

Patient safety climate among nursing staff: contributing factors

Clima de segurança do paciente entre trabalhadores de enfermagem: fatores contribuintes

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Keywords

Working conditions; Organizational culture; Hospital; Patient safety

Descritores

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Abstract

Objective: To evaluate the safety climate and contributing factors, from the perspective of nursing staff from hospitals in Southern Brazil.

Methods: Cross-sectional studies conducted with 648 professionals, from three hospitals located in the northwestern part of the State of Rio Grande do Sul. The Safety Attitudes Questionnaire was used for data collection. Data analysis was based on descriptive (Kolmogorov-Smirnov, Cronbach's alpha, mean, standard deviation) and analytical (Kruskal-Wallis and Mann Whitney) statistics.

Results: Sixty-eight nursing professionals participated in the study, of whom 66.5% worked in philanthropic hospitals and 43.5% in private hospitals. A positive mean was identified in the areas of job satisfaction, teamwork climate and working conditions, with a statistical difference in working conditions between a philanthropic hospital and a public hospital. A better evaluation among nurses was identified in those who had worked less than five years, and in pediatrics.

Conclusion: Regarding the perception of the safety climate when compared to the professional categories, nurses demonstrated higher scores than nursing assistants/technicians, with a statistical difference in the domains of work climate, stress perception, and unit management. Positive scores for teamwork climate and job satisfaction was evidenced by nursing staff.

Resumo

Objetivo: Mensurar o clima de segurança e os fatores contribuintes na perspectiva de trabalhadores de enfermagem de instituições hospitalares do Sul do Brasil.

Métodos: Estudo transversal, com 648 profissionais de três hospitais do noroeste do Estado do Rio Grande do Sul. Para coleta dos dados, utilizou-se o Questionário de Atitudes de Segurança. A análise dos dados se deu por estatísticas descritivas (Kolmogorov-Smirnov, Alfa de Cronbach, média, desvio padrão), e analíticas (Kruskal-Wallis e Mann Whitney).

Resultados: Participaram do estudo 648 profissionais de enfermagem, destes 66,5% trabalham em hospitais filantrópicos e 43,5% em hospital privado. Identificou-se média positiva nos domínios satisfação de trabalho, clima de trabalho em equipe e condições de trabalho, com diferença estatística nas condições de trabalho entre hospital filantrópico e público. Verificou-se melhor avaliação entre os profissionais enfermeiros, que atuam a tempo inferior a cinco anos e na pediatria.

Conclusão: A respeito da percepção do clima de segurança quando comparado às categorias profissionais, os enfermeiros demonstram escores maiores do que auxiliares/técnicos de enfermagem, com diferença estatística nos domínios clima de trabalho, percepção de stress e gerência da unidade. Na perspectiva dos trabalhadores de enfermagem evidenciou-se escores positivos para clima de trabalho em equipe e satisfação do trabalho.

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Introduction

Patient safety is a subject of discussion, with greater density in scientific publications in recent years, because it is essential for a safe care. Important reflections were raised by the publication, “*To Err is Human: Building a Safer Health System*”, by the Institute of Medicine in the United States. This publication highlighted the occurrence of adverse events (AD) during hospitalization, high mortality rates, the costs this represents for the institution, as well as emphasizing that it is not an individual failure, but a failure of the system as a whole.⁽¹⁾

To minimize and strengthen safe care, nursing has been seeking to strengthen itself as a professional category, by means of networks. In 2005, the *International Network of Nursing and Patient Safety* (RIENSP) was created to identify priorities in patient safety, and discuss possibilities for cooperation and exchange of knowledge between countries.⁽²⁾ Following this initiative, the Brazilian Network of Nursing and Patient Safety (REBRAENSP) was developed in Brazil, in 2008, with the aim of strengthening the care, teaching, research, management, and education, among others. An important milestone, which came about as the consolidation of these networks, was the Ordinance No. 529, April 1st, 2013, establishing the National Patient Safety Program, which aims to provide qualified care in all health facilities at the national level.⁽⁴⁾

With an aim to implement actions for patient safety in health services, the *Collegiate Board of Directors Resolution - RDC*, No. 36, was published in 2013, which defines safety culture as a set of values, attitudes, skills and abilities that determine the commitment to health and safety management, in an attempt to replace guilt and punishment with the opportunity for collective learning and, consequently, improvement in health care.⁽⁵⁾

