

## Factors associated with care omission and patient safety climate

*Fatores associados à omissão do cuidado e ao clima de segurança do paciente*

*Factores asociados a la omisión del cuidado y al clima de seguridad del paciente*

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### ABSTRACT

**Objective:** To identify the factors associated with the omission of nursing care and patient safety climate.

**Method:** A cross-sectional study developed at a university hospital in the Brazilian Center-West, between September and December 2022. The MISSCARE-Brazil and the Safety Attitudes Questionnaire were applied to a convenience sample of 164 nursing professionals.

**Results:** The most omitted care was walking three times a day or as prescribed (66.5%). The overall score of the Safety Attitudes Questionnaire was 63,8 (SD:12,6). The level of satisfaction ( $p<0.018$ ) and the perception of professional adequacy ( $p<0.018$ ) were associated with the omission of nursing care and the patient safety climate.

**Conclusion:** The study showed a high prevalence of omission of care and unfavorable perception of the patient safety climate, mainly associated with professional adequacy for work performance.

**Descriptors:** Nursing. Evaluation study. Nursing care. Organizational culture. Patient safety.

### RESUMO

**Objetivo:** Identificar os fatores associados à omissão do cuidado de enfermagem e ao clima de segurança do paciente.

**Método:** Estudo transversal desenvolvido em hospital universitário do Centro-Oeste brasileiro, entre setembro e dezembro de 2022. O MISSCARE-Brasil e o *Safety Attitudes Questionnaire* foram aplicados a uma amostra de conveniência de 164 profissionais de enfermagem.

**Resultados:** O cuidado mais omitido foi a deambulação três vezes por dia ou conforme prescrito (66,5%). O escore geral do *Safety Attitudes Questionnaire* foi 63,8 (DP:12,6). O nível de satisfação ( $p<0,018$ ) e a percepção de adequação profissional ( $p<0,018$ ) associaram-se com a omissão do cuidado de enfermagem e com o clima de segurança do paciente.

**Conclusão:** O estudo mostrou alta prevalência de omissão do cuidado e percepção desfavorável do clima de segurança, associados principalmente com a adequação profissional para desempenho do trabalho.

**Descritores:** Enfermagem. Estudo de avaliação. Cuidados de enfermagem. Cultura organizacional. Segurança do paciente.

### RESUMEN

**Objetivo:** Identificar los factores asociados a la omisión del cuidado de enfermería y al clima de seguridad del paciente.

**Método:** Estudio transversal desarrollado en hospital universitario del Centro-Oeste brasileño, entre septiembre y diciembre de 2022. El MISSCARE-Brasil y el *Safety Attitudes Questionnaire* fueron aplicados a una muestra de conveniencia en 164 profesionales de enfermería.

**Resultados:** El cuidado más omitido fue la ambulación tres veces por día o conforme prescrito (66,5%). El puntaje general del *Safety Attitudes Questionnaire* fue 63,8 (DE:12,6). El nivel de satisfacción ( $p<0,018$ ) y la percepción de adecuación profesional ( $p<0,018$ ) se asociaron con la omisión de cuidados de enfermería y con el clima de seguridad del paciente.

**Conclusión:** El estudio mostró alta prevalencia de omisión del cuidado y percepción desfavorable del clima de seguridad, asociados principalmente con la adecuación profesional para el desempeño del trabajo.

**Descriptorios:** Enfermería. Estudio de evaluación. Atención de enfermería. Cultura organizacional. Seguridad del paciente.

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## ■ INTRODUCTION

Universal health coverage aims to ensure that everyone has access to necessary health services, regardless of their financial situation. However, the positive effects of improving access to healthcare services can be compromised by a lack of safety in the care provided. Patient safety therefore plays a fundamental role in universal health coverage, as it strengthens the quality of care, through the implementation of initiatives to reduce the risk of errors and adverse events<sup>(1,2)</sup>.

Adverse events are understood as incidents that affect patients and result in harms. Regarding their nature, adverse events can stem from an “error of commission”, when an inappropriate action is performed, or an “error of omission”, when a necessary action is not performed. It is essential to avoid these errors, as they can result in negative outcomes for patients, their families, healthcare professionals and the organization<sup>(3)</sup>.

The COVID-19 pandemic brought greater visibility to the issue of patient safety, especially due to the significant increase in the occurrence of adverse events<sup>(4)</sup>. In this context, it was also observed a significant increase in the number of omitted nursing care (32.6%) when compared to periods before the pandemic (22.8%)<sup>(5)</sup>.

The omission of nursing care represents a serious problem for the quality of care and patient safety. This phenomenon involves the delay or omission of necessary care for the patient, whether clinical, emotional and/or administrative, which may have been partially performed, not performed or not performed at the recommended time<sup>(6,7)</sup>. Omission of care significantly reduces patient satisfaction and predisposes the occurrence of adverse events such as medication errors, urinary tract infections, falls, pressure injuries and an increase in hospital readmission rates and mortality<sup>(7)</sup>.

Although most patient safety initiatives focus efforts on reducing errors of commission, the negative impacts of errors of omission on patient outcomes are evident. Its harmful effects on patient safety are severe and, therefore, require attention<sup>(8)</sup>. The discussion about the phenomenon of omission of nursing care has become increasingly relevant in investments aimed at improving the patient safety climate<sup>(6,7)</sup>.

The safety climate, an important element for patient safety, is part of the safety culture, regarding the values, attitudes, beliefs, skills, and behavioral patterns that guide safe practice in healthcare. The attitudes and perceptions expressed by a member of an organization reflect their opinion regarding the organizational environment. The conjunction of opinions of all members, in turn, represents the climate. By focusing on the more tangible aspects of culture, climate can be more easily measured, allowing some of the

conditions that increase the risk of adverse events to be diagnosed and identified<sup>(9)</sup>.

