

*PATIENT SAFETY CULTURE FROM THE PERSPECTIVE OF INTENSIVE CARE UNIT NURSES*

**CULTURA DE SEGURANÇA DO PACIENTE SOB A ÓTICA DE ENFERMEIROS DE UNIDADES DE TERAPIA INTENSIVA**

**CULTURA DE SEGURIDAD DEL PACIENTE DESDE LA PERSPECTIVA DE LAS ENFERMERAS DE UNIDADES DE CUIDADOS INTENSIVOS**

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**ABSTRACT**

**Introduction:** Patient safety culture is an essential component of quality healthcare, especially in intensive care units, which are characterized by the high complexity of care and greater risk of adverse events. **Objective:** To investigate patient safety culture from the perspective of intensive care unit nurses. **Methods:** A cross-sectional, descriptive, and quantitative survey study was conducted between February and June 2024 in 12 intensive care units of a private tertiary hospital located in Northeast Brazil. Thirty-seven nurses with at least six months of experience in the sector participated. The Hospital Survey on Patient Safety Culture instrument, composed of 12 dimensions designed to assess patient safety culture, was used. **Results:** The dimensions "Organizational learning and continuous improvement" (89.2%) and "Supervisors' expectations and actions in promoting safety" (84.5%) showed the highest positive percentages, representing strengths of the institutional culture. Conversely, the dimension "non-punitive responses to errors" obtained the lowest score (25.2%), highlighting weaknesses in this aspect. **Conclusion:** The findings reinforce the persistence of a punitive culture in the face of errors, which represents a challenge for strengthening patient safety. In this context, strategies that promote the reporting of adverse events and organizational learning are fundamental for consolidating an effective safety culture.

**Keywords:** Organizational Culture; Patient Safety; Intensive Care Units; Critical Care Nursing; Quality of Health Care.

**RESUMO**

**Introdução:** A cultura de segurança do paciente representa um componente essencial na qualidade da assistência em saúde, especialmente nas unidades de terapia intensiva, caracterizadas pela elevada complexidade do cuidado e maior risco de eventos adversos. **Objetivo:** Investigar a cultura de segurança do paciente sob a ótica de enfermeiros de unidade de terapia intensiva. **Métodos:** Estudo transversal, descritivo e quantitativo, do tipo survey, conduzido entre fevereiro e junho de 2024, em 12 unidades de terapia intensiva de um hospital terciário privado, localizado no Nordeste do Brasil. Participaram 37 enfermeiros com tempo mínimo de seis meses de atuação no setor. Utilizou-se o instrumento Hospital Survey on Patient Safety Culture, composto por 12 dimensões destinadas à avaliação da cultura de segurança do paciente. **Resultados:** As dimensões "Aprendizado organizacional e melhoria contínua" (89,2%) e "Expectativas e ações dos supervisores na promoção da segurança" (84,5%) apresentaram os maiores percentuais positivos, configurando-se como pontos fortes da cultura institucional. Em contrapartida, a dimensão "Respostas não punitivas aos erros" obteve o menor escore (25,2%), evidenciando fragilidade nesse aspecto. **Conclusão:** Os achados reforçam a persistência de uma cultura punitiva frente aos erros, o que representa um desafio para o fortalecimento da segurança do paciente. Nesse contexto, estratégias que promovam a notificação de eventos adversos e o aprendizado organizacional mostram-se fundamentais para a consolidação de uma cultura de segurança efetiva.

**Palavras-chaves:** Cultura Organizacional; Segurança do Paciente; Unidades de Terapia Intensiva; Enfermagem de Cuidados Críticos; Qualidade da Assistência à Saúde.

