

# Nurse safety culture in the services of a university hospital

*Cultura de segurança dos enfermeiros entre os serviços de um hospital universitário*

*La cultura de seguridad de enfermeros entre servicios en un hospital universitario*

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## ABSTRACT

**Objective:** To evaluate nurse safety culture in a teaching hospital, as well as to verify differences in the safety culture dimensions between services. **Method:** cross-sectional, quantitative study, conducted from October to December 2015, in a university hospital. The instrument *Hospital Survey on Patient Safety Culture* was applied. **Results:** A total of 195 nurses from four different services participated in the study. Significant difference between services were identified for five dimensions of safety culture: organizational learning ( $P=0.012$ ); return of information and communication about error ( $P=0.014$ ); management support for patient safety ( $P=0.001$ ); general perceptions about patient safety ( $P=0.005$ ); and frequency of event notification ( $P=0.003$ ). **Conclusion:** The medical clinic service had the highest statistical difference between the dimensions. These evaluations allow managers to identify the differences between the same hospital's services, serving as a warning and assisting in the services' improvement.

**Descriptors:** Patient Safety; Organizational Culture; Quality of Health Care; Hospitals; Risk Management.

## RESUMO

**Objetivo:** Avaliar a cultura de segurança dos enfermeiros de um hospital de ensino e verificar as diferenças das dimensões dessa cultura entre os serviços. **Método:** Estudo transversal e quantitativo, realizado em outubro a dezembro de 2015, em um hospital universitário. Foi aplicado o instrumento *Hospital Survey on Patient Safety Culture*.

**Resultados:** Participaram 195 enfermeiros de quatro serviços. Identificou-se diferença significativa entre os serviços para cinco dimensões de cultura de segurança: aprendizado organizacional ( $p = 0.012$ ); retorno da informação e comunicação a respeito de erro ( $p = 0.014$ ); suporte da gestão para segurança do paciente ( $p = 0.001$ ); percepções gerais sobre segurança do paciente ( $p = 0.005$ ); e frequência da notificação de eventos ( $p = 0.003$ ).

**Conclusão:** O serviço de clínica médica apresentou maior diferença estatística entre as dimensões. Essas avaliações permitem que os gestores identifiquem as diferenças entre os serviços do mesmo hospital, servindo de alerta e aperfeiçoando os serviços.

**Descritores:** Segurança do Paciente; Cultura Organizacional; Qualidade da Assistência à Saúde; Hospitais; Gestão de Riscos.

## RESUMEN

**Objetivo:** Analizar la cultura de seguridad de los enfermeros de un hospital escuela y examinar las diferencias de los aspectos de esa cultura entre los servicios realizados.

**Método:** Estudio transversal y cuantitativo, realizado de octubre a diciembre de 2015, en un hospital universitario. Se utilizó el instrumento *Hospital Survey on Patient Safety Culture*. **Resultados:** Participaron 195 enfermeros de cuatro servicios. Se identificó una diferencia significativa entre los servicios en los cinco aspectos de la cultura de seguridad: el aprendizaje organizacional ( $p = 0,012$ ); la información de retorno y la comunicación con respecto al error ( $p = 0,014$ ); el soporte de la gestión para la seguridad del paciente ( $p = 0,001$ ); las percepciones generales sobre la seguridad del paciente ( $p = 0,005$ ); y la frecuencia de comunicación de eventos ( $p = 0,003$ ).

**Conclusión:** El servicio en clínica médica presentó una mayor diferencia estadística entre los aspectos identificados. Estas evaluaciones pueden permitir que los gestores identifiquen las diferencias entre los servicios del mismo hospital, sirviendo como advertencia y perfeccionando los servicios.

**Descriptor:** Seguridad del Paciente; Cultura Organizacional; Calidad de la Atención de Salud; Hospitales; Gestión de Riesgos.