Researchers from a study that analyzed the patient safety culture, adverse events, and omission of care in five hospitals in a region of the United States, identified that a good perception of the patient safety climate was associated with better results for patients. Likewise, the high rate of omission of care was associated with an increase in care errors, showing that the patient safety climate and the omission of nursing care have a great influence on care and need to be analyzed in favor of positive outcomes for patients<sup>(10)</sup>.

In view of the importance of investigations about the omission of nursing care, the patient safety climate, and its associated factors, considering them fundamental for public health, as they can provide relevant information for improving health care and patient safety, the research question formulated was: what factors influence nursing perception regarding omitted care and the patient safety climate? To answer this question, this study aimed to identify the factors associated with the omission of nursing care and the patient safety climate.

## ■ METHOD

Cross-sectional study conducted at a public university hospital, located in the Center-West of Brazil. It is a high-complex hospital with 289 beds, being 96 surgical beds, 114 clinical beds, 21 obstetric beds, 22 pediatric beds, 13 diagnostic/therapeutic beds and 23 complementary beds. The nursing staff is made up of 752 professionals, who provide services in inpatient or outpatient units.

The target population of the study consisted of 252 nursing professionals who worked in three inpatient units: Clinical, Pediatric and Surgical. The inclusion criteria were working in direct patient care and having experience equal to or greater than three months in the selected units. The exclusion criterion was being absent during the collection period, due to vacation or leave of any kind.

When applying the eligibility criteria to the target population, 45 professionals did not participate in the research: 29 because they had less than three months of experience; 13 for performing exclusively administrative services and three for being on leave during the collection period. Thus, 207 professionals were invited to participate in the study.

For data collection, two printed self-administered questionnaires were used, one of which was the MISSCARE – Brazil and the other the Safety Attitudes Questionnaire (SAQ) – Short Form 2006. The MISSCARE – Brazil, used to analyze the omission of nursing care, is a self-administered

questionnaire consisted of three parts. The first part has 20 items that aim to collect demographic and professional data. Part A, with 28 items referring to elements of nursing care not performed, with questions on a five-point Likert scale: (5) always missed; (4) frequently missed; (3) occasionally missed; (2) rarely missed; and (1) never missed. Part B has 28 items regarding the reasons for not performing nursing care, with responses also on a four-point Likert scale, ranging from: (4) significant reason; (3) moderate reason; (2) minor reason; (1) not a reason for missed care<sup>(11)</sup>.

In the part A of MISSCARE-Brazil, items are scored from one to five, with one corresponding to the absence of omission and five to higher levels of omission. In part B, the items are scored from one to four, with four corresponding to a significant reason and one not being a reason for omission. In both parts, the score was obtained from the mean score for each item, ranging from 1 to 5 in part A and 1 to 4 in part B. To calculate the number of omitted nursing care, the responses from part A of MISSCARE – Brazil, arranged into five alternatives, were dichotomized. The alternatives “occasionally missed”, “frequently missed” and “always missed” mean that care was omitted, and the alternatives “rarely missed” and “never missed” mean that care was performed<sup>(11)</sup>.

The Safety Attitudes Questionnaire (SAQ), used to assess participants’ perception regarding the patient safety climate, is self-administered and set into two parts, the first which contains 41 items, involving questions about patient safety and the second part has items that aim to collect demographic and professional data. The items in the first part are subdivided into six domains: teamwork climate, safety climate, job satisfaction, perception of stress, perception of unit and hospital management and working conditions. The response options are organized into Likert-type scales with six alternatives: totally disagree (A), partially disagree (B), neutral (C), partially agree (D), totally agree (E) and not applicable (X)<sup>(12)</sup>.

Regarding the score, the following values are considered: totally disagree, value 0; partially disagree, value 25; neutral, value 50; partially agree, value 75; and totally agree, value 100. The alternative “not applicable” does not receive a score and is disregarded in the score calculation. Statements with negative content are coded in reverse, thus, for the items responded, “totally disagree” is scored as “totally agree”. The formula  $(m - 1) \times$  was used to calculate the domain scores, where  $m$  represents the mean of the items in this domain, which can vary from a minimum of zero and a maximum of 100 points. The overall score was obtained from the average score of all item<sup>(12)</sup>.

In the analysis of SAQ scores, scores equal to or greater than 75 points represent the alternatives “slightly agree”

and “strongly agree”, which indicates that there is a positive or favorable perception regarding the climate, that is, the characteristics of the domain or item in question are present in the environment, favoring the adoption of safe attitudes in care. However, scores below 60 represent a warning for improvement actions to be aimed at the safety culture<sup>(12)</sup>.

Data were collected between September and December 2022. Based on convenience sampling, participants were approached at their workplace, according to the monthly shift schedules provided by the institution and were invited to participate in the study. The professionals who agreed to participate in the study received information about the research, signed both copies of the Informed Consent Form (ICF) and received an envelope containing a copy of the signed ICF and the collection instruments. It was recommended to not complete the survey inside the hospital, to avoid contamination of the material and not to compromise patient care time. The completed instruments were collected on the hospital premises, at a time previously agreed with each participant.

The researchers, in the presence of the participants checked the instruments, in order to avoid blank answers. Then, the data were entered into the Microsoft Excel for Windows®, software, version 365 and analyzed using the Statistical Package for the Social Science® (SPSS), version 22.0 software.

Initially, the normal distribution of quantitative variables was verified using the Kolmogorov-Smirnov test with Lilliefors correction. Next, descriptive statistics were performed to describe the characteristics of the participants and the SAQ and MISSCARE scales – Brazil. Symmetrical quantitative variables were described as mean and standard deviation (SD), while asymmetrical variables were described as median, 25<sup>th</sup> percentile (P25) and 75<sup>th</sup> percentile (P75). The qualitative variables were presented as absolute (n) and relative frequencies (%).