**RESUMEN**

**Introducción:** La cultura de seguridad del paciente es un componente esencial de la atención médica de calidad, especialmente en unidades de cuidados intensivos, caracterizadas por una alta complejidad de la atención y un mayor riesgo de eventos adversos. **Objetivo:** Investigar la cultura de seguridad del paciente desde la perspectiva del personal de enfermería de unidades de cuidados intensivos. **Métodos:** Se realizó un estudio transversal, descriptivo y cuantitativo, de encuesta, entre febrero y junio de 2024 en 12 unidades de cuidados intensivos de un hospital terciario privado ubicado en el noreste de Brasil. Participaron 37 enfermeros con al menos seis meses de experiencia en el sector. Se utilizó el instrumento Encuesta Hospitalaria sobre Cultura de Seguridad del Paciente, compuesto por 12 dimensiones diseñadas para evaluar la cultura de seguridad del paciente. **Resultados:** Las dimensiones "Aprendizaje organizacional y mejora continua" (89,2%) y "Expectativas y acciones de los supervisores en la promoción de la seguridad" (84,5%) mostraron los porcentajes positivos más altos, lo que representa las fortalezas de la cultura institucional. En contraste, la dimensión "Respuestas no punitivas a los errores" obtuvo la puntuación más baja (25,2%), destacando la debilidad en este aspecto. **Conclusión:** Los hallazgos refuerzan la persistencia de una cultura punitiva hacia los errores, lo que representa un desafío para fortalecer la seguridad del paciente. En este contexto, las estrategias que promueven la notificación de eventos adversos y el aprendizaje organizacional son fundamentales para la consolidación de una cultura de seguridad eficaz.

**Palabras clave:** Cultura Organizacional; Seguridad del Paciente; Unidades de Cuidados Intensivos; Enfermería de Cuidados Críticos; Calidad de la Atención Médica.



## INTRODUCTION

Patient safety is essential for the quality of health services, comprising preventive actions aimed at minimizing risks and harm <sup>(1)</sup>. This topic gained prominence with the 1999 report *To Err is Human*, which revealed the magnitude of risks in healthcare, leading to avoidable errors and harm. The World Health Organization (WHO) defines patient safety as the reduction of unnecessary harm associated with healthcare, consolidating it as a global agenda discussed in various contexts <sup>(2-3)</sup>.

In this scenario, research on the evaluation, implementation, and effectiveness of tools that promote awareness of patient safety, as well as their impact on health management, is crucial for the development of safe care. This includes an emphasis on learning, continuous improvement, and a non-punitive approach to errors. Thus, the Patient Safety Culture (PSC) emerges, defined as the values, attitudes, competencies, and behavioral patterns, both individual and collective, that determine the commitment, style, and proficiency in managing a healthy and safe organization <sup>(4)</sup>.

Patient Care (PC) has become a key indicator for implementing initiatives aimed at reducing risks and adverse events (AEs) in hospitals. AEs are more frequent in Intensive Care Units (ICUs) due to the greater complexity of care and the criticality of patients. This environment demands constant interventions, intensive use of technology, and administration of multiple medications, increasing the risk of

errors and complications and generating a large volume of information <sup>(5)</sup>.

Furthermore, the high turnover of professionals, the need for rapid decisions, and the workload in a more vulnerable environment lead to potential stress situations individually and as a team, making the ICU vulnerable to these events. This requires protocols, training, and strategies to minimize risks and ensure the effective implementation of PC, thus guaranteeing safe and high-quality care <sup>(5-6)</sup>.

Studies correlate PC with favorable patient outcomes, such as reduced readmission rates, AEs, and mortality, as well as increased patient satisfaction. In ICUs, these relationships become even more significant, reflecting in reduced mortality and improved family satisfaction <sup>(6)</sup>.

Historically, nursing has always been committed to the quality of care provided, playing a central role in promoting patient safety, especially in ICUs. An important milestone was the work of Florence Nightingale during the Crimean War in 1855, when she managed to significantly reduce mortality rates through the implementation of organizational and hygienic practices <sup>(2)</sup>.

Currently, nursing professionals continue to perform an essential function. In this context, their constant presence at the bedside places them in a strategic position to identify risks, prioritize interventions, and prevent adverse events. Therefore, understanding patient safety from a nursing perspective is crucial for planning

safer, more effective, and quality-centered care.  
(5)

Assessment is considered a primary step in consolidating a safety culture in institutions. For this purpose, various instruments have been developed, often in the form of quantitative questionnaires, covering different dimensions of the topic. Among them, the Hospital Survey on Patient Safety Culture (HSOPSC), developed by the Agency for Healthcare Research and Quality (AHRQ), stands out. It is widely used in international studies, translated and validated for Portuguese, and is freely accessible (7,8,9).