Assessment of the safety climate is the first initiative for planning actions which are aimed at safe care. For this, the security climate refers to the measurable components of the culture, among them: the manager’s behavior, the safe-

ty systems, and the professionals’ perceptions. Thus, the culture evaluation of the safety climate is assessed, as it is perceived by professionals in the work environment.⁽⁶⁾ This enables the identification of potentials and frailties in the care processes, and allows for future interventions.⁽⁷⁾ This implies knowing the reality of each locale, as it is modified according to the perception, thoughts, feelings, and actions of each group of employees and managers.⁽⁸⁾

Validated instruments for measuring the safety climate, available in Brazil, are the Safety Attitude Questionnaire (SAQ)⁽⁹⁾ and the Hospital Survey on Patient Safety Culture (HSOPSC).⁽¹⁰⁾ Studies aimed at evaluating institutions in general are incipient.^(11,12) To date, part of the scientific evidence on the subject evaluates specific units of an institution, such as: medical and surgical clinics,^(13,14) bone marrow transplant unit,⁽¹⁵⁾ surgery center,⁽¹⁶⁾ surgical units,⁽¹⁷⁾ outpatient unit,⁽¹⁸⁾ emergency department,⁽¹⁹⁾ intensive care unit.^(20,21) This denotes knowledge gaps in the literature, which relate to patient safety from the perspective of the entire institution.

Therefore, the guiding question of this study is: What is the patient safety climate score, from the perspective of nursing staff in hospital institutions? Thus, the objective is to measure the safety climate and the contributing factors from the perspective of nursing staff from hospital institutions in southern Brazil.

Methods

This was a cross-sectional study, conducted in three hospitals located in the northwestern region of the State of Rio Grande do Sul: two philanthropic hospitals and a medium-sized private hospital. Hospital A was a large, philanthropic reference center for medium and high complexity care; Hospital B was a small philanthropic center, which served medical, surgical, pediatric and obstetrical clinics, as well as psychiatry and chemical dependency. Hospital C, the private hospital, provided emergency/medical services, surgical, obstetrics, pediatrics and chemotherapy. In the month prior to collection, Hospi-

tal A had approximately 599 nursing professionals, Hospital B had 40, and Hospital C had 276, totaling 915 professionals.

The measurement of the safety climate in three hospitals of different sizes enables the development of knowledge of the factors involved in the work process that impact patient safety. The diagnosis enables the discussion of these factors, strengthens the scientific evidence, and assists in the assurance of improved safety for patients in the health care system.

The inclusion criteria were: professional nurse, technician or nursing assistant; a weekly workload of 20 hours or more; and, having worked for at least one month in the current area. This workload and time worked enable collection of information on the values, attitudes, perceptions, and competences that determine individual and group commitment, style, and proficiency regarding patient safety issues in the institution in which they operate.⁽²²⁾ Nursing professionals who were on any type of leave during the data collection period were excluded.

After applying the inclusion and exclusion criteria, 37 individuals were excluded due to maternity or sick leave, 53 for working less than 30 days in their current unit, and two for being part of the research team; this resulted in 783 eligible professionals. Among these, 139 (18%) did not agree to participate, and seven (1%) did not answer all the questions. Thus, 648 nursing professionals were included, corresponding to a response rate of 82.8%.

Data collection was performed in the second half of 2014, by four nursing academics and two nurses, who had been previously trained. The training included reading on the subject, a pre-test with the research instrument, and clarification of doubts regarding the questionnaire.

The data collection was initially performed by collecting the list of the nursing staff names and their respective work shifts from the institutions. Next, a schedule of work was developed for the data collectors, to enable their presence on all three shifts of professionals. Also, the nurses of the sectors were contacted, to establish schedules for data collection.

The initial staff approach was performed at the nursing stations on the units. After explaining the objectives of the study, and receiving agreement to participate, the professionals were invited to a reserved room, to provide privacy while answering the questionnaire. Each participant received an envelope containing two copies of the Terms of Free and Informed Consent (TFIC) Form, and the research instrument. The researchers remained in another room to clarify doubts, if necessary, and to collect the completed questionnaire.

