




Evaluation of the patient safety climate in hospitalization units: a cross-sectional study

Avaliação do clima de segurança do paciente em unidades de internação hospitalar: um estudo transversal

Evaluación del clima de seguridad del paciente en unidades de estancia hospitalaria: un estudio transversal

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ABSTRACT

Objective: To evaluate the perception of nurses from different hospitalization units of a teaching hospital in Goiás about the climate of patient safety. **Method:** An analytical cross-sectional study carried out using the Safety Attitudes Questionnaire - Short Form 2006, translated and validated for use in Brazil. All the ethical precepts in research were respected. **Results:** Fifty (50) nurses participated in the study. The general perception of the climate of patient safety was unfavorable. The worst perception was related to Management Perception, and the best was associated with Job Satisfaction. All hospitalization units also presented an unfavorable general safety climate, but the analysis by domains indicated differences in which the maternal-infant and pediatric units had the highest number of means considered positive (≥ 75), mainly in the domains of Teamwork Climate and Job Satisfaction. There was a moderate correlation between the domain of Teamwork Climate with the domains of Safety Climate, Management Perception, Job Satisfaction and Working Conditions. There was also a moderate correlation between the domains of Safety Climate and Working Conditions. **Conclusion:** The results indicate weaknesses that allow directing the management for improvement actions for the sake of patient safety.

DESCRIPTORS

Patient Safety; Nursing, Team; Job Satisfaction; Organizational Culture; Safety Management.

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INTRODUCTION

Patient safety is understood as reducing the risk of unnecessary healthcare-related harm to individuals to an acceptable minimum⁽¹⁾, and has become a priority health issue in recent years. Studies highlight the importance of mitigating patient safety incidents with the argument that not only the patient will suffer from these phenomena, but also the institutions and professionals involved, since such incidents can have consequences as an increase in patient hospital stay, higher costs, loss of credibility of the institution and in professional-patient interaction, as well as ethical and moral damages⁽²⁻³⁾.

Due to the complexity of hospital services, this environment makes the individual more susceptible to harm, and it is necessary to identify weaknesses of the services in order to solve the problems encountered by reducing the rates of avoidable patient safety incidents⁽⁴⁾.

The Ministry of Health and the National Health Surveillance Agency in Brazil established mandatory measures for patient safety in 2013 through Resolution No. 36/2013, among which the importance of implementing safety culture⁽⁵⁾, which in health has a strong impact on reducing errors as it seeks continuous improvement and generates better quality care⁽⁶⁾.

For constant improvements, it is necessary to obtain data which reveal professionals' perceptions regarding safety⁽²⁾, and this can be done through research which systematically verifies the safety climate in the institution⁽⁷⁾.

The safety climate provides a temporal measure of the team's perceptions about the observable aspects of safety culture⁽⁸⁾. Studying the patient safety climate of a health establishment allows the understanding of the factors which interfere in care process regarding patient safety, since nursing professionals effectively participate in care and management actions, which is essential for developing a favorable safety culture⁽⁹⁾.

With the aim to contribute to the scientific community by making a diagnosis of the present situation and understanding points which can be transformed to promote a safer care environment, this study aims to evaluate the patient safety climate in different hospitalization units of a teaching hospital in Goiás state, Brazil through the perception of nurses.

METHOD

STUDY DESIGN

This is a cross-sectional analytical study.

SCENARIO

The study was carried out in seven hospitalization units of a high complexity teaching hospital in Goiás, which has approximately 316 beds for the care of patients in the Unified Health System including several specializations.

POPULATION

The study population consisted of nurses who were performing care or management activities in the medical,

surgical, emergency room, maternal-infant, orthopedic, pediatric and tropical disease units of the institution under investigation. Professionals who were on leave during the data collection period were excluded.

DATA COLLECTION

The data collection took place from April to May 2017. The professionals were approached in their work place during working hours, in which they received instructions on the research and how to fill out the instrument. The collection of the completed instruments was performed according to a predetermined schedule and dates with the nurses.