The dependent variables included the SAQ and MISSCARE – Brazil scores and the independent variables included demographic and professional characteristics. To analyze the association between the independent variables (gender, professional category, number of employment bonds, unit, highest educational level, weekly workload, period of work, intention to leave the position, perception of professional adequacy and levels of satisfaction) and the dependent ones, bivariate analyzes were performed.

The average scores of the dependent variables with symmetrical distribution (SAQ overall score and MISSCARE score – Brazil) were compared using the Student’s t test for independent samples or analysis of variance (ANOVA). The median scores of the dependent variable with asymmetric distribution (number of omitted care) were compared

using the Mann-Whitney U or Kruskal-Wallis test. In case of significance in the ANOVA and the Kruskal-Wallis test, the Bonferroni and Dunn post-hoc tests, respectively, were performed. Pearson correlation (r) (variables with symmetric distribution) or Spearman correlation (rho) (variables with asymmetric distribution) were performed to analyze the relationship between the quantitative independent variables (age, length of experience in the position/function and number of patients under responsibility) and the dependent variables. In all tests, a *p* value <0.05 was considered statistically significant.

This study is part of the project entitled “Culture and safety climate among the multiprofessional health team”,

approved by the Research Ethics Committee of the *Hospital das Clínicas* of the *Universidade Federal de Goiás*, under opinion no. 3.806.376 and CAAE: 49279115.4.0000.5078.

## ■ RESULTS

Among the 207 eligible professionals, 17 refused to participate in the study and 26 did not return the completed questionnaire, even after three attempts. A total of 164 professionals participated in the study, with a response rate of 79.2%. Table 1 describes the study participants according to their demographic and professional characteristics and levels of satisfaction.

**Table 1** – Distribution of participants according to demographic, professional characteristics, and levels of satisfaction (n=164). Center-West, Brazil, 2022

Variables	n (%)
<b>Gender</b>	
Female	143 (87.2)
Male	21 (12.8)
<b>Age (years)</b>	43.5 (36.0 –52.0)*
<b>Professional category</b>	
Nurse	53 (32.3)
Nursing technician/assistant	111 (67.7)
<b>Years of experience in position/role (years)</b>	15.0 (8.0 –22.0)*
<b>Number of employment bonds</b>	
1	52 (31.7)
≥ 2	112 (68.3)
<b>Unit</b>	
Clinical	59 (36.0)
Surgical	86 (52.4)
Pediatric	19 (11.6)
<b>Number of patients under responsibility</b>	6.0 (5.0 –8.0)*
<b>Higher educational level</b>	
High school	36 (22.0)
Higher education	42 (25.6)
Postgraduate ( <i>latosensu</i> or <i>strict sensu</i> )	86 (52.4)

Table 1 – Cont.

Variables	n (%)
<b>Weekly workload (hours)</b>	
30	60 (36.6)
36	93 (56.7)
≥ 40	11 (6.7)
<b>Work shift</b>	
Day	90 (54.9)
Night	67 (40.8)
Rotation between day and night	7 (4.3)
<b>Intention to leave the position</b>	
Yes	18 (11.0)
No	146 (89.0)
<b>Frequency of feeling that the number of professionals is adequate</b>	
100% of the time	5 (3.0)
75% of the time	58 (35.4)
50% of the time or less	101 (61.6)
<b>Job satisfaction</b>	
Verysatisfied	32 (19.5)
Satisfied	93 (56.7)
Neither satisfied nor unsatisfied	27 (16.5)
Unsatisfied	11 (6.7)
Veryunsatisfied	1 (0.6)
<b>Satisfaction with the profession</b>	
Very satisfied	37 (22.6)
Satisfied	87 (53.0)
Neither satisfied nor unsatisfied	29 (17.7)
Unsatisfied	10 (6.1)
Very unsatisfied	1 (0.6)
<b>Satisfaction with teamwork</b>	
Very satisfied	20 (12.2)
Satisfied	70 (42.7)
Neither satisfied nor unsatisfied	51 (31.1)
Unsatisfied	20 (12.2)
Very unsatisfied	3 (1.8)

Source: Research data, 2022.

Notes: \* Median (25<sup>th</sup> percentile-75<sup>th</sup> percentile).

Table 2 presents the descriptive analysis of the overall score and domains of SAQ, MISSCARE – Brazil, and the number of omitted care.

The results of MISSCARE – Brazil were dichotomized, allowing the identification of the frequency with which nursing care was omitted, as well as the frequency of reasons for omission (Table 3).

In the bivariate analysis, the MISSCARE – Brazil score and the number of omitted care were associated, respectively, with the unit ( $p$ -value=0.010;  $p$ -value=0.019); with the perception of the adequate staff size ( $p$ -value=0.004;  $p$ -value=0.018) and with the levels of satisfaction with the position ( $p$ -value<0.001;  $p$ -value<0.001), with the profession

( $p$ -value=0.008;  $p$ -value=0.018) and with teamwork ( $p$ -value=0.001;  $p$ -value=0.005). The results also demonstrated a negative correlation between age ( $r$ -0.208,  $p$ -value=0.008;  $\rho$ -0.190,  $p$ -value=0.015), time of experience in the position ( $r$ -0.226,  $p$ -value=0.004;  $\rho$ -0.264,  $p$ -value  $p$ =0.001) and care omission scores (Table 4).

In the bivariate analysis, performed between the overall SAQ score and the independent variables, an association was observed with the perception of the adequacy of staff size ( $p$ -value<0.001) and with the levels of satisfaction with the position ( $p$ -value<0.001), with the profession ( $p$ -value<0.001) and with teamwork ( $p$ -value<0.001) (Table 5).