The Safety Attitude Questionnaire (SAQ), developed at the University of Texas (USA),⁽²²⁾ validated in 2011 for use in Brazil, was used in this study,⁽⁹⁾ and consists of two parts: Part 1 has 41 items which encompass six domains (safety climate, teamwork climate, stress recognition, perceptions of management, working conditions, and job satisfaction).⁽⁹⁾ The second is composed of demographic data on the professionals (age, sex, experience, and nationality, professional category, time working and the unit of activity, if adult or pediatric).⁽⁹⁾

The answers to each of the questions were in the form of a five-point Likert scale: strongly disagree (A), slightly disagree (B), neutral (C), somewhat agree (D), strongly agree and do not apply (E).⁽⁹⁾ The final score of the instrument ranges from zero to 100, where zero represents the worst perception of the security climate and 100 represents the best perception. Values are considered positive when the total score is greater than or equal to 75.⁽²²⁾ The score is ordered as follows: Disagree Strongly (A), Disagree Slightly (B), Neutral (C), Agree Slightly (D), Agree Strongly (E). Response A equals 0 points; B equals 25 points; C equals 50 points; D equals 75 points, and E equals 100 points.⁽²²⁾

The data were organized in the Epi-Info® 6.04 statistical program, with independent double entry. After correcting for errors and inconsistencies in data entry, the statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS®), version 18.0 for windows. For analysis of the continuous quantitative variables, according to

the distribution of normality of the data (Kolmogorov-Smirnov test), descriptive statistics were used, represented by measures of central tendency (mean or median) and dispersion (standard deviation and range of confidence of 95% (95% CI)). Categorical variables were described by absolute (n) and relative (%) frequencies. The Mann-Whitney or Kruskal Wallis test was used for comparison of means in non-parametric samples. The reliability of the SAQ was analyzed using the Cronbach's Alpha. All tests were considered statistically significant when $p < 0.05$.

The study was approved by the Research Ethics Committee of the Regional University of the Northwest of the State of Rio Grande do Sul, under CAAE 30449514.3.0000.5350. Participants signed the TFIC in duplicate. The research complied with the guidelines of Resolution n. 466/2012.

Results

A total of 648 nursing professionals participated in the study; female (89.2%), auxiliary or nursing technicians (81.5%) prevailed, with the main activity performed with adults (53.5%), and time working in the specialty ranging between five and ten years (29.5%).

Among the professionals, 66.5% worked in philanthropic hospitals, and 43.5% in private hospitals. Table 1 presents the mean values of the SAQ

assessment domains of which the perception of stress presented the lowest mean, while satisfaction with work had the highest mean. These characteristics were similar in philanthropic and private hospitals. A significant statistical difference was identified in the working condition domain among philan-

Table 1. Evaluation of the mean of the Safety Attitudes Questionnaire (SAQ) domains, regarding the type of hospital institution and Cronbach's Alpha (n=648)

SAQ domains	Philanthropic M±SD	Private M±SD	p-value	Overall M±SD	Cronbach's Alpha
Teamwork climate	75.9±15.4	75.3±15.8	0.586	75.7±15.5	0.543
Safety climate	72.5±15.0	72.5±14.8	0.988	72.5±14.9	0.546
Job satisfaction	87.9±13.6	87.8±13.0	0.597	87.9±13.4	0.699
Stress recognition	58.1±27.2	59.3±28.7	0.436	58.6±27.7	0.771
Perceptions of management					
Unit	64.4±19.3	66.4±19.1	0.159	65.1±19.2	0.665
Hospital	63.4±19.4	64.9±19.7	0.117	63.9±19.5	0.687
Working conditions	73.5±22.1	79.0±19.9	0.005*	75.3±21.6	0.524

M-mean; SD- standard deviation; Mann-Whitney; Cronbach's Alfa

thropic and private hospital professionals. The overall Cronbach's alpha was 0.829.

Table 2 shows the domains related to the work characteristics, such as category, years working in the specialty, and the patient type for whom they provide care. Professional nurses obtained better means as compared to nursing auxiliaries and technicians. Professionals working less than five years, and pediatric staff members, achieved higher means.