To obtain data, the self-administered Safety Attitudes Questionnaire (SAQ) – Short Form 2006, translated and validated for use in Brazil and named the Safety Attitudes Questionnaire (*Questionário de Atitudes de Segurança*)⁽¹⁰⁾ was used. The instrument is structured in two parts, with the first composed of 41 questions which are allocated to six specific areas for climate assessment, namely: 1. Teamwork Climate – understands the quality of the relationship and collaboration among the members of a team (items 1 to 6); 2. Safety Climate – professionals' perception regarding organizational commitment to patient safety (items 7 to 13); 3. Job satisfaction – perception of the workplace (items 15 to 19); 4. Stress perception – recognition of the influence of stress factors in work performance (items 20 to 23); 5. Management Perception – approval of management actions regarding safety issues (items 24 to 29); and 6. Working Conditions – perception of the work environment quality (items 30 to 32). Questions 14, 33, 34, 35 and 36 do not specifically belong to any validation domain for Brazil, and items 2, 11 and 36 are reversed. The second part of the instrument has questions directed to participant characterization.

A Likert measurement scale with five points was used for the domain responses: I totally disagree – 0 points, partially disagree – 25 points, neutral – 50 points, partially agree – 75 points, totally agree – 100 points, and “does not apply”, which is not counted in the score. Scores ≥ 75 are considered positive, with 0 being the worst climate perception and 100 being the best⁽¹⁰⁾.

DATA ANALYSIS AND PROCESSING

Data were typed with double conference and analyzed in the Statistical Package for Social Sciences (SPSS) program, version 24.0 for Windows. Quantitative variables were presented as mean, standard deviation, minimum and maximum, and qualitative variables as absolute and relative frequency. Cronbach's alpha was calculated to evaluate the reliability of the instrument, with values above 0.7 being acceptable. Pearson's correlation (r) was used to verify the relationship between SAQ domains, as well as domains and time of professional performance. Analysis of Variance (ANOVA) was used to verify the differences between the means of the scores between the hospitalization units, and the Student's t-test for independent samples

to verify the differences for gender and position variables. Also, $p < 0.05$ values were considered statistically significant in all analyzes.

ETHICAL ASPECTS

The project was approved by the Research Ethics Committee of the Hospital das Clínicas of the Universidade Federal de Goiás in 2017, under opinion no. 1.887.147 and developed according to the recommendations of Resolution 466/2012⁽¹¹⁾ of the National Health Council, which regulates research involving human beings. All participants signed the Informed Consent Form and their anonymity was guaranteed.

RESULTS

The study was carried out with 50 nurses and obtained a response rate of 80.6%, of which 14 were from the medical clinic, 14 from the surgical clinic, 12 from the emergency room, 9 from the maternal-infant clinic, 7 from the orthopedic clinic, 7 from the pediatric clinic and 6 from the tropical disease clinic. The majority of the nurses were in care positions (92.0%), were women (94.0%) with more than 5 years of service (66.0%) in the specialty.

The analysis of the general score for the perception of safety climate showed a value lower than 75 (68.3), therefore indicating an average negative perception of the climate, as can be seen in Table 1.

Table 1 – Analysis of the perception of nurses about the patient safety climate in a teaching hospital in Goiás by general score and by domain – Goiânia, GO, Brazil, 2017.

Patient Safety Climate/Score	Mean	95% CI	Median	Value	SD	Cronbach's Alpha
				Min.–Max.		
General	68.3	65.0-71.6	67.7	41.0-93.0	11.7	0.889
Domains						
Teamwork Climate	72.7	68.3-77.0	75.0	33-100	15.4	0.601
Safety Climate	67.9	63.1-72.6	67.9	36-100	16.6	0.702
Job Satisfaction	82.2	78.1-86.3	82.5	30-100	14.5	0.709
Stress Perception	79.7	72.6-86.9	93.7	0-100	25.1	0.866
Perception of Unit/Hospital Management	60.3	55.2-65.3	59.1	23.0-96.0	17.8	0.817
Work Conditions	60.7	53.1-68.2	58.3	0-100	26.6	0.748

SD: Standard deviation; 95%CI: 95% confidence interval.