The HSOPSC allows for the identification of areas needing improvement; evaluating the effectiveness of implemented actions; comparing internal and external indicators; and prioritizing weak areas (7). This process is particularly relevant in ICUs, where adverse events (AEs) are more frequent due to the high risk of care, complexity of care, and stress on the teams (10). Furthermore, a strong safety culture is associated with reduced AEs, lower mortality, and greater patient satisfaction, especially in ICUs (4,11-12).

Given the importance of the topic, this study aimed to investigate patient safety culture from the perspective of intensive care unit nurses.

## METHODS

This is a cross-sectional, survey-type study with a descriptive and quantitative approach, conducted in 12 ICUs, including adult and maternal-infant profiles, of a private hospital

located in Recife, Pernambuco, in northeastern Brazil, accredited by the Joint Commission International (JCI), which evaluates and certifies the quality of health services, aiming to guarantee the safety and excellence of care. Thirty-seven nurses with six months or more of service at the institution and working in ICUs participated. Those absent due to medical leave, vacation, or maternity leave during the data collection period were excluded.

Data were collected between February and June 2024 using the HSOPSC questionnaire, translated and validated for Brazil (10). The instrument assesses professionals' agreement on CSP using a five-category Likert scale, subsequently grouped into three levels (negative, neutral, and positive). The questionnaire has 44 items, organized into 12 dimensions of patient safety, and includes two outcome indicators: the overall assessment of patient safety and the number of reported events.

Dimensions with positive response percentages above 75% were considered satisfactory. Percentages below or equal to 50% were identified as weak, requiring intervention (7).

Data were organized and analyzed by dimension. Absolute and relative frequencies were calculated for qualitative variables, while means, standard deviations, minimum and maximum values were used for quantitative variables. Statistical analyses were performed using SPSS software, version 21.0, with a significance level of 5%.

The study followed national and international ethical guidelines and was

approved by the Research Ethics Committee of the Real Hospital Português, under CAAE: 76712123.5.0000.9030, opinion no. 7.311.476.

## RESULTS

Of the 37 participating nurses, the majority were female (89.2%), with a mean age of 39.5 years, and held postgraduate

specialization degrees (75.7%). Adult ICUs were the most prevalent (59.4%). Regarding length of service, participants had between 1 and 5 years of experience at the hospital (35.1%) and a weekly workload between 40 and 59 hours (91.9%), with an average of 11.6 years of experience in the field (Table 1).

**Table 1** - Sociodemographic and work profile/characteristics of nurses working in ICUs of a tertiary hospital. Recife, Pernambuco, Brazil, 2024.

CHARACTERISTICS/VARIABLES	N = 37
<b>FEMALE GENDER</b>	33 (89,2%)
AGE (years)	
Average (DP)	39,5 (7,7)
Medium (minimum - maximum)	38 (27 – 56)
<b>LEVEL OF EDUCATION</b>	
Bachelor's Degree	4 (10,8%)
Postgraduate Studies (Specialization Level)	28 (75,7%)
Postgraduate Studies (Specialization Level - Residency)	4 (10,8%)
Postgraduate Studies (Master's Level)	1 (2,7%)
<b>INTENSIVE CARE UNIT</b>	
Transplant ICU	4 (10,8%)
Neurological ICU	4 (10,8%)
Semi-Intensive Care Unit	4 (10,8%)
General Adult ICU	6 (16,2%)
Outpatient General Adult ICU	2 (5,4%)
Coronary ICU	2 (5,4%)
Cardiothoracic Recovery ICU	3 (8,1%)
Pediatric Cardiac ICU	4 (10,8%)

Neonatal ICU 1	1(2,7%)
Neonatal ICU 2	3 (8,1%)
Pediatric ICU	3 (8,1%)
Pediatric Oncology ICU	1 (2,7%)
<b>LENGTH OF SERVICE (years)</b>	
1 to 5	13 (35,1%)
6 to 10	7 (18,9%)
11 to 15	6 (16,2%)
16 to 20	3 (8,1%)
21 or more	8 (21,6%)
<b>TIME IN YOUR FIELD (Years)</b>	
1 to 5	12 (32,4%)
6 to 10	9 (24,3%)
11 to 15	6 (16,2%)
16 to 20	4 (10,8%)
21 or more	6 (16,2%)
<b>WORKING HOURS PER WEEK (Hours/Week)</b>	
Less than 20	1 (2,7%)
20 to 39	1 (2,7%)
40 to 59	34 (91,9%)
60 to 79	1 (2,7%)
<b>JOB INVOLVING INTERACTION WITH PATIENTS</b>	36 (97,3%)
<b>TIME WORKED IN YOUR CURRENT SPECIALTY (years)</b>	
Mean (SD)	11,5 (7,1)
Median (minimum - maximum)	12 (1,5 – 28)