## INTRODUCTION

Safety culture is defined as the product of individual and group beliefs, values, attitudes, perceptions, competencies and behavior patterns that determine the organization's commitment to quality and to patient safety. Safety culture is the sum of what an organization is and does in the pursuit of safe health care<sup>(1,2)</sup>.

In this way, it may be noted that safety culture is a way of thinking, behaving or working in the organization. In this sense, health organizations are inserted within an environment where they influence and are influenced by individuals and other health institutions. The influences of individuals and institutions can manifest themselves in the organizational climate and impact the health care environment<sup>(3,4)</sup>.

In the Brazilian context, safety culture gained prominence and was considered one of the principles of risk management after the creation of the National Patient Safety Program (PNSP). Since then, patient safety networks are becoming increasingly concerned with assessing safety culture because they believe that a fragile safety culture can impact health organization, especially in relation to the care provided and to the development of initiatives<sup>(5)</sup>.

In this sense, it is recommended that health institutions, before implementing any patient safety actions, should first carry out a situational diagnosis of their organizational culture and services. In this way, it will be possible to assess and understand the current status of the organization's security culture, indicating the strong and fragile dimensions. In this sense, developing and strengthening safety culture is important for managing and minimizing risks in health organizations<sup>(4)</sup>.

Currently, a growing concern with the evaluation of safety culture in several scenarios and with various objects of study may be noted, but there is a shortage of studies comparing the services of a same health organization, seeing as safety culture differs between services<sup>(4)</sup>.

In this sense, it is suggested that security culture is frequently assessed, with the purpose of monitoring trends over time and evaluating its impact using performance indicators, in addition to allowing comparisons between services. In general, there are several instruments that evaluate safety culture in the hospital environment; the one chosen for this study was the *Hospital Survey on Patient Safety Culture (HSOPSC)*. This choice is justified due to this instrument being widely used in several countries by studies on safety culture, and also due to it having been translated, validated and culturally adapted for Brazil<sup>(6,7)</sup>. In addition, it is easy to fill, self-applied and takes ten minutes on average to be answered<sup>(7)</sup>.

In the context of a global concern with patient safety, addressing safety culture in a teaching hospital's services is necessary, since it can assist managers in identifying the strengths and limitations of each service, to enable the future implementation of strategies that favor the prospective development of safety culture<sup>(8)</sup>.

The safety culture aspects of an organization that can be considered as positive or negative are directed in an individualized way and may be different between a same organization's services. The evaluated aspects, which can be evidenced as positive or negative, are teamwork within and outside the unit itself, learning from the occurrence of errors, expectations and actions promoted by managers, *feedback* derived from the notification

of incidents, number of staff members necessary to promote daily activities, punishment for errors, communication in the transitions of care and frequency of notifications performed<sup>(5-8)</sup>.

In this sense, it was decided to evaluate safety culture from the nurses' point of view due to these professionals being those with strongest presence in the organization, as evidenced in the literature<sup>(8,9)</sup>. Associated with this, it is emphasized that nursing is considered the professional category that contributes most to this type of study and can thus assist managers in the hospital's organization and in the care provided to patients<sup>(10)</sup>.

Thus, considering the theme of safety culture as a priority field of research, especially due to the need of knowing an organization's safety culture before implementing safety actions, its evaluation is recommended as a first step in the advancement and establishment of a culture that is both fair and transparent. Given the above, the following question is asked: what is the safety culture of nurses in a teaching hospital? Are there differences in the assessment of nurse safety culture between the teaching hospital's services?

## OBJECTIVE

To evaluate nurse safety culture in a teaching hospital, as well as to verify differences in the safety culture dimensions between services.

## METHODS

### Ethical aspects

The study evaluated and approved by the Ethics and Research Committee of the University Hospital of Rio de Janeiro. All ethical and legal norms regarding research with human beings were respected according to the current Resolution. The participation of the professionals was preceded by the signing of the Informed Consent Form, and by the clarification of the maintenance of the information's confidentiality.

