

Original Article

## Patient safety culture in the intensive care unit: cross-study

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### Abstract

**Introduction:** Patient safety culture has been the reason for great concern for the scientific community due to the high number of failures resulting from the provision of health care. The objective of this study was to evaluate the perception regarding the patient safety culture and their differences between categories, in the professional teams of the adult intensive care unit (ICU).

**Methodology:** This is a cross-sectional descriptive study, with a quantitative approach, to evaluate the patient safety culture developed in the unit adult ICU of a public university hospital.

**Results:** In this survey, 138 employees of the ICU participated, among them: physicians, psychologists, nutritionists, physiotherapists, nurses, nursing technicians, and secretaries. There was a predominance of nursing technicians (76.8%) and work experience time from 5 to  $\geq$  21 years (62.3%). The overall mean of the safety culture in the ICU was 57.80, and the domains with the best average were stress perception (73.84) and satisfaction at work (72.38) and with the worst mean was the perception of hospital management (42.69). The perception of safety attitudes in the professional category of physicians presented a general average of 61.63, being strengthened to job satisfaction (77,89) and with a higher perception in relation to nurses.

**Conclusions:** The overall ICU average for the patient safety culture was less than 75, which demonstrates a team with weakened safety attitude and, in addition, low perceptions of safety attitudes based on the results of management domains, working conditions and communication failures.

**Key words:** Safety; culture; ICU.

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### Introduction

In the last decades, the world scientific community has shown high mortality rates due to failures in health care, becoming aware of the need for improvements in patient safety. In 1999, the Institute of Medicine published a report highlighting the seriousness of this safety issue, which was later disseminated (2004) by the World Health Organization, which prioritized the launch of the Alliance for Patient Safety as a strategy for Global mobilization health institutions [1,2]. The degree of complexity related to health care, especially in hospitals, requires specialized health management focused on quality and patient safety [3].

The term ‘safety culture’ was first defined in 1991 [4] and later improved globally as follows: ‘Safety culture is the lasting value and priority placed for the worker and public safety for all, in all groups and all levels of an organization’ [5].

To evaluate the safety culture in health, in quantitative research, there is a series of questionnaires,

among them Safety Attitudes Questionnaire. This evaluates the failures related to interpersonal aspects of the performance of professional teams, such as teamwork, leadership, communication, and collaboration in decision-making [6].

This study aimed to evaluate the epidemiological and occupational characteristics, as well as the perception regarding the patient safety culture and their differences between categories, in the professional teams of the adult intensive care unit of a university public hospital in Uberlândia, Brazil.

### Methodology

#### *Study population and design*

The survey is a cross-sectional descriptive study, with a quantitative approach, and was performed in the unit adult intensive care unit (ICU) of a public university hospital in central Brazil (Uberlândia), between July to August in 2016.

The study targeted 163 permanent employees of the ICU and included physician, nurse, and physiotherapist coordinators, physician assistants, physician residents, nurses, nursing technicians, physiotherapists assistants, nutritionists, psychologists, and secretaries.

The sample was recruited after review (number 1638131) by the Education and Research Committee followed by the consent of the Director of Education and Research of the public and teaching hospital and the coordinators of the ICU, medicine, nursing, and physiotherapy.

Of this population of 163 employees were invited to participate in the study 144 of them because they were active in their duties in the ICU during the collection period. These participants received an envelope containing an invitation letter for participation in the research, with the free informed consent form and the Safety Attitudes Questionnaire (SAQ), where they returned after completing the forms. It was considered exclusion criterion any incorrect or incomplete filling of the documents present in the envelope.

A sample of 138 participants (84,6% of the population) was obtained after applying the exclusion criteria, agreeing with the minimum size required for data reliability (frequency of  $50\% \pm 10$ , confidence limits of 10% and 95% confidence interval: 61 professionals).

