

# Organizational climate and the occurrence of accidents by sharp objects in a public hospital in the State of São Paulo

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**Abstract:** A quantitative, descriptive and cross-sectional study, conducted with the aim to evaluate the organizational climate of a public hospital in the State of São Paulo and its relationship with the occurrence of occupational injuries by sharp objects among nursing professionals. Data were collected using the Portuguese version of the Safety Attitudes Questionnaire (SAQ). In order to correlate the organizational climate to the occurrence of work accidents, the participants were divided into two groups: Group 1 - nursing workers who suffered occupational accidents by sharp objects; Group 2 - nursing professionals who did not undergo occupational accidents with needlestick. Data analysis was performed using descriptive statistics with a correlation test between the group's variables. The study sample consisted of 116 participants; which 21 were in group 1 and 95 in group 2. Participants were mostly female, nursing technicians and professionals with 5 to 10 years of experience in this institution. The perception of the participants about the organizational climate was considered unfavorable; however, most participants reported job satisfaction. Results indicated no relationship between organizational climate and the occurrence of these accidents; however, group 2 presented greater job satisfaction. Thus, this study promotes the opportunity to meet the professionals' perception of the organizational climate and contributes to the improvement of safe care, reduce adverse events and improve the quality of patient care.

**Keywords:** *Nursing, Occupational Health, Patient Safety, Organizational Culture, Occupational Accidents.*

## Clima organizacional e ocorrência de acidentes com materiais perfurocortantes em um hospital público do Estado de São Paulo<sup>1</sup>

**Resumo:** Estudo quantitativo, descritivo e transversal, realizado com o objetivo de avaliar o clima organizacional de um hospital público do Estado de São Paulo e a sua relação com a ocorrência de acidentes de trabalho com perfurocortantes entre os profissionais de enfermagem. Para a coleta dos dados, foi utilizada a versão em português do *Safety Attitudes Questionnaire* (SAQ). No intuito de relacionar o clima organizacional com a ocorrência de acidentes de trabalho, os participantes foram divididos em dois grupos: Grupo 1, com - trabalhadores de enfermagem que sofreram acidentes de trabalho; Grupo 2, com - trabalhadores que não sofreram acidentes no período estudado. A análise dos dados foi realizada por meio de estatística descritiva e de testes de correlação. A amostra foi constituída por 116 participantes, dos quais 21 pertenciam ao Grupo 1, e 95, ao Grupo 2. Houve predominância de trabalhadores do sexo feminino, técnicos de enfermagem e profissionais com - 5 a 10 anos de atuação na instituição. A percepção dos participantes quanto ao clima organizacional foi considerada desfavorável; no entanto, a maioria apresentou satisfação no trabalho. Os resultados não indicaram relação direta entre o clima organizacional e a ocorrência de acidentes, mas foi possível observar que os trabalhadores que não haviam sofrido acidentes apresentaram maior satisfação. Desse modo, considera-se que este estudo permitiu ampliar o conhecimento acerca da percepção dos profissionais de enfermagem sobre o clima organizacional e contribuir para a discussão sobre formas de melhoria da assistência por meio da adoção de ações voltadas à segurança do paciente.

**Palavras-chave:** *Enfermagem, Saúde do Trabalhador, Segurança do Paciente, Cultura Organizacional, Acidentes de Trabalho.*

## 1 Introduction

Currently, the organizational climate and its consequences in the professional environment come from the interest of hospital organizations, believing that a bad climate has a direct influence on the performance of its employees.

For Salazar Estrada et al. (2009), defining organizational climate involves the treatment of a group of components that together, provide an overview of the organization. As a multidimensional concept that understands the internal environment of the organization, there is physical environment (physical space, facilities, equipment, temperature), structural characteristics (size of organization and its formal structure, management style), social environment (relationships and interpersonal conflicts or between departments, communication), personal characteristics (skills, attitudes, motivations, expectations) and organizational behavior (aspects related to productivity, absenteeism, turnover, job satisfaction, stress level).

According to Xavier (2010), the studies on organizational culture are able to detect deficiencies in the structure and anomalies in the work environment. For this reason, it is important for an organization's managers to know the people, the group processes, the organizational climate and the way these processes interact with each other, ensuring that success is a certainty. These studies would also provide support for understanding the relationship between physical, mental and emotional loads and potential work risks and nursing workers' attrition to know the organization better.