### Design, study location and period

Cross - sectional study with a quantitative approach. The methodology used was that of the *Agency for Healthcare Research and Quality (AHRQ)* to evaluate patient safety culture using the Brazilian version of the HSOPSC instrument.<sup>(6,7)</sup>

The study was conducted in a teaching hospital in the city of Rio de Janeiro. The services that participated in the study were the medical clinic (MC), surgical clinic (SC), intensive therapies (IT) and mother and child services (MCS).

### Population, inclusion and exclusion criteria

The population was composed of 200 nurses, of whom 49 are from MC, 41 from SC, 57 from IT and 53 from MCS. The sample was intentional, non-probabilistic, the following inclusion criteria having been used: being a nurse, being in the exercise of their duties in the selected services in the period of data collection, and having worked in the institution for more than six months, being thus

familiar with the work activities. Professionals who, during the period of data collection, were on leave or on vacation, were excluded.

### Collection period and study protocol

Data were collected between October and December 2015 by the lead researcher during the nurses' work period, with 15-min applications, on average, of the translated HSOPSC instrument in printed form, culturally adapted and validated. All nurses in the selected services who met the inclusion and exclusion criteria were included in the sample.

The instrument used has favorable psychometric properties in 42 items, distributed in 12 dimensions and 2 result variables, using a *Likert-type* scale with five answer options ranging from 1 (strongly disagree) to 5 (strongly agree)<sup>(6,7)</sup>. The instrument's internal consistency was measured by calculating the *Cronbach alpha* coefficient for the 12 dimensions. The values found were 0.39 for "Non-punitive responses to errors" and 0.91 for "Frequency of events reported". The overall mean of the instrument was 0.67, values similar to those observed in other studies<sup>(11,12)</sup>.

The choice for the instrument was based on the evidence of a systematic review evaluating twelve instruments for evaluation of patient safety culture in health care. In the aforementioned study, the questionnaire's design characteristics, scale type, construct validity (content, factorial structure and internal consistency, concurrent validity), and level of data analysis were observed. The HSOPSC instrument showed the best evaluation and met more specific psychometric criteria than the others reviewed<sup>(13)</sup>.

### Analysis of results and statistics

For the analysis and interpretation of the results of the safety culture dimensions per service, the recoding of the *Likert* scale was applied for each questionnaire, with the positive answers' scores being the analysis indicator. Variables related to the nurses' characterization were expressed in absolute values.

The composition of the percentage of positive answers of the 12 dimensions followed the formula recommended by AHRQ, having been calculated using the number of positive answers to the dimensions' items, divided by the total number of valid answers (positive, neutral and negative). The percentage of positive answers represents an assertive reaction to patient safety culture and allows the evaluation of the strong (scores greater than 75%) and fragile (scores below 50%) areas of safety culture. Data were described and analyzed by size and service<sup>(6)</sup>.

For the two performance indicators contained in the instrument, the safety score assigned was 1 – excellent, 2 – very good, 3 – moderate, 4 – poor and 5 – very poor; and the number of events reported was 1 – no notification, 2 – 1 to 2 notifications, 3 – 3 to 5 notifications, 4 – 6 to 10 notifications, 5 – 11 to 20 notifications and 6 – 21 or more notifications.

To analyze the possible differences between the services for each dimension of safety culture, data normality was assessed using the *Shapiro-Wilk* and / or *Kolmogorov-Smirnov* tests. If normality was accepted, the Anova One-way parametric test was used and, if it not accepted, the *Kruskal-Wallis* non-parametric test was used. If the result for Anova *One-way* analysis and/or for the *Kruskal-Wallis* test was positive, *post hoc Tukey* test and / or *Dunn's* test were performed, respectively.

In all cases, the significance level adopted was  $P < 0.05$ . Statistical calculations were performed using the *Statistical Package for Social Sciences*, version 20.0.