Regarding the categorization of dimensions, it is observed that dimensions 1 (Teamwork within units), 2 (Supervisors' expectations/actions to promote safety), 3 (Organizational learning and continuous improvement), 4 (Hospital management support for patient safety), and 6 (Feedback on information and communication about errors)

showed percentages greater than 75% of positive responses, highlighting strong areas of patient safety. Dimension 12, which addresses non-punitive responses to errors, presents only a percentage below 50%, showing itself as a point of weakness in patient safety in the service (Table 2).

**Table 2** - Categorized dimensions (negative/neutral/positive) for the studied sample of the RHP. Recife, Pernambuco, Brazil, 2024.

ITENS		Negativo	Neutro	Positivo
<b>D1 - Teamwork within units</b>				<b>79,7%</b>
A1	N	5	4	28
	%	13,5%	10,8%	75,7%
A3	N		4	33
	%		10,8%	89,2%
A4	N		2	35
	%		5,4%	94,6%
A11	N	7	8	22
	%	18,9%	21,6%	59,5%
<b>D2 - Supervisors' expectations/actions to promote safety</b>				<b>84,5%</b>
B1	N	3	3	31
	%	8,1%	8,1%	83,8%
B2	N	2	7	28
	%	5,4%	18,9%	75,7%
B3r	N	2	2	33
	%	5,4%	5,4%	89,2%

ITENS		Negativo	Neutro	Positivo
B4r	N	3	1	33
	%	8,1%	2,7%	89,2%
<b>D3 - Organizational learning and continuous improvement</b>				<b>89,2%</b>
A6	N	1		36
	%	2,7%		97,3%
A9	N	3	4	30
	%	8,1%	10,8%	81,1%
A13	N	2	2	33
	%	5,4%	5,4%	89,2%
<b>D4 - Apoio da gestão hospitalar para segurança do paciente</b>				<b>78,4%</b>
F1	N	4	3	30
	%	10,8%	8,1%	81,1%
F8	N	6	1	30
	%	16,2%	2,7%	81,1%
F9r	N	6	4	27
	%	16,2%	10,8%	73,0%
<b>D5 - Overall perception of patient safety</b>				<b>60,8%</b>
A10r	N	10	6	21
	%	27,0%	16,2%	56,8%
A15	N	14	7	16
	%	37,8%	18,9%	43,2%
A17r	N	7	8	22
	%	18,9%	21,6%	59,5%
A18	N	1	5	31

ITENS		Negativo	Neutro	Positiv o
		2,7%	13,5%	83,8%
		%		
<b>D6 - Return of information and communication about errors</b>				<b>75,7%</b>
C1	N	7	5	25
		18,9%	13,5%	67,6%
	%			
C3	N	3	5	29
		8,1%	13,5%	78,4%
	%			
C5	N	2	5	30
		5,4%	13,5%	81,1%
	%			
<b>D7 - Opening of communication</b>				<b>56,8%</b>
C2	N		8	29
			21,6%	78,4%
	%			
C4	N	4	15	18
		10,8%	40,5%	48,6%
	%			
C6r	N	7	14	16
		18,9%	37,8%	43,2%
	%			
<b>D8 - Frequency of reported events</b>				<b>70,3%</b>
D1	N	6	7	24
		16,2%	18,9%	64,9%
	%			
D2	N	2	7	28
		5,4%	18,9%	75,7%
	%			
D3	N	4	7	26
		10,8%	18,9%	70,3%
	%			
<b>D9 - Teamwork between units</b>				<b>70,9%</b>
F2r	N	12	5	20
		32,4%	13,5%	54,1%
	%			

