

## PATIENT SAFETY CULTURE FROM THE PERSPECTIVE OF NURSING PROFESSIONALS

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### ABSTRACT

**Objective:** To describe the dimensions of the Patient Safety Culture, identifying strong and fragile areas in the perception of nursing professionals, in two public hospital care complexes in Rio Branco, Acre, Brazil.

**Methods:** Observational, descriptive, cross-sectional epidemiological study. Data collection took place from November 2016 to May 2017, with a sample of 290 nursing professionals, who agreed to participate in the study by answering the questionnaire entitled Hospital Survey on Patient Safety Culture (HSOPSC), created by the Agency for Healthcare Research and Quality (AHRQ), widely used worldwide to measure patient safety culture, translated, adapted and validated to Brazilian Portuguese. Data analysis was performed using descriptive statistics and the tool reliability was verified by Cronbach's alpha coefficient.

**Results:** The dimensions with the highest percentage of positive responses were: "Organizational Learning" (63%), "Teamwork within Units" (60%), "Expectations and safety actions of supervisors and managers" (54%) and "opening for communication" (54%). However, of the 12 dimensions evaluated by the questionnaire, seven had percentage below 50%, being considered fragile areas and in need of improvement. The items identified with the lowest percentage were: "Non-punitive Error Responses" (15%), "Staff" (31%), "Frequency of Reported Events" (34%), and "Feedback and Reporting Errors" (35%).

**Conclusion:** None of the dimensions reached 75% of positive responses, evidencing a need for organizational and cultural changes that promote Safety Culture in the researched institutions.

**Descriptors:** Patient safety; Safety management; Nurse practitioners

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## INTRODUCTION

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At the beginning of the 21st century, after the release of the To Err is Human report from the Institute of Medicine (IOM), the subject of patient safety (PS) became relevant[1]. This report found that about 100,000 people died each year in hospitals suffering from adverse events (AEs) in the United States (USA), where this high incidence resulted in a higher mortality rate than those attributed to HIV positive patient, breast cancer or external causes[2]. This reality has directed worldwide attention to a greater awareness and proposals for strategies in the reduction and prevention of AE in healthcare[3], which is a worldwide challenge faced the great problem related to Patient Safety[4].

In Brazil, initiatives have emerged in the field of PS, and the implementation of the National Patient Safety Program (PNSP) by the Brazilian Ministry of Health (MS) which has contributed to the qualification of health care in all national establishments, public or private health services[1].

According to the World Health Organization (WHO), patient safety is defined as the reduction, to an acceptable minimum, of the risks of unnecessary harm to health care[5]. This concept reflects the actual existence of

the potential for damage, considering the complexity of procedures and treatments(6).

The concept of safety culture (SC) has its origin in other areas, such as aviation and nuclear energy, where work is identified by complexity and risk[6]. The Ministry of Health of Brazil (MS) and the National Health Surveillance Agency (ANVISA), by means of Collegiate Board Resolution (RDC) n. 36, of July 25th, 2013, define SC as the set of values, attitudes, competencies and behaviors that determine commitment to health and safety management, replacing guilt and punishment with the opportunity to learn from failures and improve health care[7].

The Patient Safety Culture (PSC) is a basic structural indicator that enables risk and AE reduction initiatives [8] and is emerging as one of the essential requirements to prevent incidents through risk management[9].

Currently, patients increasingly demand that the care offered to them be of excellence and, for this, the creation and adequacy of safety in the care provided to them to achieve positive results becomes essential, considering that health care is complex and the

results can often be uncertain and potentially harmful[9]. Thus, PS is an essential component for the quality of health care[1]. In this context, the study aimed to describe the dimensions of the PSC, identifying its strong and fragile areas in the perception of nursing workers, in two public hospital care complexes of Rio Branco, in the State of Acre, in the Brazilian Western Amazon.

## METHOD

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Observational, descriptive and cross-sectional epidemiological study, whose data collection took place between November 2016 and May 2017, covering all inpatient units of two public hospital complexes. The first hospital complex is a regional reference in the provision of tertiary care, serving all municipalities of the state of Acre, as well as neighboring states and countries such as Peru and Bolivia. The second hospital complex provides urgent and emergency care and also has inpatient units in the specialties of medical and surgical clinic and Intensive Care Unit (ICU).

