedural errors.

Several factors contribute to such healthcare services frailties, including the practitioner's behavior regarding the compliance to the Good Medical Practices and positive organizational safety culture, which consists of values, attitudes, competencies and behaviors that define the level of commitment to the management and safe medical care[3]. Thus, the Agency for Healthcare Research and Quality (AHRQ) formulated a comparative database called Hospital Survey on Patient Safety Culture – HSOP-SC. It provides 12 dimensions on patient safety culture, among which are notices and reports of healthcare related incidents[4-5].

Effective communication among healthcare providers is crucial for safe care, particularly in multidisciplinary environments of complex medical[6] care services, such as surgical hospitalization rooms. In this sense, the World Health Organization, between 2007-2008 launched the Second Global Patient Safety Challenge (Safe Surgeries Saves Lives), which entails the importance of promoting communication between members of the surgical team through defining the implementation of a surgical safety checklist to prevent surgical errors and to ensure safe care[7]. The Safe Surgeries Saves Lives program was implemented in 2010 in the hospital where this specific research took place.

Although the relevance of effective communication in the surgical environment is recognized, a report published in the United Kingdom identified that communicative failure was the second contributive factor for surgical incidents[8] and health professionals from a Brazilian hospital surgical center reported not noticing improvements in interpersonal communication with the implementation of the surgical checklist[9]. Therefore, it is noticed that improving communication persists as a challenge, especially in aspects of incident reporting and AE and actions promoting safe care feedback, aiming at building a virtuous circle that contributes to the improvement of the organizational culture.

In this sense, through the precepts of the National Patient Safety Program, which establishes the progressive construction of the safety culture with emphasis on learning and organizational improvement, from the identification and notification of incidents[10], this research is justified for investigating the dimensions of the HSOPSC safety culture regarding the opening of communication and surgical errors reports.

It is believed that studying these dimensions contributes to mitigating surgical errors, as well as collaborating with managers on the priority actions list to avoid recurrence of incidents and AE. Thus, the question is: How is the safety culture presented with regard to the opening of communication and surgical errors reports?

This research aimed to analyze the safety culture of the patient in relation to the dimensions related to communication and notification of events in the perception of the health team.

METHOD

A cross-sectional survey-type study carried out in five surgical units and in a general surgical center of a federal teaching hospital in the state of Paraná, whose study population consisted of 248 professionals, including surgeons, anesthesiologists, residents in surgery and anesthesiology, nurses, nursing assistants and technicians. A total of 166 workers were invited to participate in the study to compose an intentional and non-probabilistic sample, based on the recommendation of the AHRQ that establishes a minimum sample of 50% of the target population for censuses ≤500 individuals[5].

They professionals chosen for the research were part of the nursing and medical team, allocated and working in a surgical unit and/or surgical center during the period of data collection, with a minimum workload of 20 hours per week and direct or indirect interaction with patients. The participants whose questionnaires had less than 50% of the questions answered or that contained only responses to the socio-labor profile and/or with the same answer in all dimensions were excluded from the analysis[5].

The data were collected between May and September 2017 using the HSOPSC self-administered questionnaire, translated and validated for the Brazilian context[11]. It contemplates 42 items distributed in 12 dimensions of safety culture evaluated in the individual scope of the units and the hospital. The items, written in a positive and negative way, are answered using a five-point Likert scale, with categories of responses in degree of agreement[5,11]. It was de-

cided to investigate three dimensions ("Openness in communication", "Return of information and communication about error" and "Frequency of event reports"), composed of three items or questions each, because the instrument makes it possible to analyze the dimensions and understand that these best portray the communication culture and answer the objective of this research.

The health professionals were approached individually and/or in groups in their workspace during the morning, afternoon and evening shifts, for the invitation and clarifications about the research. Those who agreed to participate were handled, in a closed envelope, the HSOPSC and the informed consent terms, which were collected by the researcher and coded by the numerical sequence of the returning papers. A *tablet* loaded with the instrument on the *ad hoc* platform of the *Quick Tap Survey* application was used by the participants, optionally.

The collected data was stored in a *Microsoft Office Excel* ® worksheet by double typing, verification and correction of inconsistencies. The answers were grouped as positive (totally agree/agree or always/almost always), neutral (neither agree nor disagree or sometimes) and negative (totally disagree/disagree or never/rarely)[5].

Dimensions and items were classified according to the index reached: strong areas ≥75%, neutral areas ≥51% and ≤74% negative areas ≤50%[4-5]. The internal consistency of the HSOPSC was calculated by the Cronbach's Alpha and was considered as being satisfactory when ≥0.8[12].

The quantitative variables were described by mean and standard deviation, and the qualitative variables by absolute and relative frequencies. The categorical variables were compared through the Chi-square test with a significance value of $p<0.05$ and the data processed using the *Statistical Package for the Social Sciences* software, version 20.0 and statistical professional advice.

The research was approved by the Research Ethics Committee with Institutional Human Beings under the opinion number 1,990,760 and extracted from the master's dissertation entitled: Evaluation of the safety culture and occurrence of surgical adverse events in different administrative natures of the public management[13].