ITENS		Negativo	Neutro	Positivo
F4	N	2	6	29
	%	5,4%	16,2%	78,4%
F6r	N	4	6	27
	%	10,8%	16,2%	73,0%
F10	N	6	2	29
	%	16,2%	5,4%	78,4%
<b>D10 - Professionals</b>				<b>55,4%</b>
A2	N	10	5	22
	%	27,0%	13,5%	59,5%
A5r	N	18	8	11
	%	48,6%	21,6%	29,7%
A7r	N	2	2	33
	%	5,4%	5,4%	89,2%
A14r	N	13	8	16
	%	35,1%	21,6%	43,2%
<b>D11 - Shift/shift handover and internal transfers</b>				<b>58,8%</b>
F3r	N	11	6	20
	%	29,7%	16,2%	54,1%
F5r	N	10	9	18
	%	27,0%	24,3%	48,6%
F7r	N	10	5	22
	%	27,0%	13,5%	59,5%
F11r	N	5	5	27
	%	13,5%	13,5%	73,0%
<b>D12 - Non-punitive responses to errors</b>				<b>25,2%</b>

ITENS		Negativo	Neutro	Positivo
A8r	N	20	7	10
	%	54,1%	18,9%	27,0%
A12r	N	17	6	14
	%	45,9%	16,2%	37,8%
A16r	N	26	7	4
	%	70,3%	18,9%	10,8%

Table 3 shows the results of the patient safety rating in the unit/service assigned by the

nurses. The majority (56.8%) rated patient safety in their area as "very good".

**Table 3** - Patient safety according to self-report by nurses working in the ICUs of a tertiary hospital. Recife, Pernambuco, Brazil, 2024.

Patient safety	N	%
Excellent		
Very Good		
Average	10	27,0
Poor		
Total		
	21	56,8
	3	8,1
	3	8,1
	37	100,0

The number of adverse event notifications completed and submitted by nurses

in the last twelve months averaged 3 to 5 notifications (32.4%) (Table 4).

**Table 4.** Frequency of adverse events reported by nurses working in the ICU of a tertiary hospital. Recife, Pernambuco, 2024.

Adverse events reported	N	%
No notifications		
1 to 2 notifications		
3 to 5 notifications		
6 to 10 notifications	1	2,7
11 to 20 notifications		
21 or more notifications		
	9	24,3
	12	32,4
	7	18,9
	5	13,5
	3	8,1

## DISCUSSION

The work of nurses is marked by constant contact with risky situations, whose perception and daily experience can significantly contribute to improving care and ensuring patient safety. In the ICU, this scenario becomes even more challenging. The way nurses understand and experience the safety culture directly influences the quality of care provided, being an essential factor for the prevention of adverse events and the promotion of a safer care environment <sup>(4)</sup>.

On the other hand, the extensive working hours reported by most participants are a worrying factor, as they are associated with

increased fatigue, a higher occurrence of errors, and lower quality of care provided <sup>(14)</sup>.

Of the 12 dimensions evaluated by the instrument, five presented positive response percentages above 75%, being classified as strong areas for patient safety. These results highlight positive aspects in the organizational system that directly impact the quality of care. In the intensive care environment, where the severity of patients requires complex and decisive interventions in the short term, patient safety should be considered an essential priority <sup>(15-16)</sup>.

Among the strengths identified, teamwork stands out as a positive impact of the organizational climate and leadership in

strengthening safety practices. Teamwork, combined with effective management and well-structured organizational systems, significantly contributes to the reduction of errors, often related to institutional factors <sup>(17-18)</sup>.

Hospital management support is a determining factor in consolidating an effective safety culture; when institutional leadership values and encourages safe practices, there is a strengthening of the team's commitment to the quality of care. Investments in continuous training, availability of adequate resources, and encouragement of open communication between managers and nursing professionals create a safer environment for patients and workers <sup>(16-9)</sup>.

Furthermore, recognition of the role of nurses in decision-making and in planning safety actions contributes to team engagement, favoring adherence to protocols and reducing adverse events (6,4). Silva-Batalha and Melleiro (19) highlight, through their results, that the lack of perception of management's commitment to patient safety can generate significant negative impacts, such as team demotivation, stress and fatigue among professionals, harming their performance and making care less safe. This hinders adherence to safety protocols, increasing the risk of errors and compromising the quality of care provided.