Culture is commonly defined as a variable deeper than climate. While the culture of an organization refers to the values and practices that guide the behavior of the workers, giving it an identity of its own (SILVA; ZANELLI, 2004), the climate is the atmosphere of the work environment perceived daily by individuals and closely linked to the behavior of the managers and to the actions rewarded by them (SCHNEIDER; SALVAGGIO; SUBIRATS, 2002).

One of the dimensions of organizational culture and climate refers to security analysis. For Sexton et al. (2006), the climate is the measurable component of safety culture and can be assessed through the perception of professionals, since attitudes and values are more difficult to assess. The security climate is momentary, unstable (LUZ, 2003), and represents the temporal measure of the state of an institution's security culture.

It can be seen that, in recent years, hospital organizations are more concerned with the health of workers, seeking actions and strategies aimed at reducing the occurrence of absenteeism, turnover, lack of motivation, among other factors that are seen as triggers of illness. In this sense, the organization of work, the hierarchical system, the relationships of power and command, the objectives and goals of the organization, the increase of work pace, among other variables, can be the cause of suffering, illness or work accident (SOUZA; MORAIS, 2007).

Valim and Marziale (2011) argue that nursing workers are exposed to several occupational risks caused by chemical, physical, mechanical, biological, ergonomic and psychosocial factors that can lead to occupational diseases and occupational accidents.

The accidents caused by sharp objects represent damages to the workers and the institutions, besides offering great risks of contamination and generate physical and mental wear (MARZIALE; NISHIMURA; FERREIRA, 2004).

Thus, Marziale et al. (2010) argue that preventive strategies, such as behavioral change of health professionals in relation to not actively covering needles and discarding them in their own containers, the use of protective barriers, the implementation of safety devices and policies management can reduce the risk of accidents with sharp objects. In this theme, the organizational, behavioral and epidemiological factors make up the three domains that require urgent research by the nursing.

In this context, the objective of this study was to identify the relationship between the perception of nursing workers about the organizational climate and the occurrence of occupational accidents involving sharp objects in a hospital.

## 2 Methods

This is a quantitative, descriptive and cross-sectional study, developed in a public hospital of medium complexity, located in a municipality in the interior of the State of São Paulo. Currently, the hospital has a total of 104 beds and receives exclusively patients of the Unified Health System (SUS).

For data collection, the version validated and culturally adapted to the reality of the Brazilian hospitals of the Safety Attitudes Questionnaire (SAQ) instrument of Sexton et al. (2006), carried out by Carvalho (2011) and called the Security Attitudes Questionnaire (QAS). The QAS has six domains, Teamwork Climate, Safety Climate, Job Satisfaction, Stress Perception, Management

Perception and Working Conditions, and consists of two parts.

The first part consists of 41 items, with 33 of them inserted in the six domains previously mentioned and five of them not belonging to any specific domain - item 14 refers to the worker's perception when proposing suggestions regarding patient safety, and items 33-36 are related to collaboration between care team members and communication failures. It should be emphasized that in the questionnaire there are negative questions, called reverse items (items 2, 11 and 36), which should be considered with negative or reversed scores. Reversed items are those that are negatively worded and that must be re-coded inversely during the analysis. Therefore, the lower the score, the more positive the attitude. For example, when one of these questions is answered as totally disagree, during the analysis it should be considered as fully agreeing (SEXTON et al., 2006; CARVALHO, 2011; BATISTA, 2015).

The second part of the instrument is composed of questions related to the characteristics of the participants (gender, professional category, time and unit of action).

The final scale ranges from 0 to 100 points, with the lowest value representing the worst perception, and the highest value meaning the best perception. In the end, positive values for organizational climate are equal or greater than 75 points (SEXTON et al., 2006; CARVALHO, 2011).

## 2.1 Population and sample

The institution has 41 nursing assistants from the wards of hospitalization, 4 nurses responsible for the Nursing Coordination, 1 occupational nurse, 2 nurses responsible for the quality sector, 2 nurses responsible for the Hospital Infection Control Committee (CCIH), 1 nurse responsible by risk management and 115 nursing technicians, totaling 166 nursing workers. It should be emphasized that in this institution there is no hiring of nursing assistants.

The following inclusion criteria were used: being a nurse or nursing technician of the hospitalization units of the hospital and working for more than six months in the institution. The nursing professionals who were away from their work activities during the entire data collection period and the employees of the Intensive Care Unit, Surgical and Outpatient Center were excluded.