Individual domain analysis indicated negative perception in four of them, and only two domains indicated positive perceptions. The worst perception was related to the Unit/Hospital Management with the lowest score (Mean = 60.3), and the best perceptions were in relation to Job Satisfaction and Stress Perception.

When analyzing the nurses' responses to the Teamwork Climate, it was verified that the team had difficulty in communicating problems related to patient care, solving disagreements in an appropriate way, receiving support from other professionals for patient care and good teamwork between physicians and nurses.

Regarding the Safety Climate, it is observed that there was disagreement about the adequate treatment of errors and the appropriate feedback about the nurse's performance, even with the majority of nurses claiming to know the adequate methods related to patient safety. There is also an apparent facilitating culture to learn from the mistakes of other professionals, however most of the answers point out that it is difficult to deal with errors in the units.

Job satisfaction was generally high, even though there were divided opinions on the moral in the work areas.

Regarding Stress Perception, most study participants recognize the relationship of work overload and stress with being more likely to make mistakes, although

some do not agree that fatigue can impair performance during emergencies.

Regarding Management Perception, it was possible to verify that responses with positive meanings were more frequent in relation to the local management of the hospitalization units, and less frequent in relation to the general administration of the hospital.

However, there were difficulties regarding support of the professional's daily efforts by the hospital administration, the commitment by the unit and hospital administration regarding patient safety, the constructive treatment of problematic professionals by the administration of the institution, the information reception on events which may affect the work by the hospital administration and the number and qualification of professionals appropriate to the number of patients in the unit.

Regarding Working Conditions, it is noteworthy that 30% of nurses disagreed that the hospital perform good work in training new team members, as well as providing the necessary information for important patient decisions and adequate supervision of the trainees.

It was still possible to identify difficulties in the adherence of the administration to the safety suggestions proposed by the nurses and difficulties in collaborating with the pharmacists of the area.

When analyzing the mean score obtained in each domain distributed per hospitalization unit, a statistical difference was observed in the mean scores of domains 4 (Stress Perception) and 6 (Working Conditions) between the units. In domain 4 (Stress Perception), the lowest mean

was found in the pediatric clinic, whereas the lowest score in domain 6 (Working Conditions) was observed in the tropical disease clinic. It is noteworthy that the tropical disease clinic presented the lowest mean in almost all evaluated domains, except for domain 4 (Stress Perception) (Table 2).

Table 2 – Descriptive analysis of the patient's safety climate scores by domain, distributed per hospitalization unit of a teaching hospital in Goiás – Goiânia, GO, Brazil, 2017.

Variables	General		D1		D2		D3		D4		D5		D6	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Units														
Medical clinic	68.8	12.5	70.8	19.3	70.5	19.9	77.3	21.3	89.8	17.7	60.3	12.8	65.9	24.6
Surgical clinic	65.6	7.8	66.1	6.1	63.8	15.6	82.9	12.5	88.4	16.7	54.2	16.0	57.1	28.2
Orthopedic clinic	70.3	6.6	75.0	5.9	74.1	8.4	86.3	7.5	68.8	13.5	61.9	25.7	58.3	11.8
Tropical clinic	54.3	8.5	69.2	14.0	49.3	11.4	72.0	11.5	83.8	18.0	47.3	8.7	16.7	16.7
Maternal-infant clinic	74.9	12.3	82.4	10.2	77.4	16.4	81.7	12.5	70.1	24.6	71.2	13.3	68.5	26.3
Pediatric clinic	71.8	15.7	78.3	22.5	70.0	13.7	91.0	12.4	51.3	48.1	67.3	25.9	80.0	18.3
Emergency room	68.1	9.2	68.1	17.1	64.7	13.4	87.2	10.0	88.9	16.8	56.6	20.5	63.9	19.1
p-value**	0.076		0.341		0.079		0.327		0.040		0.230		0.002	

D1: Teamwork Climate; D2: Safety Climate; D3: Job Satisfaction; D4: Stress Perception; D5: Perception of the Unit/Hospital Management; D6: Work conditions. M: Mean; SD: Standard deviation.

It is observed above that no hospitalization unit reached an overall mean ≥ 75 , meaning that nurses do not have a positive perception about the patient's safety climate in the units where they work.