Table 2. Evaluation of the mean of the Safety Attitudes Questionnaire (SAQ) domains, as well as the work characteristics of nursing professionals (n = 648)

SAQ domains	Professional category			Years working			Patient type			
	Auxiliaries/ technicians	Nurse	p-value	<5 years	≥5 years	p-value	Adult	Children	Both	p-value
	M±SD	M±SD		M±SD	M±SD		M±SD	M±SD	M±SD	
Safety climate	72.0±15.2	74.0±13.3	0.095	74.2±14.5	70.8±15.3	0.009*	70.9±14.5	76.3±13.2	73.8±15.8	0.008*
Teamwork climate	74.8±15.7	79.9±14.1	0.002*	77.6±14.8	73.5±16.0	0.002*	75.8±14.9	80.1±13.6	74.2±16.6	0.023*
Job satisfaction	87.3±14.0	90.4±9.9	0.084	89.4±12.1	86.1±14.6	0.001*	87.9±13.7	88.9±11.0	87.6±13.7	0.785
Stress recognition	57.5±28.1	63.2±25.6	0.046*	57.8±27.9	59.4±27.5	0.485	57.1±28.6	58.9±27.0	60.5±26.4	0.364
Perceptions of management										
Unit	64.2±19.2	69.0±18.7	0.002*	66.0±18.3	64.1±20.2	0.257	63.2±18.6	72.4±18.0	65.8±19.9	0.001*
Hospital	63.2±20.2	66.6±16.3	0.071	65.2±18.9	62.4±20.1	0.056	61.5±19.2	67.6±21.1	66.4±19.1	0.003*
Working conditions	74.6±22.1	78.6±18.9	0.130	76.9±19.5	73.6±23.6	0.276	75.1±21.3	79.2±18.0	74.7±22.9	0.311

M-mean; SD- standard deviation; *category and years working: Mann-Whitney; patient type: Kruskalwalis

Discussion

The internal consistency of the study was evaluated using the Cronbach's alpha, and the overall result was considered very positive. This was similar to other studies conducted in Brazil, which suggests that the instrument is valid for measuring the proposed construct.^(9,16) The overall patient safety climate scores in the institutions surveyed indicate weaknesses, because of the large means in the negative domains. When comparing the philanthropic and private institutions, working conditions was the only domain that presented a statistical difference, with a mean of 79.05 in the private institution, while the philanthropic institutions did not obtain a positive score (73.51). Among the aspects that may reflect this result are the personnel development and training of professionals.⁽¹⁷⁾

Working conditions can be negatively influenced by factors such as long working hours, lack of professionals, and relationships of conflict among the nursing staff, which contribute to professional burnout and risk of errors during care.⁽²³⁾ In this sense, the private hospital may have better financial conditions, offering a quality environment (physical structure and materials), better staffing, and greater professional qualifications. It is possible that these factors have contributed to the difference between institutions.

The satisfaction in the work domain was the one with the best result in the investigated institutions, with scores considered very positive. A study conducted in Ceará/Brazil, in three hospitals, showed a score higher than 80. Authors of this study infer that Brazilian professionals are more satisfied at work compared to professionals from other countries.⁽²⁴⁾

In this context, professional satisfaction is directly related to the lower occurrence of adverse events, and may influence the safety culture.⁽¹⁶⁾ In addition, the factors that contribute to the positive result in this score are: an institution having a favorable working environment, staff satisfied with the work they perform, and, thus, contribution to safety attitudes.⁽²⁴⁾ When scores are above 80, the results demonstrate a strong consensus among professionals about the safety climate.⁽²²⁾

The teamwork climate in the institutions investigated was positive. The result may be related to channels of good communication, and well coordinated teams that act cooperatively, providing continuity of care.⁽¹⁶⁾ Another study conducted in Ceará, found a similar result.⁽¹²⁾

Regarding the perception of the safety climate when compared to the professional categories, nurses demonstrate higher scores than nursing auxiliaries/technicians, with statistical difference in the domains of work climate, stress perception and unit management. The nurse as a team leader has increased perception when compared to auxiliary and mid-level professionals, which can facilitate communication,⁽²⁵⁾ collective development in relation to the objectives and results to be achieved by the team.⁽²⁶⁾

In order to improve the scores of auxiliary and technical professionals, it is important to raise awareness about patient safety, as well as to clarify the assignments related to each category of professional, and the adequate handling of conflicts.⁽¹⁵⁾ It is also necessary to identify potentials for strengthening workers and improving their qualification in the context of a patient safety culture.⁽¹⁹⁾

The safety climate showed higher means among professionals who had worked less than five years, with statistical difference in the safety climate, teamwork climate, job satisfaction domains. This finding differs from those found in the literature, in which professionals with 21 years or more in the institution presented higher means.^(14,27) This study showed a better perception among professionals who had worked less than six months in the institution, and this result relates to adaptation to the work environment, since staff positively perceived the organization.⁽²⁴⁾

Also, the divergence among professionals with different years of work time may be related to the new methods of qualification, selection, and evaluation of professionals when entering the job market. Characteristics such as flexibility, knowledge, experience, and accessibility stimulate professionals to work in teams and, in this way, positively reflect staff satisfaction.⁽²⁸⁾

Pediatric staff members achieved higher means when compared to those who worked with adults.