**Table 2** – Descriptive analysis of SAQ and MISSCARE – Brazil scores (n=164). Center-West, Brazil, 2022

SAQ	Mean (SD)
Overall SAQ score	63.8 (12.6)
Teamwork climate	66.7 (55.6 –80.6)*
Safety climate	59.4 (46.9 –66.4)*
Job satisfaction	75.0 (60.0 –90.0)*
Perception of stress	81.3 (62.5 –100.0)*
Perception of unit management	60.0 (50.0 –75.0)*
Perception of hospital management	49.2 (18.6)
Working conditions	66.7 (43.8 –83.3)*
<b>MISSCARE – Brazil</b>	
Score MISSCARE – Brazil	2.1 (0.5)
Number of omitted care	7.0 (3.0 –12.0)*

Source: Research data, 2022.

Notes: SD = Standard Deviation; \* Median (25th percentile-75th percentile).

**Table 3** – Distribution of frequencies of omitted nursing care and reasons for omission of nursing care (n=164). Center-West, Brazil, 2022

Omitted Nursing care	%
Walking three times a day or as prescribed	66.5
Participation in interdisciplinary team discussion on patient care	62.8
Sitting the patient out of bed	61.0
Planning and teaching the patient and/or family for hospital discharge	53.7
Changing patient's position every two hours	51.8
Oral hygiene	43.3
Answering patient call within five minutes	40.8
Emotional support for the patient and/or family	39.0
Cleaning the patient promptly after each elimination	30.5
Requests for medication administration Y/N responded to within 15 minutes	29.3
Focused reassessment according to patient's condition	28.7
Hand hygiene	27.4
Complete record in the patient's medical record of all necessary data	25.6
Assessment of effectiveness of administered medications	25.6
Offering meals to patients who feed themselves	24.4
Fluid balance monitoring – input and output	24.4
Providing guidance for patients and family members regarding routines and care	24.4
Airway aspiration	21.9
Assessment of patient conditions each shift	21.3
Administering medications 30 min. before or after the prescribed time	19.5
Use of preventive measures for patients at risk of falling	17.7
Hydrate the patient, when appropriate, offering fluids orally or via tube	12.2
Care for venous access and infusion, according to the institution's standards	9.8
Feed the patient or administer the diet through a tube, at time	7.9
Assessment of vital signs as prescribed	7.9
Bathing/patient hygiene/measures to prevent skin lesions	7.9
Care for skin lesions/wounds	7.3
Monitoring capillary blood glucose (glucometer/dextrose) as prescribed	3.0
<b>Reasons for omission of nursing care</b>	<b>%</b>
Inadequate staff size	87.8

**Table 3** – Cont.

Omitted Nursing care	%
Unexpected increase in patient volume and/or severity in the unit	84.1
Inadequate staff size for patient care or administrative tasks	81.1
Patient urgency situations (e.g. worsening of patient's condition)	75.6
High number of admissions and discharges	75.6
High number of professionals working while ill or with health issues (hindering their ability to perform their proper duties)	72.6
The distribution of patients per professional is not balanced	65.2
The professional has more than one employment bond, which reduces their commitment/attention/concentration to provide assistance	59.1
Staff members don't help each other	59.1
Medications not available when needed	58.5
Other team professionals not providing assistance when it was necessary (e.g. Physiotherapist not assisting with patient's ambulation)	55.5
Tension/conflict or communication problems with the medical team	50.6
Materials/equipment were not available when needed	50.0
Nurses lacking preparation to lead and supervise teamwork	50.0
The shift change from the previous shift is inadequate	46.9
Materials/equipment did not function properly when required	46.9
Tension/conflict or communication problems with other support sectors	46.3
Lack of standardization for procedures/care	46.3
The professional who did not perform is not afraid of punishment/dismissal	45.7
Negligence by nursing professionals	45.7
Lack of motivation for work	44.5
Tension/conflict or communication problems within the nursing team	43.3
The professional has no ethical stance and is not committed to the institution	42.1
Lack of in-service education on required care	42.1
High number of nurses with little professional experience	39.6
Responsible professional was unavailable or absent from the unit	39.0
The nursing assistant did not communicate that assistance was not performed	37.2
Inadequate physical facilities of the unit/department, hindering care to isolated patients or distant areas	23.8

Source: Research data, 2022.

**Table 4** – Association of nursing professionals' profile with the MISSCARE – Brazil score and number of omitted care. Center-West, Brazil, 2022

Variables	MISSCARE-Brazil Score		Number of Omitted Care	
	Mean (SD)	p-value*	Median (P25-P75)	p-value*
<b>Gender</b>				
Female	2.1 (0.5)	0.169 <sup>†</sup>	7.0 (3.0-11.0)	0.136 <sup>**</sup>
Male	2.3 (0.6)		10.0 (4.0-15.5)	
<b>Age (years)</b>	-0.208 <sup>‡</sup>	<b>0.008<sup>‡</sup></b>	-0.190 <sup>††</sup>	<b>0.015<sup>††</sup></b>
<b>Professional category</b>				
Nurse	2.2 (0.6)	0.204 <sup>†</sup>	8.0 (4.0-13.0)	0.173 <sup>**</sup>
Technician/assistant	2.1 (0.5)		6.0 (3.0-11.0)	
<b>Time of experience in position</b>	-0.226 <sup>‡</sup>	<b>0.004<sup>‡</sup></b>	-0.264 <sup>††</sup>	<b>0.001<sup>††</sup></b>
<b>Number of employment bonds</b>				
1	2.1 (0.6)	0.570 <sup>†</sup>	6.5 (2.0-11.0)	0.398 <sup>**</sup>
≥ 2	2.1 (0.5)		7.0 (4.0-12.0)	
<b>Unit</b>				
Clinical	2.2 (0.5)	<b>0.010<sup>§-§§</sup></b>	7.0 (4.0-12.0)	<b>0.019<sup>††-***</sup></b>
Surgical	2.1 (0.5)		7.0 (4.0-11.3)	
Pediatric	1.8 (0.5)		3.0 (0.0-9.0)	
<b>Number of patients under supervision</b>	-0.002 <sup>‡</sup>	0.975 <sup>‡</sup>	0.049 <sup>††</sup>	0.535 <sup>††</sup>
<b>Higher educational level</b>				
High school	2.1 (0.5)	0.874 <sup>§</sup>	7.5 (5.0-12.0)	0.449 <sup>††</sup>
Higher education	2.1 (0.7)		5.0 (2.0-14.0)	
Post graduate	2.1 (0.5)		7.0 (3.0-11.3)	
<b>Weekly workload (hours)</b>				
30	2.0 (0.56)	0.300 <sup>§</sup>	5.5 (2.0-11.0)	0.228 <sup>††</sup>
36	2.2 (0.54)		7.0 (4.0-12.5)	
≥ 40	2.0 (0.42)		6.0 (3.0-10.0)	