## RESULTS

A total of 195 nurses participated in the study, 48 (24.61%) of MC, 40 (20.51%) of SC, 55 (28.21%) of IT and 52 (26.67%) of MCC. The characteristics of the study's nurses were presented according to the four services of the teaching hospital (Table 1). The majority of females had mean age between 28 and 40 years old. Experience time showed a slight variation between services.

For the analysis of the safety culture dimensions between services, the mean and standard error of the positive answers were considered, resulting in statistically significant differences for five dimensions. The results point to a distinct evaluation of the nurses between the services of the same teaching hospital. Data analysis shows that five dimensions of safety culture were statistically different between the hospital's four services. The dimensions with significant differences were: organizational learning; feedback and communication regarding error; management support for patient safety; general perceptions about patient safety; frequency of event notification.

**Table 1** – Sociodemographic characterization of the nurses by service, Rio de Janeiro, RJ, Brazil (2015)

Characteristics of the Nurses	Medical Clinic n=48	Surgical Clinic n=40	Intensive Care n=55	Maternal and Child Care n=52
<b>Sex</b>				
Female	40	39	47	49
Male	8	1	8	3
<b>Age (mean)</b>	29	32	40	38
<b>Weekly working hours</b>				
Between 20 and 39 h	26	25	44	41
Between 40 and 59 h	22	15	11	11
<b>Is part of the safety network</b>				
Yes	1	1	2	6
No	47	39	53	46
<b>Graduate education</b>				
Yes	12	11	8	10
No	36	29	47	42
<b>Direct patient care</b>				
Yes	48	40	53	49
No	0	0	2	3
<b>Experience in the service</b>				
Up to 7 years	41	37	34	42
More than 8 years	7	3	21	10

**Table 2** – Comparison of the safety culture dimensions between the teaching hospital's services, Rio de Janeiro, RJ, Brazil (2015)

HSOPSC's Dimensions	Intensive Care	Medical Clinic	Surgical Clinic	Maternal and Child Care	P value
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	
Teamwork within the units	72.27 (4.1)	58.33 (5.0)	71.66 (5.3)	70.67 (3.9)	0.125
Expectations and actions to promote patient safety of supervisors	74.54 (4.0)	64.58 (4.8)	64.37 (5.9)	70.67 (4.3)	0.459
Organizational learning	60.00 (4.8)	46.52 (5.3) <sup>a</sup>	49.16 (5.8)	67.94 (5.4)	0.012
Feedback and communication regarding error	44.84 (5.1)	26.38 (4.8) <sup>b</sup>	34.99 (5.4)	48.07 (5.2)	0.014
Open communication	63.63 (4.5)	61.11 (4.6)	55.83 (5.5)	53.20 (4.6)	3.552
Staff adequacy	39.09 (4.1)	28.64 (3.4)	30.41 (4.3)	36.21 (3.8)	0.272
Non-punitive responses to errors	24.24 (3.2)	19.44 (3.6)	20.83 (3.7)	24.99 (3.1)	0.432
Management support for patient safety	19.99 (4.2)	6.24 (2.7) <sup>c,d</sup>	4.99 (2.8) <sup>e,f</sup>	24.99 (4.8)	0.001
Teamwork between units	28.18 (4.2)	19.27 (2.8)	22.50 (3.8)	22.59 (3.5)	0.755
On-call shift or internal transfers	40.00 (3.8)	28.29 (4.4)	34.37 (4.1)	41.82 (4.1)	0.062
General perceptions of patient safety	39.09 (4.1)	24.65 (4.1) <sup>g</sup>	31.25 (4.7)	44.71 (4.4)	0.005
Frequency of event notification	33.93 (6.0)	15.27 (4.5) <sup>h</sup>	21.66 (6.1) <sup>i</sup>	41.66 (5.9)	0.003

Legend: SE (Standard Error). Post hoc Dunn's analysis: significant difference between MCC and MCC (P = 0.019); significant difference between MC and MCC (P = 0.019); significant difference between MC and IT (P = 0.026); significant difference between MC and MCC (P = 0.003); significant difference between SC and MCC (P = 0.002); significant difference between SC and IT (P = 0.017); significant difference between MC and MCC (P = 0.005); significant difference between MC and MCC (P = 0.003); significant difference between SC and MCC (P = 0.046).