There was a significant difference in the areas of safety climate, teamwork climate, and perceptions of management. This study shows that professional autonomy can be evidenced from the coordination of health care from the perspective of communication between professionals and services, with a view to a more effective organizational climate.⁽²⁹⁾ Furthermore, the literature indicates weaknesses in relation to pediatric patient safety, similar to those found in the general scores of this study, which need to be improved, including notification of errors, qualification, and moments of reflection.⁽²⁵⁾ Other characteristics that can positively influence the perception of staff members are accessibility, visibility, and flexibility of the nurses within their teams:⁽²⁸⁾ factors that contribute to the improvement of the safety climate.

Bias of temporality (reverse causality) can be a limitation of this study, due to the cross-sectional design. New studies are suggested that measure the safety climate from the perspective of the multiprofessional team members, as well as correlating this to the number of patients for whom team members provide care.

It is important to highlight that results have the potential to support actions in health institutions in a manner that contributes to planning and organization of services, from the management to the effectiveness of care. Also, it can serve to support nurses and managers in their management and care processes, focusing on actions aimed at patient safety.

Conclusion

From the perspective of nursing staff members, positive scores for teamwork climate and job satisfaction were identified. The negative scores were for safety climate, perception of stress, perceptions of management. The results demonstrate the importance of having managers identify the aspects requiring qualifications, in order to aggregate actions with the potential to improve negative scores. The domain, working condition, was the only one that presented a statistically significant

difference between the hospitals evaluated, with a positive score obtained only in the private hospital. Other evidence from the study refers to the fact that nurses who had worked less than five years, and who worked in pediatrics, had a better perception of the safety climate, constituting contributing factors.

Collaboration

Kolankiewicz ACB, Loro MM, Schmidt CR, Santos FP, Bandeira VAC and Magnago TSBS contributed to the study design, analysis and data interpretation, relevant critical review of the intellectual content, and final approval of the version to be published.

References

1. Institute of Medicine. To err is human [Internet]. 1999. [cited 2017 Oct 19]. Available from: [http://www.nationalacademies.org/hmd/~media/Files/Report Files/1999/To-Err-is-Human/To](http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/1999/To-Err-is-Human/To).
2. Caldana G, Guirardello EB, Urbanetto JS, Peterlini MA, Gabriel CS. Rede Brasileira de Enfermagem e Segurança do Paciente: Desafios e Perspectivas. *Texto Contexto Enferm*. 2015; 24(3):906-11.
3. Rede Brasileira de Enfermagem e Segurança do Paciente (REBRAENSP/RS). *Estratégias para a segurança do paciente: manual para profissionais da saúde*. Porto Alegre: EDIPUCRS; 2013. p.1-132.
4. Brasil. Ministério da Saúde. Portaria n. 529 de 01 de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP). *Diário Oficial da União, Brasília (DF)*, 2 de abr 2013.
5. Agência Nacional de Vigilância Sanitária (ANVISA). Resolução da Diretoria Colegiada da ANVISA - RDC nº 36 de 35 de julho de 2013. Institui ações para a segurança do paciente em serviços de saúde e dá outras providências. *Diário Oficial da União, Brasília (DF)*, 26 de julho de 2013.
6. Colla JB, Bracken AC, Kinney LM, Weets WB. Measuring patient safety climate: a review of surveys. *Qual Saf Health Care*. 2005; 14(5): 364-6.
7. Reis CT, Martins M, Laguardia J. [Patient safety as a dimension of the quality of health care - a look at the literature]. *Cien Saúde Colet*. 2013; 18(7):2029-36. Portuguese.
8. Pires JC, Macêdo KB. Cultura organizacional em organizações públicas no Brasil. *Rev Adm Pública*. 2006;40(1):81-105.
9. Carvalho RE, Cassiani SH. Questionário Atitudes de Segurança: adaptação transcultural do Safety Attitudes Questionnaire - Short Form 2006 para o Brasil. *Rev Lat Am Enfermagem*. 2012; 20(3):1-8.
10. Reis CT, Laguardia J, Martins M. Adaptação transcultural da versão brasileira do Hospital Survey on Patient Safety Culture: etapa inicial. *Cad Saúde Pública*. 2012; 28(11):2199-210.
11. Pinheiro MP, Junior Osnir CS. [Evaluation of the patient safety culture within the hospital organization of a university hospital]. *Enferm Global*. 2017; 16(45):309-52. Portuguese.