A total of 116 nursing professionals participated, of which 29 were nurses, and 87 were nursing technicians.

## 2.2 Data collection

All the nursing workers who worked in the hospitalization units of the hospital were invited to participate in the study, receiving guidance on the objectives and procedures to be performed. If they accepted to participate, they signed the Free and Informed Consent Term (TCLE) and responded to QAS (CARVALHO, 2011), which was applied by the researcher in the participants' workplaces.

After the data collection, a survey was carried out with the Specialized Medical and Occupational Safety Service (SESMT) of the institution, identifying the records of occupational accidents caused by sharp objects injuries occurring in the period 2008-2014 and, workers nursing victims of these accidents were identified.

Two groups were formed: **Group 1**, with nursing professionals who suffered work-related accidents involving sharp objects in the period from 2008 to 2014; **Group 2**, with nursing professionals who did not suffer a sharp object injury during the study period. Thus, it was possible to analyze the relationship between the two study variables.

## 2.3 Data analysis

The data collected through QAS (CARVALHO, 2011) were organized into Excel for Windows spreadsheets, validated by double typing and transferred to the Statistical Package for Social Sciences (SPSS), version 17.0.

Regarding the reverse items, immediately upon insertion in the program Excel for Windows, the transition of answers was performed, that is, where it reads totally disagree, it has been read totally agree.

Thus, low scores indicated low perceptions of the organizational climate and weaknesses regarding the content addressed.

For each instrument returned, the scores attributed to each question and to each domain were summed. The result was divided by the number of questions, resulting in an absolute number; when equal or superior to 75 points, the organizational climate was considered positive.

For data analysis, the nursing workers were subdivided into the two groups previously described. This division enabled to compare the perception of the organizational climate of workers who suffered

sharp injuries with the perception of those who did not suffer this type of accident in the period studied.

After the groups were formed, the data analysis was performed through descriptive statistics with association and comparison tests, which should be able to verify the relationship between the organizational climate and the occurrence of sharp injuries in the institution by comparing the variables of Groups 1 and 2. Thus, the Chi-square and Fisher Exact association tests were performed, and the Mann-Whitney and Test t-tests were used to compare the scores between the groups. Most of the variables did not present normal distribution, and the variables that presented normal distribution were items 24 to 29 of the QAS instrument.

In this study, two initial hypotheses were identified: H0 - inferring that there is no difference between the studied groups; and H1 - inferring that the group that suffered an accident at work has a less favorable perception of the organizational climate than the group that did not suffer the accident.

## 2.4 Ethical aspects

This study was approved by the Nursing Directorate and Coordination of the Hospital and approved by the Research Ethics Committee of the University of São Paulo at Ribeirão Preto College of Nursing (CEP-EERP/USP), under protocol number 39007114.2.0000.5393. The norms of Resolution

466/2012 of the National Health Council regarding the ethical standards of research involving human beings were followed (BRASIL, 2013).

## 3 Results and Discussion

According to the professional characteristics, there were 116 participants identified, of whom 87 (75%) were nursing technicians and 29 (25%) were nurses.

The results of this study showed the predominance of women in nursing professionals (106 participants, or 91%), reaffirming the predominance of the female gender in health professions, especially in nursing. It is known that, from the earliest days, care with the patient is an activity primarily carried out by women (CARVALHO et al., 2015).

Regarding the professional performance, it was observed that 102 (88%) collaborators provide assistance to adult patients and 14 (12%) provide assistance to children and adults.

Considering the professional activity time in the institution, 4 of the 116 professionals (3%) worked from 6 to 11 months; 12 (11%) worked from 1 to 2 years; 36 (31%) worked from 3 to 4 years; 53 (46%) worked from 5 to 10 years; 11 (9%) worked from 11 to 20 years; and no participant worked more than 20 years in that institution. Table 1 shows the characteristics of the workers.