**Table 4** – Cont.

Variables	MISSCARE-Brazil Score		Number of Omitted Care	
	Mean (SD)	p-value*	Median (P25-P75)	p-value*
<b>Work shift</b>				
Day	2.2 (0.5)		8.0 (4.0-13.0)	
Night	2.0 (0.5)	0.071 <sup>§</sup>	5.0 (2.0-11.0)	<b>0.035</b> <sup>††- †††</sup>
Rotation between day and night	2.3 (0.7)		11.0 (5.0-15.0)	
<b>Intention to leave the position</b>				
Yes	2.1 (0.7)	0.866 <sup>†</sup>	5.5 (3.0-12.3)	0.772 <sup>**</sup>
No	2.1 (0.5)		7.0 (3.0-12.0)	
<b>Adequacy of staff size</b>				
100% of the time	1.6 (0.6)		2.0 (0.5-9.5)	
75% of the time	2.0 (0.5)	<b>0.004</b> <sup>§- †††</sup>	5.0 (2.0-10.0)	<b>0.018</b> <sup>††- †††</sup>
50% of the time or less	2.2 (0.5)		8.0 (4.0-13.0)	
<b>Job satisfaction</b>				
Yes	2.1 (0.5)	<b>&lt;0.001</b> <sup>†</sup>	6.0 (3.0-11.0)	<b>&lt;0.001</b> <sup>**</sup>
No	2.7 (0.6)		15.5 (8.3-19.8)	
<b>Satisfaction with the profession</b>				
Yes	2.1 (0.5)	<b>0.008</b> <sup>†</sup>	7.0 (3.0-11.0)	<b>0.018</b> <sup>**</sup>
No	2.5 (0.7)		13.0 (5.0-20.0)	
<b>Satisfaction with teamwork</b>				
Yes	2.1 (0.5)	<b>0.001</b> <sup>†</sup>	6.0 (3.0-11.0)	<b>0.005</b> <sup>**</sup>
No	2.4 (0.6)		10.0 (6.0-18.0)	

Source: Research data, 2022.

Notes: SD = Standard Deviation; P25 = 25<sup>th</sup> percentile; P75 = 75<sup>th</sup> percentile; \*p-value significance level = p<0.05; †Student's t-test; ††Pearson correlation test; †††Analysis of variance (ANOVA); ††††Mann-Whitney U test; †††††Spearman correlation test; †††††Kruskal-Wallis test; †††††Statistical difference between the categories Pediatric and Surgical (p-value=0.013) and Pediatric and Clinical (p-value=0.011); †††††Statistical difference between the categories Pediatric and Clinical (p value=0.063) and Pediatric and Surgical (p-value=0.092); †††††Statistical difference between the Night and Day categories (p-value=0.076) and Night and Rotation (p-value=0.303); †††††Statistical difference between the categories 50% of the time or less and 100% of the time (p-value=0.063) and 50% of the time or less and 75% of the time (p-value=0.023); †††††Statistical difference between the categories 50% of the time or less and 100% of the time (p-value=0.267) and 50% of the time or less and 75% of the time (p-value=0.048).

**Table 5** – Association of nursing professionals' profile with the overall SAQ score. Center-West, Brazil, 2022

Variables	Overall SAQ score	
	Mean (SD)	p-value*
<b>Gender</b>		
Female	64.4 (12.1)	0.101 <sup>†</sup>
Male	59.6 (15.7)	
<b>Age (years)</b>	0.099 <sup>‡</sup>	0.206 <sup>‡</sup>
<b>Professional category</b>		
Nurse	62.5 (14.1)	0.381 <sup>†</sup>
Technician/assistant	64.4 (11.9)	
<b>Time of experience in position</b>	0.099 <sup>‡</sup>	0.209 <sup>‡</sup>
<b>Number of employment bonds</b>		
1	65.8 (11.7)	0.166 <sup>†</sup>
≥ 2	62.9 (13.0)	
<b>Unit</b>		
Clinical	63.4 (13.4)	0.852 <sup>§</sup>
Surgical	64.3 (12.8)	
Pediatric	62.7 (9.9)	
<b>Number of patients under supervision</b>	-0.139 <sup>‡</sup>	0.075 <sup>‡</sup>
<b>Higher educational level</b>		
High school	64.4 (10.4)	0.939 <sup>§</sup>
Higher education	63.7 (14.3)	
Postgraduate	63.5 (12.8)	
<b>Weekly workload (hours)</b>		
30	62.7 (11.6)	0.659 <sup>§</sup>
36	64.3 (13.5)	
≥ 40	65.5 (10.7)	

**Table 5** – Cont.

Variables	Overall SAQ score	
	Mean (SD)	p-value*
<b>Work shift</b>		
Day	63.6 (12.4)	
Night	63.7 (12.7)	0.774 <sup>§</sup>
Rotation between day and night	67.1 (16.5)	
<b>Intention to leave the position</b>		
Yes	64.1 (13.5)	
No	63.7 (12.6)	0.916 <sup>†</sup>
<b>Adequacy of staff size</b>		
100% of the time	77.3 (11.1)	
75% of the time	68.4 (11.2)	<0.001 <sup>§-**</sup>
50% of the time or less	60.5 (12.3)	
<b>Job satisfaction</b>		
Yes	65.0 (11.9)	
No	48.5 (12.4)	<0.001 <sup>†</sup>
<b>Satisfaction with the profession</b>		
Yes	64.7 (12.0)	
No	50.7 (14.0)	<0.001 <sup>†</sup>
<b>Satisfaction with teamwork</b>		
Yes	65.4 (11.7)	
No	53.9 (13.8)	<0.001 <sup>†</sup>

Source: Research data, 2022.