Therefore, when identifying these differences between the five dimensions of safety culture, it was possible to perceive which of the hospital's services were different from each other (Table 2).

After showing the statistical differences between the four services for the twelve dimensions, we proceeded to identify the services that showed these differences. There were nine significant differences between the services of the study's teaching hospital. The predominant differences were between the medical clinic services vs. the maternal and child services, and the surgical clinic services vs. the maternal and child services.

The medical clinic services showed significant difference (P<0.05) for five safety culture dimensions, all of them in relation to the maternal and child services, revealing better results in the safety culture's evaluation.

It is observed that the surgical clinic services showed two dimensions of safety culture with significant differences also in relation to the maternal and child services. Moreover, the medical and surgical clinic services expressed significant differences for the same dimension in relation to the intensive care services.

**Table 3** – Comparison of the indicators of patient safety culture between the teaching hospital's services, Rio de Janeiro, RJ, Brazil (2015)

Indicators	Intensive Care	Medical Clinic	Surgical Clinic	Maternal and Child Care	P value
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	
Safety Score	2.56 (0.1) <sup>a,b</sup>	3.12 (0.1)	3.20 (0.1)	2.86 (0.1)	0.001
Number of Notified Events	1.45 (0.1)	1.53 (0.1)	1.27 (0.1)	1.23 (0.7)	1.126

Legend: SE (Standard Error). Dunn's post hoc analysis: <sup>a</sup> significant difference IC vs. MC (P = 0.004); <sup>b</sup> significant difference IC vs. SC (P = 0.002). The values assigned to the variables were 1 – Excellent 2 – Very Good 3 – Average 4 – Poor 5 – Very Poor.

When analyzing the two result indicators, it was noted that the safety score varied significantly between the services of the medical clinic vs. intensive care and of the surgical clinic vs. intensive care (Table 3).

## DISCUSSION

This study involved nurses, mostly female, young, who provide direct care to patients and are not involved in the hospital's safety system. These data demonstrate the same profile of participants presented in other studies with the same purpose of evaluating safety culture; one study involved 519 participants in 73 hospitals in the United States, another obtained 327 respondents in two Brazilian states, and the last study included 75 nursing professionals from 3 hospitals in Florianópolis. It is worth noting that all of them used the HSOPSC instrument<sup>(6-8)</sup>.

As for the predominance of graduate degrees, the results found diverge from those of a study published in the Palestine, where more than half of the nurses had an undergraduate degree, and converge with those of another study with graduate nurses<sup>(13,14)</sup>. Regarding the nurses' experience in the service, the results of working time in the unit are similar to those of other investigations, and there is association of professional experience with the evaluation of safety culture<sup>(8,15)</sup>. Both cross-sectional studies carried out in southern Brazil aimed at evaluating patient safety culture, one in the pediatric emergency room from the perspective of 75 nursing professionals from Florianópolis<sup>(8)</sup> and the other from the perspective of the 33 health professionals in the bone marrow transplant unit of Santa Catarina<sup>(15)</sup>, having revealed that more than half of the nurses had between 5 to 7 years of experience in the unit.

It is evidenced that studies have been carried out in the area of safety culture with different objects of study, prioritizing the evaluation between different hospitals. However, there is a

shortage of research comparing the services of a same hospital, seeing as safety culture differs between services<sup>(16,17)</sup>.