**Table 1.** Characteristics of nursing professionals. Interior of São Paulo, 2015 (n=116).

PROFESSIONAL CHARACTERISTICS	TOTAL	GROUP 1	GROUP 2
<b>Position</b>	n (%)	n (%)	n (%)
Nursing technicians	87 (75)	15 (71.4)	72 (75.7)
Nurses	29 (25)	6 (28.5)	23 (24.2)
Total	116 (100)	21 (100)	95 (100)
<b>Gender</b>	n (%)	n (%)	n (%)
Women	106 (91.3)	18 (85.7)	88 (92.6)
Men	10 (8.6)	3 (14.2)	7 (7.3)
Total	116 (100)	21 (100)	95 (100)
<b>Main activity</b>	n (%)	n (%)	n (%)
Adult	102 (87.9)	17 (80.9)	85 (89.4)
Both	14 (12.0)	4 (19.0)	10 (10.5)
Total	116 (100)	21 (100)	95 (100)
<b>Time at the institution</b>	n (%)	n (%)	n (%)
6 to 11 months	4 (3.44)	0	4 (4.2)
1 to 2 years	12 (10.64)	3 (14.2)	9 (9.4)
3 to 4 years	36 (31.03)	2 (9.5)	34 (35.7)
5 to 10 years	53 (45.68)	16 (76.1)	37 (38.9)
11 to 20 years	11 (9.48)	0	11 (11.5)
21 years or more	0	0	0
Total	116 (100)	21 (100)	95 (100)

### 3.1 Accidents at work with sharp material

Regarding the occurrence of accidents, there were 120 accidents with sharp objects identified from 2008 to 2014, occurring in different sectors of the institution and involving all professional categories. Of these accidents, 47 involved nursing workers working in the hospitalization units.

Considering the inclusion and exclusion criteria, a total of 21 collaborators who were victims of a sharps injury in Group 1 were included.

From the division of groups, it was observed that most of the accidents with sharp objects had occurred among nursing technicians (75%), a professional category predominant in the research institution. This predominance may explain the higher incidence of work-related accidents in this group, since they are professionals who spend most of their time caring for patients, performing invasive procedures, such as administering injectable drugs, that is, they are more exposed to the risks inherent in their job.

These results corroborate the data of Paulino, Lopes and Rolim (2008), who affirm that the highest incidence of accidents with sharp objects is related to the technical category of nursing, since it is the most numerous among the nursing professionals and the one that provides direct assistance to the patient, predisposing to the occurrence of accidents.

Besides the nursing technicians, women were also the most exposed to sharps injuries at the institution, since 86% of the injured professionals were female, corroborating the results of Ruiz, Barboza and Soler (2004), who developed a study in a general hospital and verified that the incidence of these accidents in women was 75%.

Spagnuolo, Baldo and Guerrini (2008) also found that most sharp injuries occurred with female workers (73.5%). Thus, referring to the large number of women present in the health workforce, Spindola and Santos (2003) discuss the presence of women in the labor market, inferring that when women reconcile professional practice to their daily activities, they lead to work overload, contributing to the development of stress and/or disorders of the organism and to the occurrence of adverse events.

Regarding the professionals' field of action, Bakke and Araujo (2010) infer that it is probable that some sectors of the hospital present more risks than others, varying according to the activities performed by the workers and with the severity of the patients and the pathologies they treat. In their study, they confirmed a higher incidence of

accidents in the adult medical clinic, agreeing with the results found in our study, in which 17 (81%) of the accidents occurred in the adult medical clinic and only 4 (19%) accidents occurred in the clinic in the care also with children.

Regarding the groups analyzed separately, it was observed that in Group 1 no professional worked in the institution from 6 to 11 months; 3 (14%) worked for 1 to 2 years; 2 (9%) worked for 3 to 4 years; 16 (76%) worked for 5 to 10 years; and no participant worked for more than 11 years at the institution. In Group 2, 4 (4%) professionals worked in the institution from 6 to 11 months; 9 (9%) worked for 1 to 2 years; 34 (36%) worked for 3 to 4 years; 37 (39%) worked for 5 to 10 years; 11 (11%) worked for 11 to 20 years; and no participant worked for more than 21 years at the institution.

These data confirm the description of Moura, Gir and Canini (2006) in a study carried out in a regional hospital in the interior of Minas Gerais, in which they identified the predominance of accidents involving sharp materials among nursing professionals with less than five years of health service work.

### 3.2 Workers' perception of the organizational climate

The results related to the perception of the professionals of the nursing team about the organizational climate of the institution are presented in tables. Thus, Table 2 shows the mean values of the responses issued by the participants, related to each domain of the data collection instrument, QAS (CARVALHO, 2011).

Regarding the results of this study, considering all SAQ domains, a mean of 70.4 was observed in relation to the participants' perception about the organizational climate of the institution, identifying an unfavorable organizational climate, since the mean of the final score of SAQ was less than 75 points. Similar results were found in studies with mean scores of 62.7 and 61.5, respectively (CARVALHO; CASSIANI, 2012; CAUDURO et al., 2015).