This is a convenience sample consisting of 290 nursing workers, being nurses

and technician/nursing assistants. Workers who were not employed and who worked at the institution for a period of less than six months were excluded from the research. In the data collection procedures, the professionals were invited to participate in the study in their shift and workplace, advised as to the objective and anonymity of the research and on how to fill out the questionnaire. The research project was submitted and approved by the Research Ethics Committee of the Federal University of Acre, under opinions n. 1,392,345 and 1,797,578.

The dimensions of the Safety Culture were analyzed using the self-applied questionnaire entitled Hospital Survey on Patient Safety Culture (HSOPSC), created in 2004 by the Agency for Healthcare Research and Quality (AHRQ), being a widely used tool to assess the safety culture (SC) among hospital professionals, whose work directly or indirectly affects patient care, whether health professionals or other areas, such as administrative, management, among others. The questionnaire is freely available at AHRQ's website for use and has been translated, adapted and validated to Brazilian Portuguese[8].

The HSOPSC encompasses 12 dimensions or SC factors on a multi-item scale containing 50 items in total. Of these, 44 are related to specific SC issues and six are related to personal information. Most items were answered on a five-point scale (Likert-scale type) reflecting the percentage of agreement: from "strongly disagree" [1] to "strongly agree" [5], with a neutral category "neither" [3]. Other items were answered using a five-point frequency scale: from "never" [1] to "always" [5]. In addition to assessing the dimensions of the SC, the HSOPSC tool also evaluates two outcome variables that were answered as follows: A) patient safety degree measured by a five-point scale from "excellent" [1] to "failed" [5] and B) number of events reported: how many event reports you have written and delivered in the last 12 months response categories: "none", "1 to 2 events", "3 to 5 events", "6 to 10 events" and "11 to 20 events"[8].

The percentage of positive responses represents a positive reaction regarding the PSC, allowing to identify strong and fragile areas in PS. "Strong patient safety areas" in hospitals are those in which positively written items obtained 75% of positive responses ("strongly agree" or "agree"), or those whose negatively written items obtained 75% of

negative responses ("Strongly disagree" or "disagree"). Similarly, "fragile patient safety areas" that need improvement were considered those whose items had 50% or less positive responses[8].

Data were double entered in an Excel spreadsheet and the variables classified according to the dimensions of the HSOPSC. Subsequently, the absolute and relative frequencies of each dimension were calculated and classified according to the protocol suggested by AHRQ. Regarding labor data, these were analyzed using descriptive statistics.

The evaluation of the internal reliability of the questionnaire was tested using Cronbach's alpha coefficient. The result found for all dimensions in this study was 0.84.

## RESULTS

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The labor data of the professionals participating in the research are presented in Table 1. Considering the 290 respondents, 93 (32%) were nurses and 197 (68%) were nursing technicians. Most professionals, 172 (60%), worked 20 to 39 hours per week and 78 (27%) worked 40 to 59 hours per week. Regarding the years in the profession, 85

(29%) had between six and 10 years of experience in the area.

**Table 1 - Characteristics and labor data of nursing staff according to two public hospital care complexes in Rio Branco, Acre, Brazil, 2017.**

<b>CHARACTERISTICS AND LABOR DATA</b>	<b>F</b>	<b>%</b>
<b>FIELD/ WORK UNITS</b>		
Multiple Hospital Units/ No specific units	42	15
Clinical (non surgical)	82	29
Surgical	37	13
Pediatrics	8	3
Emergency Unit	28	10
Intensive Care Unit	18	6
Other	67	24
<b>Total</b>	<b>282</b>	<b>100</b>
<b>POSITION OR FUNCTION</b>		
Nurse	93	31
Nursing Technician/ Assistant	197	69
<b>Total</b>	<b>290</b>	<b>100</b>
<b>TIME WORKING IN CURRENT SPECIALTY OR PROFESSION (YEARS)</b>		
Less than 1	14	5
1 to 5	65	22
6 to 10	85	29
11 to 15	47	16
16 to 20	21	7
Continued Table 1	57	20
21 or more	289	100
<b>Total</b>		