In the evaluation of the safety culture dimensions between the teaching hospital's services, the results revealed five dimensions with significant differences between services, most of which were between the medical clinic and the maternal and child services. The five dimensions were "Organizational Learning" ( $P=0.012$ ); "Feedback and Communication Regarding Error" ( $P=0.014$ ); "Management Support for Patient Safety" ( $P=0.001$ ); "General Perceptions of Patient Safety" ( $P=0.005$ ); and "Frequency of Event Notification" ( $P=0.003$ ). With this result, it was possible to show the different safety culture evaluations of nurses between the same hospital's services.

These findings can be related to the mean age of the nurses of the medical clinic (29) and of the maternal and child services (38), corroborating a study carried out in Santa Catarina, showing that the age of the participants expressed a statistically significant difference between the safety culture dimensions<sup>(15)</sup>. Another study identified that the younger nurses demonstrated a less positive perspective of safety culture when compared to the senior nurses<sup>(18)</sup>.

Contrariwise, a study carried out in Spain identified that the institution's younger professionals, because they have yet to become adapted to the services and to the working environment, perceive the institution in a more positive way when compared to the more experienced professionals<sup>(19)</sup>.

The "Organizational Learning" dimension refers to learning in health organizations, which does not particularly consist in a single intervention, but must be a continuous learning phenomenon, that takes place formally and informally in the practical context of health. In this sense, in the present study, this dimension in the medical clinic service showed a significant difference in relation to the maternal and child services ( $P=0.019$ ). It was evidenced in a study that the emphasis on continuous learning can directly affect patient outcomes, reducing avoidable mortality, for instance<sup>(20)</sup>.

It is fundamental to manage the different learning conditions between the hospital's services, because continuous learning is a dynamic, complex and interconnected process, where all have commitments, tasks and responsibilities in the execution of assigned functions<sup>(21)</sup>.

In the dimension related to "Feedback and Communication Regarding Errors", the medical clinic has a more fragile safety culture evaluation compared to other services, and differs statistically from the maternal and child services ( $P=0.019$ ). This statistical difference found between these two services was also observed in two other studies<sup>(22,23)</sup>. It is believed that medical clinic nurses do not feel free to talk to their superiors about incidents that may affect the patient.

Another dimension that proved to be statistically different was "Management Support for Patient Safety", for the medical clinic in relation to the maternal and child services and to intensive care, and for the surgical clinic in relation to the mother and child services and intensive care. Although the scores were lower than 50% for all related services, expressing a fragile safety culture dimension, when analyzing the statistical difference between the four services, the nurses of the clinical and surgical clinics of this study evaluated that their managers fails to offer an adequate work climate and tend to worry only after the occurrence of incidents or adverse events, demonstrating that patient safety is not a priority of management<sup>(24)</sup>.

Although the four services had a score below the ideal in relation to management support, this study may also show that there was a statistical difference between the nurses of the medical clinic and surgical services. It is believed that medical clinic nurses have more difficulty recognizing concern on the part of the hospital's management regarding the aspects that involve patient safety in relation to those in other services. The professionals emphasize the precariousness of the effective communication and the need to advance in the items that are inherent to the dimensions of safety culture. It is estimated that the safety culture assessments of the organization's leaders are better because these professionals have less contact with direct patient care<sup>(8,25)</sup>.

These results show that nurses find it difficult to acknowledge concern on the part of the organization's leaders and managers regarding patient safety issues<sup>(8)</sup>. This fact reinforces that the traditional culture of punishment and guilt, still very present during the organization's daily life, prevents a fair, participative and open culture between professionals and managers.

Regarding the dimensions: "General Perceptions on Patient Safety" and "Frequency of Event Notification", both obtained significant differences in the safety culture evaluation of nurses from the medical clinic in relation to those in the maternal and child services. In addition, the dimension "Frequency of Event Notification" also obtained statistical difference for the surgical clinic and the maternal and child services. Indeed, the nurses working in the medical and surgical clinics assigned distinct safety culture scores, expressing significant differences in relation to the maternal and child services. It is believed that this finding can be related to the critical score attributed by nurses of the clinical and surgical services to the aspects of patient safety notification and to them rarely notifying events in the institution under study.