The results related to each QAS domain showed that the domains that obtained positive scores were Teamwork Climate (79.2), Job Satisfaction (81.3) and Stress Perception (76.2).

The relationship between Teamwork and Job Satisfaction was evidenced in the results of this study since the mean scores were positive for both domains. Similar results were observed in studies in Brazil, which identified favorable perception for the

**Table 2.** Perception of nursing professionals about the organizational climate in the institution, divided by domains (Teamwork Climate, Safety Climate, Job Satisfaction, Stress Perception, Management Unit and Hospital Management Perception, Working Conditions), and questions that do not apply to any domain. Interior of São Paulo, 2015 (n = 116).

DOMAINS/ITEMS	MEAN
Teamwork Climate	79.2
Safety Climate	73.3
Job Satisfaction	81
Stress Perception	75.5
Perception of the Management Unit	54.1
Perception of Hospital Administration Management	54.7
Work conditions	74
Item 14 - worker's perception when proposing suggestions regarding patient safety	53.5
Item 33 - related to collaboration between care team members and communication failures	77
Item 34 - related to collaboration between care team members and communication failures	74.3
Item 35 - related to collaboration between care team members and communication failures	69.4
Item 36 - related to collaboration between care team members and communication failures	79.1
Total	70.4

same domains (CARVALHO; CASSIANI, 2012; CAUDURO et al., 2015; RIGOBELLO, 2015).

Leape et al. (2009) state that teamwork means working towards a clear goal, with a multidisciplinary team in which the patient should be included as a member and in which there is mutual respect, collaboration, and leadership. For the teamwork climate to be favorable, researchers suggest a combination of interventions to meet local needs, such as work climate measurement, training, and understanding of care plans. They also suggest that team members should be open to learning from adverse events and that activities undertaken by all should be coordinated and facilitated through teamwork. In Brazil, the National Health Surveillance Agency (ANVISA) affirms that the promotion of teamwork is possible through the development of skills and the improvement of team performance, with a proactive, systematic and organizational approach, in order to reduce events (AGÊNCIA..., 2013).

Thus, some researchers agree with this statement when they mention that the level of collaboration among team members has great importance and impact on the quality of care, reducing adverse events and increases satisfaction among professionals (HOFMANN; MARK, 2006; KAWANO et al., 2014).

The domains in which scores below 75 points were found, indicating low satisfaction about the organizational climate in the studied institution were related to the perception of the Safety Climate (73.3), the Unit's Management (54.1) and the Hospital Management (54.7) and Working Conditions (74).

Thus, the results found in this study demonstrate a certain fragility in the safety climate, also reported by Rigobello (2015), Cauduro et al. (2015) and Carvalho and Cassiani (2012). Other studies that used the same instrument in Ireland and the United States also obtained results ranging from 65.9 to 79.7, respectively (TAYLOR, 2008; RELIHAN et al., 2009).

According to Sexton et al. (2006), the safety climate is directly related to leaders' commitment to patient safety and how safety issues are handled. Also, Hahn and Murphy (2008) also demonstrated that the security climate has a strong relationship with the communication used by managers, which should be open to value the participation of workers in the promotion of security actions.

To continue analysis of the data, the nursing workers were subdivided into the two groups previously described. This division enabled to compare the perception of the organizational climate of the workers who suffered sharp injuries with the perception of those who did not suffer accidents at the hospital during the period studied.

Table 3 represents the workers' perception of the organizational climate of the group of workers who suffered accidents with sharp objects.

This group included 21 nursing professionals who were victims of accidents involving sharp objects. It is noteworthy that this group showed greater satisfaction in the Team Work Climate domain and less satisfaction in the Perception of Management of Hospital Administration area.

**Table 3.** Distribution of the means, medians and standard deviation of Group 1 by the SAQ, according to the domains (Teamwork Climate, Safety Climate, Work Satisfaction, Stress Perception, Perception of Unit's Management and Hospital, Conditions and questions that do not apply to any domain. Interior of São Paulo, 2015 (n = 116).