However, attention may be drawn to the fact that the maternal-infant and pediatric clinics present the highest number of means ≥ 75 distributed in the domains, meaning the best positive perceptions of safety climate,

mainly related to the Teamwork Climate (D1) and Job Satisfaction (D3).

There was no association between climate and the variables of position and gender. The correlation analysis between time of performance and climate showed absence of statistical significance between these two variables for all domains ($p > 0.05$).

The correlation between the safety climate domains and the overall score is shown in Table 3.

Table 3 – Correlation between the different SAQ domains and general score in a teaching hospital in Goiás – Goiânia, GO, Brazil, 2017.

	Teamwork Climate	Safety Climate	Job Satisfaction	Stress Perception	Perception of Management	Work Conditions	General
Teamwork Climate (r)	1	.697**	.486**	-.248	.489**	.471**	.785**
p-value		< 0.001	< 0.001	0.082	< 0.001	.001	< 0.001
Safety Climate (r)	.697**	1	.448**	-.260	.280*	.634**	.710**
p-value	< 0.001		0.001	0.068	0.049	< 0.001	< 0.001
Job Satisfaction (r)	.486**	.448**	1	-.112	.339*	.400**	.602**
p-value	< 0.001	0.001		0.440	0.016	0.004	< 0.001
Stress Perception (r)	-.248	-.260	-.112	1	-.103	-.112	-.004
p-value	.082	0.068	0.440		0.476	0.437	0.980
Perception of Management (r)	.489**	.280*	.339*	-.103	1	.548**	.783**
p-value	< 0.001	0.049	0.016	.476		< 0.001	< 0.001
Work Conditions (r)	.471**	.634**	.400**	-.112	.548**	1	.774**
p-value	0.001	.000	0.004	0.437	< 0.001		< 0.001
General (r)	.785**	.710**	.602**	-.004	.783**	.774**	1
p-value	< 0.001	.000	< 0.001	0.980	< 0.001	< 0.001	

**Significant Correlations.

There was a moderate correlation between the domains of Teamwork Climate and Safety Climate ($r = 0.697$), Teamwork Climate and Perception of Management ($r = 0.489$), Teamwork Climate and Job Satisfaction ($r = 0.486$) and Teamwork Climate and Working Conditions ($r = 0.471$); this means that as the teamwork climate increases, the safety climate, perception of management, job satisfaction and working conditions also increase.

There was also a moderate correlation between the Safety Climate and Working Conditions domains ($r = 0.634$), indicating that as the safety climate increases, the working conditions climate increases.

DISCUSSION

As in the present study, the patient's safety climate has been identified as unfavorable in several other studies^(2,12-13), and this negative perception of health professionals indicates fragilities in the institutional safety culture, compromising the offered care quality⁽¹⁴⁾. Knowing the components which influence safety culture is important for strategies to be implemented in order to improve the safety climate in the units and in the hospital⁽¹⁴⁾.

The difference between the safety climate in the various clinics of the same hospital is due to different causes. It can be based on the different types of processes developed in each unit, which occasionally experiences interference from service dynamics, the inpatient profile, the staffing dimension and the leadership of each unit⁽¹⁵⁾.

Evidence of positive perceptions for Teamwork and Job Satisfaction in the maternal-infant and pediatric clinics may be related to the characteristics of the units and the population attended (pregnant, parturient, mothers, child and family) and the profile of the selected professional to deal with this clientele, who, despite the difficulties that may exist, in addition to the technical knowledge, uses team attributes, union and integration, and sensitivity and emotional involvement, thereby envisaging humanized care. A well-integrated team increases the possibilities to develop and improve strategies to promote the care offered to children and their families. The nursing care process in pediatrics is based on speed of care, but also on care, attention and humanization⁽¹⁶⁻¹⁷⁾.

Teamwork can be defined as the association of a harmonious relationship, interaction and cooperation between individuals in the same space⁽⁴⁾. When developed through effective communication, the collaboration of professionals can be reflected in positive care outcomes, job satisfaction and better performance in activities⁽¹⁸⁾.