RESULTS

Participated in this survey 158 health professionals; 54.4% (n=86) corresponded to the nursing team. The mean age in years was 43.0 (standard deviation of 12.3) with an average working time of 18 years (standard deviation of 12.2). The sociodemographic and occupational profile of the participants is presented in Table 1.

Table 1 – Sociodemographic and labor characteristics of health professionals working in surgical units/surgical center. Curitiba, PR, Brazil, 2017

Variables	n (%)
Gender	
Female	91 (57.6)
Male	67 (42.4)
Job/Position	
Clinical body physician/assistant physician	41 (26.0)
Resident physician/physician in training	31 (19.6)
Nurse	15 (9.5)
Nursing Technician	24 (15.2)
Nursing Assistant	47 (29.6)
Schooling	
Complete high school	26 (16.5)
Incomplete higher education	12 (7.6)
Complete higher education	35 (22.2)
Post-graduation (specialization level)	59 (37.3)
Post-graduation (master's or PhD level)	25 (15.8)
No answer	01 (0.6)
Working time in the hospital	
≤ 5 years	65 (41.1)
6 - 15 years	29 (18.4)
≥ 16 years	64 (40.5)
Working time in the unit	
≤ 5 years	86 (54.4)
6 - 15 years	21 (13.3)
≥ 16 years	51 (32.3)
Weekly workload	
20 - 39 hours	111 (70.2)
≥ 40 hours	47 (29.8)

Source: Research data, 2017.

Table 2 shows the relative frequency of responses referring to dimensions and the items/questions that comprise them; no strong area for patient safety (≥ 75% positive responses) was observed.

The results are presented according to the team (medical and nursing) in Table 3; there were prevalence of the dimensions classified as fragile areas, with a positive response score ≤50%. Compared to the medical staff, the nursing professionals presented a more positive perception, with a significant difference for the dimensions "Return of information and communication about the error" and "Frequency of reports of events", this one with a satisfactory internal consistency.

Table 2 – Distribution of the results by dimension and safety culture items of health professionals working in surgical units/surgical center. Curitiba, PR, Brazil, 2017

Dimensions and items/questions	Percentage of responses		
	Negative	Neutral	Positive
Communication openness	**26.1**	**23.1**	**50.8**
Professionals can speak freely if they see something that could negatively affect the patient care	10.3	21.8	67.9
Professionals feel free to question the decisions or actions of their superiors	40.5	23.4	36.1
Professionals are afraid to ask questions when something does not seem to be right	27.2	24.1	48.7
Return of information and communication about the error	**30.4**	**31.8**	**37.8**
We receive information about changes implemented from the event reports	36.1	38.7	25.2
We are informed about the errors that happen in this unit	31.0	26.6	42.4
In this unit, we discuss ways to prevent errors by preventing them from happening again	24.1	30.4	45.6
Frequency of events report	**31.9**	**22.8**	**45.3**
When an error occurs, it is noticed and corrected before it affects the patient, how often is it reported?	34.6	21.2	44.2
When an error occurs but there is no risk of harm to the patient, how often is it reported?	33.1	24.2	42.7
When an error occurs that could cause harm to the patient, but does not cause it, how often is it reported?	28.0	22.9	49.0

Source: Research data, 2017.

Table 3 – Distribution of the results by dimension of safety culture of nursing and medical professionals working in surgical units/surgical center and Cronbach Alpha. Curitiba, PR, Brazil, 2017

Dimension	Percentage of responses Nursing Team			Percentage of responses Medical Team			p- value*
	Negative	Neutral	Positive	Negative	Neutral	Positive	
Communication openness (Cronbach alpha=0.55)	26.5	19.8	53.7	25.6	27.0	47.4	0.173
Return of information and communication about the error (Cronbach alpha=0.76)	29.3	25.4	45.3	31.6	39.5	28.8	<0.001
Frequency of events report (Cronbach alpha=0.82)	20.9	22.8	56.3	44.9	22.7	32.4	<0.001

Source: Research data, 2017.
*Chi-square test, p<0.05.

DISCUSSION

The data made it possible to identify the dimensions and the items/questions that were considered, mostly, as neutral or fragile for safety according to the North-American agency, which recognize as satisfactory the index of ≥75% positive responses[5]. It was evidenced, from the perception of the professionals of the present research, that the organizational culture indicators limit the safety of the surgical patient.

This result is consistent if the work profile of the participants is observed, who reported time of work at the unit/hospital that is sufficiently satisfactory to understand aspects of the institutional culture, and that are consonant with the premise of the World Health Organization and of the Joint Commission International, setting out effective communication between the international goals of patient safety[14] and is recognized as one of the challenges for improvements in other predictors of organizational culture.

The culture fragility regarding the opening of communication for mistakes and healthcare failures showed similar characteristics in other public or private hospital institutions, located at the capital and port region of Peru, in whose studies 1.679 healthcare professionals participated. The results showed, for the dimensions "Communication openness", "Return of information and communication about errors" e "Frequency of reports and events", positive response rates of 35%,37% and 30%, respectively[15], making the fragility clear.