DOMAINS	QUESTIONS	MEAN	MEDIAN	STANDAR DEVIATION
Teamwork Climate	Q1 to Q6	78.3	83.3	13.4
Safety Climate	Q7 to Q14	75.7	78.6	15.4
Job Satisfaction	Q15 to Q19	77.8	80	15.1
Perception of Stress	Q20 to Q23	77.4	81.3	19.1
Perception of the Unit's Management	Q24U to 29U	57.9	60	21.1
Perception of Hospital Management	Q24 to Q29	55.5	60	20.2
Work conditions	Q30 to Q32	77.8	62.5	15.8
Questions that do not apply to any domain	Q14, Q33, Q34, Q35, Q36	72.5	75	17.9
TOTAL	Q1 to Q41	69.6	71.3	20.5

**Table 4.** Distribution of the means, medians and standard deviation of Group 2, through the SAQ, according to the domains (Teamwork Climate, Safety Climate, Work Satisfaction, Stress Perception, Perception of Hospital and Unit's Management, Working Conditions), and questions that do not apply to any domain. Interior of São Paulo, 2015 (n = 116).

DOMAINS	QUESTIONS	MEAN	MEDIAN	STANDARD-DEVIATION
Teamwork Climate	Q1 a Q6	79.3	81.3	12.2
Safety Climate	Q7 a Q14	72.7	75	13.2
Job Satisfaction	Q15 a Q19	81.7	85	15.5
Perception of Stress	Q20 a Q23	75.1	75	23.3
Perception of the Unit's Management	Q24U a 29U	53.1	58.2	21.3
Perception of Hospital Management	Q24 a Q29	54.4	56.2	17.3
Work conditions	Q30 a Q32	73.1	66.7	18.3
Questions that do not apply to any domain	Q14, Q33, Q34, Q35, Q36	80.5	75	15.9
TOTAL	Q1 a Q41	70.6	70.7	20.1

Table 4 represents the workers' perception of the organizational climate of the group of workers who did not suffer accidents with sharp objects.

This group included 95 nursing professionals who did not suffer occupational accidents involving sharp objects. It is noteworthy that this group presented greater satisfaction for the domain Work Satisfaction and less satisfaction in the domain Perception of the Unit's Management. Thus, the need to bring hospital management closer to the professionals involved in this hospital unit is observed.

### 3.3 The relationship between the organizational climate and the occurrence of accidents

Associations tests were performed as described in the data analysis section to compare Groups 1 and 2. Table 5 shows the results obtained in one of the tests performed in this study (Mann-Whitney test and Test t).

It is noteworthy that items 24 to 29 of the QAS presented a normal distribution, and the Student's t-test was performed.

Although the values of the means and medians presented differences in the scores presented in Table 5 when the comparison tests were applied between the groups, the p-value indicates that there was no statistical significance for the groups studied.

However, when analyzing the domains of QAS separately, comparing the groups studied, it was verified that the domains of Teamwork and Workplace Satisfaction presented positive scores for assessing the organizational climate, but with discrete statistical differences between the groups: score of 78.3 (Group 1), 79.3 (Group 2) for the domain Teamwork Climate; 77.8 (Group 1) and 81.7 (Group 2) for the domain Work Satisfaction.

Regarding the Teamwork Climate domain, a higher score was observed in the group that did not suffer from sharps injuries, confirming research that states that the level of collaboration among team members has a strong impact on the quality of care

and reduces adverse events (HOFMANN; MARK, 2006; PROUDFOOT et al., 2007) reinforced also by the study of Cauduro et al. (2015), in which they affirm that it is essential the presence of the leader facilitating the communication between the team to obtain information on situations favorable to the occurrence of adverse events.

Proudfoot et al. (2007) argue that teamwork is associated with greater job satisfaction and better care provided in care and that satisfaction for the teamwork climate is important for the patient and for personal satisfaction. These data confirm the results obtained in this study, in which a favorable climate was observed for both the Teamwork Climate domain and the Work Satisfaction domain, presenting a higher score also for the Work Satisfaction domain in the group that did not suffer adverse events.

**Table 5.** Comparison test scores between the groups studied, using the QAS domains, related to the intervals obtained, median, mean, standard deviation and p-value (n = 116).