It is emphasized that job satisfaction is a determining factor for the good performance of the professional, contributing to forming a safe environment, since a professional who is satisfied with their job is more committed to developing quality care⁽¹⁹⁾.

The Working Conditions and Safety Climate domains were negatively evaluated by the nurses from six of the seven units investigated.

Working conditions, such as supervision, equipment, knowledge, skill and communication are points of influence

on patient safety, and are often compromised by organizational processes and managerial decisions⁽¹⁴⁾. Hospitals where working conditions are characterized by a lower workload, harmonious relationships and by promoting the autonomy of professionals in decisions have better patient satisfaction rates, lower burnout cases, and better perceptions of safety climate⁽²⁰⁾.

When the perception of the safety climate is positive, it facilitates implementing improvements in the context of patient safety, and teamwork is consequently strengthened⁽²¹⁾. Studies indicate that safe behaviors, improved communication and reduced patient safety incidents are associated with positive perceptions about the safety climate^(2,22). Thus, institutions should adopt safety as a core value.

The fact that the tropical disease clinic received the lowest overall score, especially in the Working Conditions domain, may be related to the unit profile which is intended for the care of patients using precautions such as contact, droplets or aerosols, in addition to having high care demands and long stay of the patients in the unit. Some factors which may influence a negative perception of the safety climate are: inadequate number of professionals, long working hours and conflicting working relationships, which can contribute to professional burnout, and consequently to low care quality and a high incidence of errors⁽²³⁾.

It is also worth noting that the lack of a semi-intensive care unit or palliative care unit in the institution causes patients to be directed to this clinic. The high demand for intensive care unit beds has resulted in patients with a high dependence being transferred to the hospitalization units⁽²⁴⁾.

The worst Stress Perception occurred in the pediatric clinic. The fact that this domain presented a negative score is of great concern, since it indicates little recognition of the influence of stressors which can reduce performance in work. Identifying situations which do not promote safe care enables elaborating strategies to reduce these factors, increasing the safety climate of that area.

Authors have demonstrated the relevance of the negative relationship between fatigue, workload and patient safety factors for impairing nursing performance⁽²⁵⁻²⁶⁾.

It is noteworthy that the Perception of Management domain had a negative score in all clinics. This fact may be related to the study population being mainly composed of nurses with care positions, since this perception can be better evaluated by professionals with management positions⁽²⁾. However, this data can also be a reflection of a still vertical management, in which the classic and old model prevails characterized by the role divisions of managers and workers⁽²⁷⁾, causing a distancing between the care team and the management of the institution. In this context, it is believed that the links between management and care must be strengthened. The more horizontal the relationship, the greater the contribution will be of one professional with the other, and in the care safety.

There was a moderate correlation between the Teamwork Climate domain and the domains of Safety Climate, Perception of Management, Job Satisfaction and Working

Conditions. It should be emphasized that the nurse's role should provide conditions for the nursing team to carry out their activities with autonomy. Thus, the relationship with the team should focus on the client, and consequently the establishment of a favorable working climate⁽²⁸⁾.

"Organizations that are recognized as having a positive safety culture tend to promote open, transparent and trustworthy communication between people, involving considering the need to implement preventive actions at the institutional level⁽¹⁴⁾, thus tending to favor team communication regarding the difficulties faced in care and to bring hospital management closer to unit management.

The evaluation of hospitalization units within the same high complexity institution enabled verifying the difference between the contexts. The units have different structures and processes, and therefore different safety climate results. Thus, an improvement plan of the patient safety climate must be carried out which meets the specificities of each unit⁽¹⁵⁾.

It is important to highlight the results found in the situational diagnosis of the evaluated units. The strengths should be improved and the fragile points need attention so that improvements are implemented in order to achieve a positive safety climate and a quality service.

As a limitation of this study we can highlight the sample size and the study being conducted in a single hospital and with a professional category, which does not allow generalizations or other inferential analyzes. However, it is important to identify the perception of nurses, professionals who are team leaders and who work at the front line of care full time, assuming a position of extreme relevance in the

performance and effectiveness of patient safety measures in the healthcare institutions.