The dimension "Supervisors' expectations/actions to promote safety" indicates that supervisors value the contributions of professionals and promote actions aimed at the continuous improvement of patient safety. Studies corroborate that strategic leaders and supervisors who establish clear goals and

promote safe practices encourage the identification of failures and the engagement of teams, positively impacting patient safety <sup>(17-19)</sup>.

The dimension "Organizational learning and continuous improvement" was the best evaluated; this dimension is directly related to the development of competencies and the implementation of management styles that encourage training and knowledge sharing in the workplace. Investing in continuous learning is recognized as one of the most effective strategies for improving patient safety, allowing for rapid adaptation to changes and the dissemination of best practices <sup>(11-15)</sup>.

Error communication, represented by the dimension "Feedback on information and communication about errors", was also highlighted as a key element. Open communication allows for the identification of failures, the implementation of solutions, and the strengthening of trust among teams, promoting safer care <sup>(12)</sup>. For Silva <sup>(16)</sup>, structured feedback on incidents increases professional engagement and contributes to positive changes in organizational culture, creating a collaborative environment where errors are seen as learning opportunities.

The low score in the worst-rated dimension, "Non-punitive responses to error," may reflect the prevalence of a blame culture, which discourages error reporting and limits organizational learning. Fear of punishment is one of the main obstacles to improving patient safety, leading to underreporting of adverse events and the perpetuation of failures in care processes <sup>(9)</sup>.

The instability of employment relationships, characteristic of private management, may be associated with the punishment culture identified in the hospital studied. Studies indicate that, in private institutions, pressure for results and competitiveness can generate excessive demands and associate errors with financial losses, hindering the implementation of a non-punitive approach<sup>(20)</sup>.

Although the overall safety assessment was predominantly positive (“Very Good” / “Excellent”), the low frequency of adverse event reports (32.4% reporting 3 to 5 events in the last 12 months) suggests underreporting, even in an environment with favorable perceptions of safety. Underreporting is a persistent barrier in Brazil, frequently attributed to a lack of effective reporting systems, a punitive culture, and a lack of knowledge among teams<sup>(12-15)</sup>.

Despite identified advances in areas such as teamwork and organizational support, the fragility of non-punitive responses to errors represents a significant challenge. Interventions such as regular training, structured feedback, and the adoption of transformational leadership are recommended strategies to overcome these barriers and consolidate a more robust patient safety protocol<sup>(9-11-18)</sup>.

Some limitations in the study were identified, such as the refusal of some nurses to participate due to the length of the questionnaire and the exclusion of professionals with less experience in ICUs, which may have restricted the diversity of perspectives.

## CONCLUSIONS

The study revealed that, although patient safety culture (PSC) in the hospital's ICUs is predominantly positive, weaknesses persist, especially in the dimension of "Non-punitive responses to error" and the low frequency of adverse event reporting. These issues demand specific strategies to foster a more transparent and collaborative environment, promoting patient safety.

Institutional management plays a crucial role in strengthening PSC, especially by encouraging continuous learning practices and open communication about errors. Planning actions aimed at strengthening the neutral and weak dimensions identified in this study can contribute to consolidating safety and quality of care in hospital settings.

Furthermore, the results of this study demonstrate critical aspects for nursing practice, relating teamwork, management support, and patient safety culture in the high-complexity setting. It emphasizes the need to strengthen PSC, implement protocols, improve communication between teams, and actively involve hospital management. Likewise, investing in continuous training and creating a safe and collaborative work environment is crucial to reducing adverse events and improving the quality of care.

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1. Amanda Vitória Athayde Medeiros da Silva contributed substantially to the conception and design of the study, data collection, analysis and interpretation, manuscript writing, and final approval of the published version, assuming responsibility for all aspects of the work.
2. Emilly Nascimento Pessoa Lins contributed to the critical review of the intellectual content of the manuscript and final approval of the published version.
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5. Vânia Pinheiro Ramos contributed substantially to the conception and design of the study, interpretation of the data, critical review of the manuscript, final approval of the published version, and scientific supervision of the work.

All authors declare that they met the authorship criteria established by the ICMJE and agree with the final version of the manuscript.

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