	Grupos	N	Intervalos obtidos	Mediana	Média (DP)	Valor p
<b>Q1_6</b>	1	21	54.2-100.0	83.3	78.4 (13.4)	0.801*
<b>Teamwork Climate</b>	2	95	45.8-100.0	81.3	79.3 (12.3)	
<b>Q7_13</b>	1	21	42.9-96.4	78.3	75.8 (15.4)	0.344*
<b>Safety Climate</b>	2	95	35.7-96.4	75	72.7 (13.3)	
<b>Q15_19</b>	1	21	45.0-100.0	80	77.9 (15.1)	0.217*
<b>Job Satisfaction</b>	2	95	30.0-100.0	85	81.8 (15.5)	
<b>Q20_23</b>	1	21	37.5-100.0	81.3	77.4 (19.1)	0.945*
<b>Perception of Stress</b>	2	95	0-100.0	75	75.1 (23.4)	
<b>Q 24_29</b>	1	21	29.2-91.7	54.2	58.3 (17.2)	0.304**
<b>Perception of the Unit's Management</b>	2	95	0-91.7	54.2	53.1 (21.3)	
<b>Q 24_29</b>	1	21	20.8-91.7	54.2	55.8 (17.4)	0.729**
<b>Perception of Hospital Management</b>	2	95	8.3-91.7	54.2	54.4 (17.3)	
<b>Q30_32</b>	1	21	33.3-100.0	83.3	77.8 (20.3)	0.478*
<b>Work conditions</b>	2	95	0-100.0	75	73.1 (23.7)	
<b>Q14</b>	1	21	0-100.0	50	52.4 (30.5)	0.792*
<b>Questions that do not apply to any domain</b>	2	86	0-100.0	50	53.8 (31.5)	
<b>Q33</b>	1	21	25.0-100.0	75	77.4 (23.6)	0.792*
<b>Questions that do not apply to any domain</b>	2	93	0-100.0	75	76.9 (27.4)	
<b>Q34</b>	1	21	25.0-100.0	75	69.0 (23.6)	0.233*
<b>Questions that do not apply to any domain</b>	2	94	0-100.0	75	75.5 (21.7)	
<b>Q35</b>	1	20	25.0-100.0	75	63.8 (30.9)	0.373*
<b>Questions that do not apply to any domain</b>	2	91	0-100.0	75	70.6 (27.0)	
<b>Q36</b>	1	20	25.0-100.0	75	72.5 (18.0)	0.062*
<b>Questions that do not apply to any domain</b>	2	95	25.0-100.0	75	80.5 (16.0)	

\*Mann-Whitney test; \*\*Student t-test.



## 4 Conclusion

The results showed an unfavorable perception of the organizational climate involving all the participants of the study, as well as a reflection on the importance of the evaluation of the organizational climate and its association with indicators of quality of the health services, such as hospital occupancy rate, occupational accident of nursing professionals, mortality rate, hospital infection rate, nursing absenteeism rate, incidence of pressure ulcer, incidence of falls, client satisfaction with nursing, among others.

According to the analysis of the domains, it was possible to identify that the low perceptions attributed to the management (hospital and of the units) point to a possible distancing between the teams and their supervisors, as well as the working conditions, which indicate the need for a situational diagnosis about the structure material and human resources, besides being able to indicate the fear of punishment by the management.

However, it was observed that job satisfaction was evidenced by most of the participants, demonstrating how they feel during the exercise of the profession in that institution. This perception is directly related to the quality of the care, since institutions that have professionals dissatisfied with the work environment have higher turnover rates and occurrence of adverse events, compromising the quality of the care (NEEDLEMAN et al., 2002; RIGOBELLO, 2015). Thus, health institutions that perform work satisfactorily tend to have a lower incidence of the occurrence of adverse events, with a great impact on nursing care.

Regarding the relationship between the organizational climate and the occurrence of accidents with sharp objects, the results did not indicate a direct relationship, and it was not possible to verify the influence of values and organizational practices on the behavior of workers in the event of accidents. However, it was possible to observe that the group that did not suffer sharp injuries was the one that presented the greatest satisfaction through the domains of Work Satisfaction and Teamwork Satisfaction.

A limitation observed in this study is the population studied since some nursing collaborators who suffered an accident at the institution did not belong to the staff during the period of data collection, limiting the number of participants.

Thus, this study provides subsidies for the restructuring of work processes and practices in

the hospital environment and results in advances in the scientific knowledge of nursing.

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### **Author's Contributions**

The authors, Letícia Silva de Souza and Fernanda Ludmilla Rossi Rocha, prepared this manuscript and both participated in all stages of its elaboration. The author Ligia de Lazzari Mazzo participated in the final review stage. All authors approved the final version of the text.

### **Notes**

<sup>1</sup>Approved by the Research Ethics Committee of the University of São Paulo at Ribeirão Preto School of Nursing EERP/USP (Protocol 39007114.2.0000.5393).