In the context of patient safety, where the primary goal is to reduce avoidable harm resulting from health care, the dimension assessed by nurses in this study, "Frequency of Event Notification", has the potential to continuously contribute to learning. It is important to highlight that reports of safety incidents in hospitals allow the identification of the possible causes of failures in work processes and structures. However, in this study with nurses, this dimension showed itself to be less fragile in intensive care and in the maternal and child services, but it is believed that they can make progresses in the search for continuous improvements.

The identification of the two dimensions, "General Perceptions of Patient Safety" and "Frequency of Event Notification", is an important tool that, together with organizational initiatives, allows us to understand the maturity of the organizational culture, if it reacts only when there is a serious incident or in a participatory manner, involving all the professionals of the institution<sup>(26)</sup>. In this sense, it was observed, from the evaluation of the nurses of the clinical services, that these two dimensions need attention and investment on the part of managers, because safety should be seen as an incident-prevention measure.

It may be noted that studies on the evaluation of the safety culture in Brazil have been growing, particularly in the evaluation between organizations<sup>(19)</sup>. It is worth noting that there is evidence of the safety culture's influence on the patients' clinical outcomes, such as rehospitalization and infection rate<sup>(27)</sup>, that is, when safety culture is fragile, less positive results may be observed in health

care, as highlighted in a study involving nine European countries that associated avoidable mortality with continuous learning<sup>20</sup>.

In this perspective, event notification is of extreme importance to materialize the association between safety culture and clinical results. It is known that notification may vary between the professional categories and between the different services of a same hospital. One researcher suggests that the implementation of a nurse-specific notification system can provide an effective mechanism for discussing incidents and providing feedback to these professionals in particular<sup>(7,12)</sup>. However, this perspective may not be as effective for the whole organization, especially because the institutional processes are systemic and not individualized or categorized by professions.

Regarding the patient safety score attributed by the nurses, the services of the medical and surgical clinics showed significant differences in relation to intensive care, demonstrating that the participants of the latter service evaluated the unit more positively. It is understood that safety culture may be better structured and present in intensive care than in both clinics, corroborating other studies<sup>(18,27)</sup>.

### Study limitations

The main limitation of the study is the fact that the sample was made up of nurses from a teaching hospital only, as it suggests that safety culture should be shared with other professional categories. Another limitation relates to the shortage of other studies assessing the differences between the services of a same teaching hospital, which makes comparisons impossible.

### Contributions to the field of health

Finally, it is considered that the teaching hospital's nurse safety culture proved to be critical and problematic in the medical and surgical clinical services compared to two other services of the

same hospital. In this context, there is a need to train nursing leaders and nurses on the dimensions that have been shown to be fragile, to expand knowledge within the organization itself, improving the exchange of feedback between professionals, bringing managers closer to the professionals who provide direct care to patients, and encouraging the nonpunitive event notification process.

### CONCLUSION

This study revealed a significant difference in the perception of safety culture between nurses in four services of a teaching hospital. It was possible to notice that the greatest differences were between the medical clinic in relation to the maternal and child services for five dimensions, and between the surgical clinic in relation to the maternal and child services for two dimensions.

It is emphasized that, in this study, the maternal and child services showed better difference in the evaluation of safety culture for the dimensions of organizational learning; feedback and communication regarding error; management support for patient safety; general perceptions about patient safety; and frequency of event notification. In this sense, the nurses of this service revealed stronger aspects of safety culture than the services of the medical and surgical clinics, which expressed more fragile aspects of safety culture.

It is believed that this work can contribute to practice by leading nursing leaders and the hospital organization to perceive the significant differences between these services evaluated in the study. It is believed that these findings can serve as a basis for new studies, and may also assist other institutions in identifying significant safety culture issues. It is suggested that other studies are carried out in other educational institutions, so internal and external comparisons may be performed, allowing the subject's *benchmarking* and contributing to better results of patient safety culture.

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