**CHARACTERISTICS AND LABOR DATA****F****%****TIME WORKING IN HOSPITAL (YEARS)**

<b>Less than 1</b>	21	7
<b>1 to 5</b>	84	29
<b>6 to 10</b>	83	29
<b>11 to 15</b>	21	7
<b>16 to 20</b>	17	6
<b>21 or more</b>	64	22
<b>Total</b>	290	100

**TIME WORKING IN CURRENT FIELD/ HOSPITALUNIT (YEARS)**

<b>Less than 1</b>	58	20
<b>1 to 5</b>	106	37
<b>6 to 10</b>	73	25
<b>11 to 15</b>	17	6
<b>16 to 20</b>	14	5
<b>21 or more</b>	22	8
<b>Total</b>	290	100

**WEEKLY WORKED HOURS**

<b>Less than 20</b>	4	1
<b>20 to 39</b>	172	60
<b>40 to 59</b>	78	27
<b>60 to 79</b>	29	10
<b>80 or more</b>	6	2
<b>Total</b>	289	100

Regarding the dimensions of the PSC, Table 2 presents each one with their respective definitions[10] and rate of positive responses. As can be observed from this Table, positive response rates ranged from 63% to 15%. The dimensions with the highest percentages of positive responses were: "Organizational Learning" (63%), "Te-

amwork within Units" (60%), "Expectations and safety promotion actions of supervisors and managers" and "Opening for communication" both with 54% positive responses. On the other hand, the worst rated dimensions were: "Non-punitive error responses" (15%), "Staff" (31%) and "Frequency of reported events" (34%).

**Table 2 - Definitions and percentage of positive responses, Cronbach's Alpha of each dimension of the Patient Safety Culture in two public hospital care complexes in Rio Branco, Acre, Brazil, 2017.**

Dimension	Definitions	% of positive responses	$\alpha^*$
Organizational Learning	There is a learning culture in which mistakes lead to positive change.	63%	0,59
Teamwork within Units	The workers support each other and work together as a team.	60%	0,44
Expectations and safety promotion actions of supervisors and managers	Supervisor/ manager considers the team's suggestions for PS improvement, compliments the worker who follows the procedures correctly and does not neglect PS problems.	54%	0,60
Opening for communication	Workers can freely discuss whether they do something wrong and feel free to question their supervisor.	54%	0,56
Internal transfers and passing report	Important patient care information is reported among hospital units and during shift changes.	50%	0,66
General Perceptions of Patient Safety	Existing procedures and systems are effective in preventing errors and there are no problems with PS.	41%	0,38
General Perceptions of Patient Safety	Hospital units cooperate and coordinate among them to provide the best patient care.	40%	0,54

Dimension	Definitions	% of positive responses	$\alpha^*$
General Perceptions of Patient Safety	Hospital units cooperate and coordinate among them to provide the best patient care.	40%	0,54
Hospital management support for patient safety	Hospital management offers a working environment that promotes PS.	38%	0,54
Feedback and reporting errors	Workers are informed of the errors that happen, feedback on the changes implemented, and ways to prevent errors with the team are provided and discussed.	35%	0,59
Frequency of Reported Event	Frequency that errors are reported in the various modalities.	34%	0,81
Staff	There are enough workers to perform the work effectively.	31%	0,17
Non-punitive Error Responses	Workers feel that their errors and reported events are not used against them and that errors are not written on their professional records.	15%	0,57