Professionals were categorized as a physician, nurse, nursing technician, physiotherapist, psychologist, nutritionist, and secretary. In order to obtain an inferential analysis of all categories of professionals, it was necessary to group those that are in small numbers as psychologist and nutritionist, at a single category called psychologist/nutritionist.

In this sample, the SAQ was applied (Short Form 2006, adapted for Brazil) [7] as a tool in the assessment of patient safety culture. The self-administered instrument consists of two parts, the first with 41 items and the second consists of epidemiological and occupational data of participants, such as gender, professional category, ICU working time and hospital work unit. In the first part of the SAQ instrument 36 items are inserted in six domains, with the items related to the perception of management divided into hospital management and the unit, in this case in particular, of ICU. The remaining five items (14, 33–36) belong to the specific domain, and items 2, 11, and 36 are reverse.

The score of each item is performed according to Likert's five-point scale, ranging from 'totally disagree' to 'completely agree'. So the order of scoring is: totally disagree (A): 0 points; partially disagree (B): 25 points; neutral (C): 50 points; partially agree (D): 75 points,

and totally agree (E): 100 points. The score ranges from zero to 100, where zero is the worst perception and 100 the best, being considered positive values when the score is greater than or equal to 75 [7,8]. The item could be canceled by marking the letter 'X' when the interviewee thought that the question did not apply to the ICU in question.

### *Statistical analysis*

Descriptive analysis of the SAQ questions of the 138 participants was performed by means of the Likert scale responses after inversion of the reverse items (2, 11 and 36), in order to summarize the data set obtained. The mean value of the quantitative variables and the proportion of the qualitative variables was calculated. The items of the instruments were analyzed by domain/dimension and as a complete scale by averages according to the population distribution.

Cronbach's alpha was used to assess the internal consistency in each of the six domains. Cronbach's alpha estimates showed good internal domain reliability, ranging from 0.776 to 0.793 for SAQ domains, with  $\alpha > 0.70$  being considered acceptable [8,9].

Data analysis and statistical tests were performed with the Statistical Package for the Social Sciences (SPSS) for Windows, version 21.0. Inferential analysis was done by ANOVA with Tukey post hoc test. The normality of the variables was determined by the Shapiro-Wilk test. The significance level ( $\alpha$ ) of 5% was adopted for all analysis.

The perception of the safety culture of the patient in each professional category was performed in the mean of domains and items without domains of each profession and then compared among the categories, with considerable variations observed from one group to another.

## **Results**

The adult ICU of a public university hospital in Uberlandia, Brazil, includes 163 permanent professionals from the specific category of physician, nurse, nursing technician, physiotherapist, psychologist, nutritionist, and secretary. Of this total, 144 employees were invited to participate in this research because they were active in their duties during the collection period from July to August 2016. There was only 1 refusal to complete the envelope forms and validated 138 SAQ questionnaires because they were duly filled out, which results in a validation rate of 96.5%. The 138 SAQ questionnaires were distributed by professional category, according to Table 1. In this

**Table 1.** Distribution of frequency and percentage as to the professional class in the intensive care unit.

Categories	Frequency (n)	Percentage (%)
Physician	29	21.0
Nurse	23	16.7
Nursing technician	67	48.6
Physiotherapist	6	4.3
Secretary	9	6.5
Psychologist/nutritionist	4	2.9
<b>Total</b>	<b>138</b>	<b>100.0</b>

table, it is observed that nursing technician represents the largest number of participants, followed by physician and nurse.

The overall average of the patient safety culture in the ICU, obtained through the analysis of the responses on the Likert scale after inversion of the reverse items (2, 11 and 36), was lower than 75 (57.80), according to Table 2. And the domains satisfaction at work (72.38) and perception of stress (73.84) had the highest scores and the domain perception of hospital management (42.69) and item without domain communication failures (32.72) had the worst results.