12. Netto FC, Severino FG. Resultados da avaliação da cultura de segurança em um hospital público de ensino do Ceará. *Rev Bras Promoç Saúde*. 2016; 29(3): 334-41.
13. Barbosa MH, Aleixo TC, Oliveira KF, Nascimento KG, Felix MM, Barichello E. Clima de segurança do paciente em unidades de clínica médica e cirúrgica. *Rev Eletr Enferm*. 2016; 18:e1183.
14. Rigobello MC, Carvalho RE, Cassiani SH, Galon T, Capucho HC, Deus NN. Clima de segurança do paciente: percepção dos profissionais de enfermagem. *Acta Paul Enferm*. 2012; 25(5):728-35.
15. Fermo VC, Radünz V, Rosa LM, Marinho MM. [Professional attitudes toward patient safety culture in a bone marrow transplant unit]. *Rev Gaúcha Enferm*. 2016; 37(1):e55716. Portuguese.
16. Carvalho PA, Göttems LB, Pires MR, Oliveira ML. Safety culture in the operating room of a public hospital in the perception of healthcare professionals. *Rev Lat Am Enfermagem*. 2015; 23(6):1041-8. Portuguese.
17. Marinho MM, Radünz V, Barbosa SF. Avaliação da cultura de segurança pelas equipes de enfermagem de unidades cirúrgicas. *Texto Contexto Enferm*. 2014; 23(3):581-90.
18. Silva MV, Carvalho PM. Cultura de segurança do paciente: atitudes dos profissionais de enfermagem de um serviço de pronto-atendimento. *Rev Interdiscipl*. 2016; 9(1):1-12.
19. Macedo TR, Rocha PK, Tomazoni A, Souza S, Anders JC, Davis K. The culture of patient safety from the perspective of the pediatric emergency nursing team. *Rev Esc Enferm USP*. 2016; 50(5):756-62.
20. Mello JF, Barbosa SF. Cultura de segurança do paciente em unidade de terapia intensiva: perspectiva da equipe de enfermagem. *Rev Eletr Enf*. [Internet]. 2017 [cited 2017 Oct 23];19:a07. Disponível em:<http://dx.doi.org/10.5216/ree.v19.38760>.
21. Santiago TH, Turrini RN. Cultura e clima organizacional para segurança do paciente em Unidades de Terapia Intensiva. *Rev Esc Enferm USP*. 2015; 49(Espec):123-30.
22. Sexton JB, Helmreich RL, Neilands TB, Rowan K, Vella K, Boyden J, et al. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Services Res*. 2006; 6:44.
23. Atefi N, Abdullah KL, Wong LP, Mazlom R. Factors influencing registered nurses perception of their overall job satisfaction: a qualitative study. *Int Nurs Rev*. 2014; 61(3):352-60.
24. Carvalho RE, Arruda LP, Nascimento NK, Sampaio RL, Cavalcante ML, Costa AC. Assessment of the culture of safety in public hospitals in Brazil. *Rev Lat Am Enfermagem*. 2017; 25:e2849.
25. Wegner W, Silva SC, Kantorski KJ, Predebon CM, Sanches MO, et al. Educação para cultura da segurança do paciente: Implicações para a formação profissional. *Esc Anna Nery Rev Enferm*. 2016; 20(3):e20160068.
26. Santos JL, Lima MA, Pestana AL, Colomé IC, Erdmann AL. Estratégias utilizadas pelos enfermeiros para promover o trabalho em equipe em um serviço de emergência. *Rev Gaucha Enferm*. 2016; 37(1):e50178.
27. Luiz RB, Simões AL, Barichello E, Barbosa MH. Fatores associados ao clima de segurança do paciente em um hospital de ensino. *Rev Lat Am Enfermagem*. 2015; 23(5):880-7.
28. Alves DF, Guirardello EB. Nursing work environment, patient safety and quality of care in pediatric hospital. *Rev Gaucha Enferm*. 2016; 37(2):e58817.
29. Sousa SM, Bernardino E, Crozeta K, Peres AM, Lacerda MR. Integrity of care: challenges for the nurse practice. *Rev Bras Enferm* 2017; 70(3): 504-50.