Notes: SD – Standard Deviation; \*Significance level of p-value = p<0.05; †Student's t-test; ‡Pearson's correlation test; §Analysis of variance (ANOVA); \*\* Statistical difference between categories 50% of the time or less and 100% of the time (p-value=0.007) and 50% of the time or less and 75% of the time (p-value<0.001).

## ■ DISCUSSION

The present study assessed the perception of the patient safety climate through the SAQ questionnaire, the omission of nursing care through the MISSCARE – Brazil and identified associations with demographic and professional characteristics. Participants showed an unfavorable perception of the patient safety climate and a high rate of omitted care, the main reason for which was attributed to the inadequate staff size. The other associated factors were age, level of satisfaction, work unit and time of experience.

There was a predominance of women when observing the participants' profile. Other studies carried out in Brazil and worldwide, with nursing professionals, also observed similar profiles<sup>(13,14)</sup>. The median age was 43.5 years, revealing more experienced professionals and indicating the aging of nursing workforce. Data shows that approximately 30% of nursing professionals are over 55 years old and are close to retirement. In this scenario, countries like Brazil should increase the number of nursing graduates by up to 8% per year to avoid problems with shortages by 2030<sup>(14)</sup>.

The time of experience of the participants in this study revealed a majority of experienced professionals and, when associated with omission of care, corroborates evidence where unsafe care and high prevalence of omitted care were related to low professional experience<sup>(15,16)</sup>. This means that experience is a crucial factor in providing high-quality care and safety.

The unfavorable perception of the patient safety climate, evidenced in the present study, indicates a fragile safety environment, a consequence of negative attitudes towards patient safety and may point out to possible weaknesses in the care provided by nursing<sup>(9,12)</sup>. The mean score, considered acceptable to represent a favorable perception of the patient's safety climate, is 75 points<sup>(9)</sup>, however, the score in this study was lower, similar to that identified in other studies such as the one conducted in Brazil and Cyprus<sup>(13,15)</sup>. Such studies suggested the participation of professionals in organizational issues and greater appreciation of the professional category as a strategy for strengthening the safety climate and culture<sup>(13,15)</sup>.

The domain "Perception of Management" presented the lowest scores in this study, both in "Perception of Unit Management" and "Perception of Hospital Management". Low scores in this domain may indicate disagreements between participants and management regarding safety issues. Furthermore, such data suggest that managers may not be adequately fulfilling their leadership role, which harms

engagement and can result in a lack of effective communication between care and management teams<sup>(17)</sup>. Therefore, the need for management involvement to adopt strategies to improve the safety climate and prevent omission of care is highlighted. Among the studies that used the same instrument, there was a tendency for lower scores in this domain when compared to the others<sup>(18,19)</sup>.

Regarding the "Safety climate" domain, other studies found similar results<sup>(15,20)</sup>. The Safety climate domain provides a measure of professionals' perception of the way the institution presents its patient safety system and policy. A low score in this domain may result from participants' low knowledge of the appropriate means to address errors and issues related to patient safety. It may also indicate that professionals may feel resistance and helplessness when reporting safety incidents that occur<sup>(9,21)</sup>.

Regarding the "Job Satisfaction" domain, the overall score of the institution was relatively close to the minimum recommended. This result was similar to that found in another study, which suggested that job satisfaction is an important factor that can increase the development and productivity of professionals, contributing to achieving the institution's objectives and goals<sup>(20)</sup>. More satisfied professionals have a better perception of patient safety climate<sup>(22)</sup>, information that corroborates the results of this study, where satisfaction was associated with the perception of the safety climate.

The level of satisfaction, when associated with the safety climate and the omission of care, may indicate that it is a fundamental element for increasing the morale and engagement of professionals. Another study, also conducted in hospitalization units in Goiás, identified a similar result<sup>(23)</sup>. When professionals are satisfied with their work, they are more likely to provide quality assistance, while dissatisfaction, reduces the professional's interest in participating in organizational matters and leads to an increase in risk behaviors for adverse events and omission of nursing care, as well as intensifying stress and burnout. Therefore, satisfaction can be seen as a facilitator for patient safety by increasing professional engagement and reducing stress and burnout on duty<sup>(15,24)</sup>. In this sense, there is considerable importance in promoting professional satisfaction for improvements in the quality and safety of care.

The only domain that obtained an overall score considered satisfactory was "Perception of Stress". The perception of stress refers to the professional's ability to deal with stressful situations in the work environment and recognize the potential impact on patient safety, since this impact is worsened in emergency situations, tense and hostile circumstances,

or moments of fatigue and/or excessive workload. Low perception of stress can result in an unsafe care environment<sup>(25)</sup>.

The study identified that the most omitted nursing care in inpatient units was "Walking three times a day or as prescribed". Other care related to patient mobility also showed high prevalence of omission: "Sitting the patient out of bed" and "Changing the patient's position every two hours", something similar to what was found in national and international studies<sup>(23,26)</sup>. These results can be explained due to the insufficient number of professionals and the increase in workload<sup>(26)</sup>, as it has been demonstrated that the presence of such factors can contribute to professionals becoming overloaded and prioritizing other activities over performing these care.