CONCLUSION

The results of this study evidenced an unfavorable patient safety climate with differences between the hospitalization units of the institution, especially the tropical disease clinic, which presented the worst score. Working conditions and the safety climate were the domains most poorly evaluated by nurses, however there was high job satisfaction.

The separation between the care team and management is evident, especially distancing the administration of the institution, characterizing the vertical management model. It is concluded that a revision of the management model, both of the hospitalization units and of the hospital in general, is necessary to improve the patient safety climate and consequently the safety culture.

It was also observed that there is a need to take measures to ensure that: nurses feel more confident in talking to the team about problems identified during patient care; they receive frequent feedback from management on their professional performance; they are more open to discuss the occurrence of errors in hospitalization units; and that nurses and management increase the collective awareness that fatigue can undermine work performance.

Further studies on the subject are required for accurate identification of stressors, reports and records of patient safety incidents, and management actions for elaborating strategies which raise the perception of patient safety climate.

RESUMO

Objetivo: Avaliar a percepção de enfermeiros de diferentes unidades de internação de um hospital de ensino de Goiás sobre o clima de segurança do paciente. **Método:** Estudo transversal analítico, realizado por meio do *Safety Attitudes Questionnaire – Short Form 2006*, traduzido e validado para uso no Brasil. Todos os preceitos éticos em pesquisa foram atendidos. **Resultados:** Participaram do estudo 50 enfermeiros. A percepção geral do clima de segurança do paciente foi desfavorável. A pior percepção relacionou-se à Percepção de Gerência, e a melhor associou-se à Satisfação no Trabalho. Todas as unidades de internação também apresentaram clima de segurança geral desfavorável, porém, a análise por domínios apontou diferenças, a materno-infantil e a pediátrica tiveram o maior número de médias consideradas positivas (≥ 75), principalmente nos domínios Clima de Trabalho em Equipe e Satisfação no Trabalho. Verificou-se correlação moderada entre o domínio Clima de Trabalho em Equipe com os domínios Clima de Segurança, Percepção da Gerência, Satisfação no Trabalho e Condições de Trabalho. Também houve correlação moderada entre os domínios Clima de Segurança e Condições de Trabalho. **Conclusão:** Os resultados apontam fragilidades que permitem direcionar a gestão para ações de melhoria em prol da segurança do paciente.

DESCRITORES

Segurança do Paciente; Equipe de Enfermagem; Satisfação no Emprego; Cultura Organizacional; Gestão de Segurança.

RESUMEN

Objetivo: Evaluar la percepción de enfermeros de distintas unidades de estancia hospitalaria de un hospital de enseñanza de Goiás acerca del clima de seguridad del paciente. **Método:** Estudio transversal analítico, llevado a cabo por medio del *Safety Attitudes Questionnaire – Short Form 2006*, traducido y validado para empleo en Brasil. Todos los preceptos éticos en investigación fueron atendidos. **Resultados:** Participaron en el estudio 50 enfermeros. La percepción general del clima de seguridad del paciente fue desfavorable. La peor percepción se relacionó con la Percepción de Gestión y la mejor se asoció con la Satisfacción en el Trabajo. Todas las unidades de estancia hospitalaria también presentaron clima de seguridad general desfavorable, sin embargo el análisis por dominios señaló diferencias, la maternoinfantil y la pediátrica tuvieron el mayor número de promedios considerados positivos (≥ 75), especialmente en los dominios Clima Laboral en Equipo y Satisfacción en el Trabajo. Se verificó correlación moderada entre el dominio Clima Laboral en Equipo con los dominios Clima de Seguridad, Percepción de la Gestión, Satisfacción en el Trabajo y Condiciones Laborales. También hubo correlación moderada entre los dominios Clima de Seguridad y Condiciones Laborales. **Conclusión:** Los resultados señalan fragilidades que permiten dirigir la gestión hacia acciones de mejora en pro de la seguridad del paciente.

DESCRIPTORES

Seguridad del Paciente; Grupo de Enfermería; Satisfacción en el Trabajo; Cultura Organizacional; Gestión de la Seguridad.

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