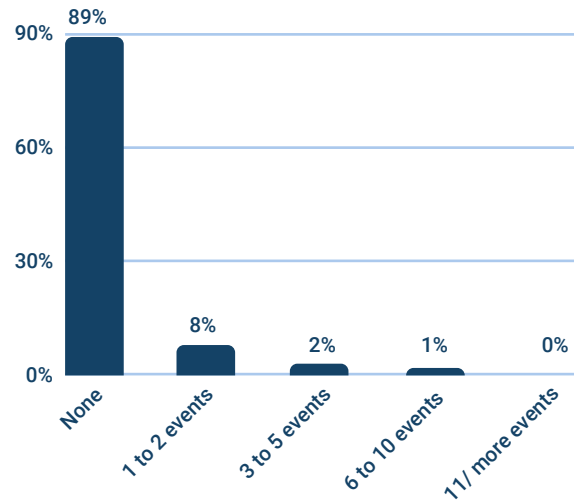
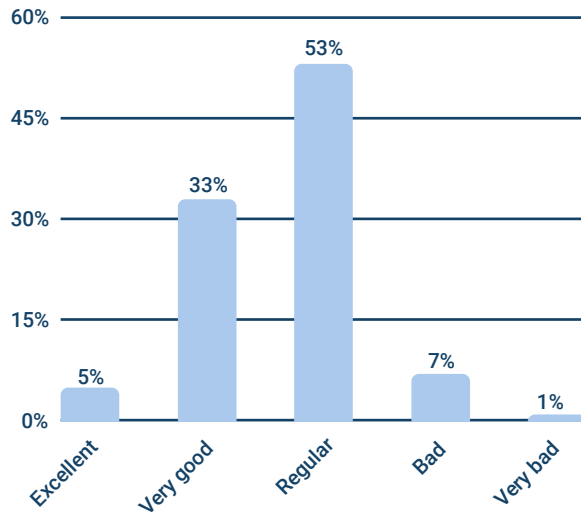
**\* Alpha Cronbach Statistics**

Regarding the first outcome variable, the data pointed that 53% and 33% of professionals rated the PS in their work unit as fair and very good, respectively (Figure 1).

As for the second item of the outcome variable, which deals with the number of re-

ported adverse events, the data pointed that most participants, that is, 89% of them did not report any adverse event, and only 8% reported having reported one to two AEs (Figure 2).





## DISCUSSION

Given the findings of this study and considering the classification of the Agency for Healthcare Research Quality (AHRQ) it was observed that no dimension can be classified as strong area (75% of positive responses). These results reveal the need for changes in the various aspects of PSC in the investigated care complexes, whose actions can be prioritized from the dimensions with the least positive evaluations[11]. However, the dimensions that presented the most positive results can be considered as potential to contribute to PSC, pointing to similarity with the findings of other studies[12-13], which used the same data collection tool.

The study points out the critical areas for PS, that is, those with 50% or less of positive responses, showing that they were predominant, totaling eight dimensions. The same dimensions were also the worst evaluated in other studies[14-15] that had the same objective and used the same data collection tool in the research.

The dimension "Non-punitive error responses" was the one that had the lowest percentage of positive responses from nursing professionals, as in other studies[4,11,13] that used the HSOPSC tool. It is considered that this result may be related to the existence of blaming culture, pointing out errors and failures as derived from individual factors resulting from inattention or lack of com-

petence[12]. Therefore, the redesign of the organizational system is central, with a fair culture that uses errors to identify weaknesses in health care, and from this assessment promote the learning of professionals, enabling safe and effective care[16].

Regarding the "Staff", it is inferred that the number of professionals is insufficient for the demand for work, being a reality in many Brazilian health institutions, considering that insufficient human resources can affect the PS, highlighting the importance of proper sizing of qualified professionals for care in hospital institutions. Regarding "Feedback and reporting errors", professionals said that AEs reports, the changes implemented in the unit and feedback rarely occur. The difficulty in perceiving risk situations by knowing what happens in the institution, prevents the proper management of care focusing on the prevention of error and the establishment of SC[11].

As for the number of events reported in the last 12 months, it was found that 89% of professionals did not make any notification in the period. This may be related to the absence of a simple and effective notification system; education programs that advise on the importance of AE reporting. The adoption of

measures that enable management support, leadership strengthening, training and capacity building, and implementation of an organization-wide patient safety program can stimulate AE reporting[17].

Limitations of the study can be attributed to the data collection tool is self-applicable, and some professionals who did it left certain items unmarked, because they did not want to answer them and/or because of lack of understanding on what was being questioned. Another aspect refers to performing it during working hours, sometimes interrupted due to the work itself, favoring the non-completion of the answers by some of the participants.

## CONCLUSION

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According to the results, no strong areas of safety culture were identified. Therefore, it is necessary to provide a work environment that values and encourages PS, centering the safety focus on the causes that led to the error rather than on the individual. There is also a need to sensitize professionals through continuing education and encourage reporting errors and AE in the health units under study.

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