The lack of patient mobilization can lead to complications such as pain, deep thrombosis, fatigue, as well as psychological outcomes such as anxiety, anguish, and depressive mood. In more severe cases, there is an increase in the length of stay in the institution, increasing healthcare costs and also predisposing to the occurrence of adverse events such as falls and pressure injuries<sup>(27)</sup>.

The "Inadequate staff size" was reported by participants as the main reason for omission of care. This situation is also evidenced in other studies, which aimed to find predictors factors of omitted care<sup>(23,28)</sup>.

It is worth highlighting the fact that most nursing professionals pointed out that the number of professionals was adequate only 50% of the time or less, and that the adequacy between working time and the number of professionals working in the unit was associated with both the patient safety climate and the omission of nursing care. Such findings reinforce the idea that the adequacy of human resources cannot be neglected, as it constitutes a primordial measure to improve the safety climate and mitigate the occurrence of omitted care and adverse events. When there are not enough professionals, the high workload directly impacts the safety of the care provided to the patient<sup>(29)</sup>. Furthermore, the nurse/patient relationship is an important predictor of omission of nursing care and should, therefore, receive due attention<sup>(30)</sup>.

The reasons for omission of care such as "Unexpected increase in patient volume and/or severity in the unit"; "Inadequate staff size for patient care or administrative tasks"; and "High number of admissions and discharges", were also highlighted in other investigations, reinforcing the knowledge that nursing works with excessive workloads, which

constitutes an important predictive factor for omission of care and safe care<sup>(23,24,28)</sup>.

Regarding the limitations of the study, the results presented may reflect, at least partially, the effects of the COVID-19 pandemic, since the setting is an institution that has become a state reference for hospitalization of COVID-19 patients. Since it was conducted in only one institution, the generalization of the results may be unfeasible. However, it is important to highlight that the diagnosis of the safety climate and omission of care provides important data, and when added to the others present in the literature, provides an important basis that enables benchmarking strategies.

## ■ CONCLUSION

This study showed an unfavorable perception regarding the patient safety climate by nursing professionals. There was also a high prevalence of perceived omission of nursing care.

"Walking three times a day or as prescribed", "Participation in interdisciplinary team discussion on patient care", and "Sitting the patient out of bed" were the most omitted nursing care tasks. The most reported reasons for omission of care were "Inadequate staff size", "Unexpected increase in patient volume and/or severity in the unit", "Inadequate staff size for patient care or administrative tasks".

The factors associated with the patient safety climate identified were perception of adequacy of the number of professionals regarding time, level of satisfaction with the position, with the profession and with teamwork. The omission of care was associated with unity, perception of adequacy of the number of professionals regarding time, level of satisfaction with the position, the profession and teamwork, age, and time of experience in the position.

The results of the study revealed systemic deficits in the institution, involving managerial failures that impact care. It is clear that to improve the quality and safety of care, the patient safety climate and care omission need to be addressed, as well as their associated factors. Such results can provide support for managers to plan and implement actions aimed at promoting improvements in patient safety culture and climate, aiming to mitigate adverse events and omission of care. However, additional research is needed, using different methodological approaches, including qualitative methodologies, to understand and improve the quality of healthcare services regarding patient safety.