Such data is important to consider that communication is one of the required components to struggle in achieving positive results in the surgical area[7]. In addition, it highlights the role of leaderships in order to help overcome barriers and communication issues between departments and services. The leaders determine effective communication parameters by understanding the dynamic that involves the various professional categories and structural units[14].

Of the three dimensions evaluated, "Communication openness" had the lower positive rate (27,4%) on a research performed in China, which was associated with the longest professional working time at the hospital[16]. Considering the current study, 40,5% of the participants reported working time ≥21 years, it is possible to assess the high percentage of negative/neutral responses.

It is observed that the dimension "Return of information and communication about the error" had the highest fragility, to medical and nursing staff (28.8 and 45.3% of positive responses, respectively). This dimension was, on this Chinese study, between the limit dimensions for the safety culture, with 50.5% of the positive responses. (n=334)[16].

A multicentric research in Germany university hospitals has shown that, as in this research, the health team pointed relatively lower rates of positive responses regarding the feedback of reported events, which was observed by the percentage of negative/neutral responses regarding it (48%; n=468)[17]. In Brazil, a cross-sectional study carried out at three public hospital units in the state of Paraná supported by 71 safety culture surveys, revealed feedback as a failure issue at the units surveyed[18].

The low perception of the participants regarding the safety actions adopted from the report events pointed out the need for actions that the managers must perform, such as the sharing of decisions with the purpose of correction and prevention of factors associated with them. The AE notification is encouraged when professionals realize that their actions contribute to generate positive changes in the care practice; on the other hand, the perception of corrective and preventive actions absence competes for progressive under-reporting, which generates failures in the issues diagnosis related to patient safety.

The results indicated that it is imperative to evolve in shared management since 54.5% (n=86) of the participants reported not discussing alternatives to prevent recurrence of surgical errors. Neither did they mention that they feel free to question the decisions or actions of their superiors (63.9%, n=101). These results demonstrated the mutual communication gap among the healthcare, administration and management staff, and they were similar to those reported by the German study participants. This indicated neutrality (53.9%; n=525) for the statement "At this unit, we discuss means of avoiding errors by preventing them from happening again" and 45.4% (n=442) for the statement "Professionals feel free to question the decisions or actions of their superiors"[17].

The identification of fragilities in the work process, regarding errors in communication, can offer subsidies for the development of actions of enhancement in the investigated units, in order to strengthen the safety culture of the professionals who deal with surgical patients. A literature review identified communication as a key competence for safety in the health services, environment in which the professionals must be able to effectively communicate with the team and patients, so that there is reciprocal understanding, support to the meaningful relations and involvement in decision-making about care, decreasing the possibilities of errors and AE[19].

The positive safety culture is favorable to the incidents reports, however, in this research it was considered as a fragile area, with positive responses of 45.3% (n=72) in the dimension "Event report frequency". The incident notifications and AE were also considered areas susceptible for improvements in the Chinese research, whose results were similar, with 43% of positive responses[16], similarly as in the German study, with 38% of positive responses[17]. The results showed the need to increase basic actions for notification and, in this research, with highlight to the medical team, whose index of positive responses were lower than

those of the nursing team. A more positive perception of the nursing team, in comparison with the medical team, in the dimensions "Return of information and communication about the error" and "Event report frequency" ($p<0.001$), corroborates a study carried out in three Moldavia's health institutes in relation to the notification of AE[20].

Among the factors that may have contributed to a more favorable outcome for the nursing team, in this research, they relate to the involvement of a group of nurses, from the institution, to implement the safety actions, as in the introduction of the surgical safety protocol and fall prevention. Furthermore, the nursing team is the group that has more direct interaction with the patients, demonstrating strong awareness in diverse aspects related to patient safety[20].

It is considered that the systematic notification of incidents and AE may promote interdisciplinary discussions to seek solutions based in basic safety actions, whose goal is to avoid the reoccurrence, and identify gaps in patient safety[10]. Therefore, reducing the elements that challenge the openness of effective communication among the surgical team members and promoting the notification of incidents and the surgical AE consist of enhancing ways and managing tools for the promotion of safe care.

CONCLUSION

The results showed fragilities in the organizational safety culture related to communication. Actions to promote the openness of communication, to systematize the information feedback through the error communication, in addition to stimulate the AE notification are necessary for the communication strengthening, recognized as a major dimension for patient safety.

It is expected that the results of this research contribute to the management control actions and continue to improve the quality of the surgical care against the detected problems, adding knowledge for the health professional practices and perioperative nursing. The identification of communication gaps in this research may reflect other healthcare realities and, therefore, instigate the professional and continuing education on the theme, acknowledging its relevance and development in order to build the safety culture.

This research is limited to the low internal consistency of the two analyzed dimensions, showing a low reliability of the professionals' responses to the culture inquiry. Therefore, it is necessary to perform new researches involving other surgical units, including a greater participants sample than the one presented here.

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ACKNOWLEDGMENT

Thanks to CAPES for granting a scholarship to Josemar Batista.

Corresponding author:
Josemar Batista
E-mail: josemar.batista@hotmail.com

Received: 07.18.2018
Approved: 09.03.2018