In addition to this descriptive analysis, the analysis of variance (ANOVA) of the means obtained between professional categories and domains and items without domain of the SAQ questionnaire was performed, and statistically significant differences were observed ( $p < 0.05$ ) for multiple comparisons, as demonstrated in Table 3.

All professional categories had a high perception of stress in the ICU environment, with no statistically significant difference ( $p > 0.05$ ) among the professional categories.

In the analysis of the overall average of the domains and items without domains by professional category it was observed that the physiotherapist followed by the physician presented the best results, 71.03 and 61.63 respectively. The physician was strengthened to job satisfaction (77.89) and physiotherapist to job

satisfaction (89.17) and teamwork climate (75.64). These professional categories had high averages, with a statistically significant difference ( $p < 0.05$ ), in relation to nurses in the overall average and in the domains teamwork climate, job satisfaction and working condition.

The nurse and nursing technician showed an overall average for a safe attitude with the patient of 48.58 and 57.73, respectively. The overall average for domains and items without domains was higher in nursing technician than in nurse, with a statistically significant difference ( $p < 0.05$ ), as well as in the domains of teamwork climate and job satisfaction. The nurse presented the worst mean in the item without domain communication failures (22.82), with a statistically significant difference ( $p < 0.05$ ) in relation to the physiotherapist.

The psychologist/nutritionist category presented an overall average for a patient's safety attitude of 53.88, being lower and statistically significant ( $p < 0.05$ ) in relation to the physiotherapist. The best average for the collaboration between members of the care team (77.08) and the worst mean for perception of hospital management (20.00), with a statistically significant difference ( $p < 0.05$ ) in relation to the physician, nursing technician, and physiotherapist.

The secretary presented an overall average of 56.3, in the domains and items without domains, being lower and with a statistically significant difference ( $p < 0.05$ )

**Table 2.** Distribution of means of the safety culture according with domains and items without domains.

Domains	Number	Mean	Standard deviation
Teamwork climate	138	69.37	16.59
Safety climate	138	55.87	17.54
Job satisfaction	138	72.38	19.63
Stress perception	138	73.84	24.67
Perception of unit management	138	57.14	24.20
Perception of hospital management	138	42.69	22.81
Working condition	138	49.78	23.79
Items without domains	Number	Mean	Standard deviation
Worker perception (item 14)	138	52.81	31.93
Collaboration between members of the care team (33 a 35)	138	69.71	22.68
Communication failures (36)	138	32.72	29.42
<b>General total</b>	<b>138</b>	<b>57.80</b>	<b>23.39</b>

in relation to the physiotherapist. And the best mean for domain job satisfaction (70.00) and the worst mean the item without domain communication failures (36.11). It presented a low average for working condition (47.92) with a statistically significant difference ( $p < 0.05$ ) in relation to the physiotherapist.

No statistically significant difference ( $p > 0.05$ ) was detected between the professional categories in safety climate, stress perception, worker perception, and collaboration between members of the care team.

**Discussion**

The evaluation of the patient's safety culture in the adult ICU of a public university hospital in Uberlandia, Brazil, was performed using SAQ, an instrument that presents excellent psychometric properties and is valid, reliable and widely used to investigate multiple dimensions of culture hospital and outpatient clinic level [6].

In this study, the internal consistency of SAQ was appropriate, as found in other studies [8,9]. And, the results indicate that the overall mean of the domains needs to be improved, although some domains have a satisfactory score in some categories. professionals, and these are now convergent or divergent when compared with data published in the literature [10,11]. These variations in results stem from cultural and organizational aspects related to patient safety [10,11].

A medical error in the ICU requires appropriate handling through systematic recognition, reporting,

analysis, and interpretation [12] followed by a learning culture, from these errors, with resolution of interprofessional communication problems [10].

Regarding the professional category, the literature review presented a frequency of nursing professionals ranging from 41.6% to 82% [13-19]. Patterson *et al.* (2010) observed equal proportions between physicians and other health of professionals. This study agrees with most of the data in the literature that shows predominance of nursing professionals (65.3%) [20].