## ■ REFERENCES

1. Darrudi A, Ketabchi Khoonsari MH, Tajvar M. Challenges to achieving universal health coverage throughout the world: a systematic review. *J Prev Med Public Health*. 2022;55(2):125-33. doi: <https://doi.org/10.3961/jpmph.21.542>
2. World Health Organization. Global patient safety action plan 2021–2030: towards eliminating avoidable harm in health care [Internet]. Geneva: WHO;2021 [cited 2023 Jan 10]. Available from: <https://apps.who.int/iris/rest/bitstreams/1360307/retrieve>
3. World Health Organization. Conceptual framework for the international classification for patient safety version 1.1: final technical report January 2009 [Internet]. Geneva: WHO; 2009 [cited 2023 Mar 12]. Available from: [https://apps.who.int/iris/bitstream/handle/10665/70882/WHO\\_IER\\_PSP\\_2010.2\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/70882/WHO_IER_PSP_2010.2_eng.pdf?sequence=1&isAllowed=y)
4. Oliveira LGF, Boere V, Silva IO. Eventos adversos em unidades de saúde do estado da Bahia, antes e durante a COVID-19. *Rev Recien*. 2022;12(37):206-10. doi: <https://doi.org/10.24276/rrecien2022.12.37.206-210>
5. Alfuqaha OA, Alhalaiqa FN, Alqrneeh MK, Ayed A. Missed nursing care before and during the COVID-19 pandemic: a comparative cross-sectional study. *Int Nurs Rev*. 2023;70(1):100-10. doi: <https://doi.org/10.1111/inr.12795>
6. Kalisch BJ, Landstrom GL, Hinshaw AS. Missed nursing care: a concept analysis. *J Adv Nurs*. 2009;65(7):1509-17. doi: <https://doi.org/10.1111/j.1365-2648.2009.05027.x>
7. Recio-Saucedo A, Dall'Ora C, Maruotti A, Ball J, Briggs J, Meredith P, et al. What impact does nursing care left undone have on patient outcomes? review of the literature. *J Clin Nurs*. 2018;27(11-12):2248-59. doi: <https://doi.org/10.1111/jocn.14058>
8. Ball J, Griffiths P. Missed nursing care: a key measure for patient safety. U.S.: Patient Safety Network [Internet]. 2018 [cited 2023 Jan 12]. Available from: <https://psnet.ahrq.gov/perspective/missed-nursing-care-key-measure-patient-safety>
9. 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 Serv Res*. 2006;6:44. doi: <https://doi.org/10.1186/1472-6963-6-44>
10. Hessels AJ, Paliwal M, Weaver SH, Siddiqui D, Wurmser TA. Impact of patient safety culture on missed nursing care and adverse patient events. *J Nurs Care Qual*. 2019;34(4):287-94. doi: <https://doi.org/10.1097/NCQ.0000000000000378>
11. Siqueira LDC. Validação do MISSCARE-BRASIL – Instrumento para avaliar omissão de cuidados de enfermagem [tese]. Ribeirão Preto: Universidade de São Paulo; 2016. doi: <https://doi.org/10.11606/T.22.2017.tde-24012017-154800>
12. Carvalho REFL, Cassiani SHDB. Cross-cultural adaptation of the Safety Attitudes Questionnaire – Short Form 2006 for Brazil. *Rev Latino Am Enfermagem*. 2012;20(3):575-82. doi: <https://doi.org/10.1590/S0104-11692012000300020>
13. Castilho DEC, Silva AEB, Gímenes FRE, Nunes RLS, Pires ACAC, Bernardes CA. Factors related to the patient safety climate in an emergency hospital. *Rev Latino Am Enfermagem*. 2020;28:e3273. doi: <https://doi.org/10.1590/1518-8345.3353.3273>
14. World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership [Internet]. Geneva: WHO; 2020 [cited 2023 Mar 20]. Available from: <https://apps.who.int/iris/rest/bitstreams/1274201/retrieve>
15. Al-Mugheed K, Bayraktar N, Al-Bsheish M, AlSyouf A, Jarrar M, Al Baker W, et al. Patient safety attitudes among doctors and nurses: associations with workload, adverse events, experience. *Healthcare*. 2022;10(4):631. doi: <https://doi.org/10.3390/healthcare10040631>
16. Phelan A, McCarthy S, Adams E. Examining missed care in community nursing: a cross section survey design. *J Adv Nurs*. 2018;74(3):626-36. doi: <https://doi.org/10.1111/jan.13466>
17. Chen J, Ghardallou W, Comite U, Ahmad N, Ryu HB, Ariza-Montes A, et al. Managing hospital employees' burnout through transformational leadership: the role of resilience, role clarity, and intrinsic motivation. *Int J Environ Res Public Health*. 2022;19(17):10941. doi: <https://doi.org/10.3390/ijerph191710941>
18. Mucelini FC, Matos FGOA, Alves DCI, Silva EB, Nishiyama JAP, Moraes RMR, et al. Clima de segurança do paciente: avaliação de trabalhadores do pronto-socorro de hospital universitário. *Rev Cienc Saude*. 2020;10(3):101-8. doi: <https://doi.org/10.21876/rcshci.v10i3.969>
19. Barboza ARCA, Figueiredo KC, Miranda FMD, Reis CT, Silva TA, Siqueira CP, et al. Potencialidades e fragilidades do clima de segurança do paciente: scoping review. *Res Soc Dev*. 2021;10(4):e41110414167. doi: <https://doi.org/10.33448/rsd-v10i4.14167>
20. Milton J, Chaboyer W, Åberg ND, Erichsen Andersson A, Oxelmark L. Safety attitudes and working climate after organizational change in a major emergency department in Sweden. *Int Emerg Nurs*. 2020;53:100830. doi: <https://doi.org/10.1016/j.ienj.2020.100830>
21. Ningrum EH, Evans S, Soh SE, Ernest A. Perception of safety climate among Indonesian nurses: a cross-sectional survey. *J Public Health Res*. 2021;10(2):2182. doi: <https://doi.org/10.4081/jphr.2021.2182>
22. Kolankiewicz ACB, Schmidt CR, Carvalho REFL, Spies J, Dal Pai S, Lorenzini E. Patient safety culture from the perspective of all the workers of a general hospital. *Rev Gaúcha Enferm*. 2020;41:e20190177. doi: <https://doi.org/10.1590/1983-1447.2020.20190177>
23. Lima JC, Silva AEB, Caliri MHL. Omission of nursing care in hospitalization units. *Rev Latino Am Enfermagem*. 2020;28:e3233. doi: <https://doi.org/10.1590/1518-8345.3138.3233>
24. Clark RRS, Lake E. Burnout, job dissatisfaction and missed care among maternity nurses. *J Nurs Manag*. 2020;28(8):2001-6. doi: <https://doi.org/10.1111/jonm.13037>
25. Pagani S, Crozeta K, Crisigiovanni ABR. Culture of patient safety: evaluation of nurses. *Rev Rene*. 2019;20:e39782. doi: <https://doi.org/10.15253/2175-6783.20192039782>
26. Al-Faouri I, Obaidat DM, AbuAlRub RF. Missed nursing care, staffing levels, job satisfaction, and intent to leave among Jordanian nurses. *Nurs Forum*. 2021;56(2):273-83. doi: <https://doi.org/10.1111/nuf.12537>
27. Chindamo MC, Marques MA. Papel da deambulação na prevenção do tromboembolismo venoso em pacientes clínicos: onde estamos? *J Vasc Bras*. 2019;18:e20180107. doi: <https://doi.org/10.1590/1677-5449.180107>
28. Araújo PRS, Rodrigues MCS, Santos ACS. Evidências de omissões de cuidados de enfermagem e suas razões: revisão integrativa. *Res Soc Dev*. 2022;11(11):e316111133632. doi: <http://doi.org/10.33448/rsd-v11i11.33632>
29. Kruschewsky NDF, Freitas KS, Silva Filho MAS. Fatores associados à cultura de segurança do paciente em unidades de terapia intensiva. *Rev Baiana Enferm*. 2020;34:e37150. doi: <https://doi.org/10.18471/rbe.v34.37150>
30. Vogelsang A, Göransson KE, Falk A, Nymark C. Missed nursing care during the COVID-19 pandemic: a comparative observational study. *J Nurs Manag*. 2021;29(8):2343-52. doi: <https://doi.org/10.1111/jonm.13392>

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