The scores of the attitudes questionnaire above 80 reflect health care harmonious environments for the work, satisfaction of the team in performing their functions and positive attitudes towards a safety climate. On the other hand, levels below 60 indicate a great concern and a strong need to implement measures to promote safety culture in the institution environment [21]. There was variation in the literature regarding positive attitudes averages ranging from 73.5 to 86 [15,22] and negative attitudes with averages ranging from 46.4 to 65.7 [7,10,23]. In this study, the average response to the SAQ questions by professionals was not strengthened (57.80) due to levels below international recommendations for a positive perception of safety culture.

Some authors have shown variations in perceptions of safety attitudes between professionals, reporting better safety attitudes among caregivers who are at the top of the hierarchy of organizations [24]. According to these affirmations, it is verified in this research that

**Table 3.** Average of distribution and standard deviations of the professional categories for each domain.

Domains and items without domain	Physician	Nurse	Nursing technician	Physiotherapist	Psychologist / nutritionist	Secretary
	$\bar{X} (\pm SD)$	$\bar{X} (\pm SD)$	$\bar{X} (\pm SD)$	$\bar{X} (\pm SD)$	$\bar{X} (\pm SD)$	$\bar{X} (\pm SD)$
Teamwork climate	74.71 ( $\pm 15.18$ ) a	59.96 ( $\pm 19.04$ ) b	69.45 ( $\pm 14.49$ ) a	75.64 ( $\pm 16.89$ ) a	73.92 ( $\pm 21.59$ ) ab	69.44 ( $\pm 20.62$ ) ab
Safety climate	58.96 ( $\pm 20.21$ ) a	49.61 ( $\pm 17.96$ ) a	56.31 ( $\pm 15.68$ ) a	58.33 ( $\pm 19.92$ ) a	63.39 ( $\pm 24.81$ ) a	53.64 ( $\pm 16.07$ ) a
Job satisfaction	77.89 ( $\pm 20.64$ ) a	59.56 ( $\pm 19.30$ ) b	73.50 ( $\pm 16.17$ ) a	89.17 ( $\pm 13.20$ ) a	67.50 ( $\pm 31.22$ ) ab	70.00 ( $\pm 25.00$ ) ab
Stress perception	75.28 ( $\pm 25.22$ ) a	68.66 ( $\pm 22.77$ ) a	73.09 ( $\pm 26.15$ ) a	82.50 ( $\pm 22.27$ ) a	75.00 ( $\pm 26.51$ ) a	82.64 ( $\pm 17.89$ ) a
Perception of unit management	66.98 ( $\pm 26.65$ ) a	48.35 ( $\pm 21.68$ ) b	55.28 ( $\pm 22.35$ ) b	66.25 ( $\pm 23.44$ ) ab	38.75 ( $\pm 25.29$ ) b	57.50 ( $\pm 32.40$ ) ab
Perception of hospital management	44.54 ( $\pm 22.43$ ) ac	38.20 ( $\pm 19.90$ ) ab	43.41 ( $\pm 22.75$ ) ac	64.00 ( $\pm 16.73$ ) c	20.00 ( $\pm 21.60$ ) b	41.11 ( $\pm 28.15$ ) abc
Working condition	58.18 ( $\pm 22.01$ ) ac	42.66 ( $\pm 24.33$ ) bd	48.26 ( $\pm 22.39$ ) cd	73.96 ( $\pm 18.71$ ) a	23.44 ( $\pm 24.14$ ) b	47.92 ( $\pm 24.20$ ) bc
Worker perception (item 14)	55.17 ( $\pm 38.02$ ) a	51.04 ( $\pm 31.44$ ) a	54.46 ( $\pm 30.73$ ) a	74.67 ( $\pm 21.91$ ) a	68.50 ( $\pm 47.10$ ) a	41.67 ( $\pm 27.95$ ) a
Collaboration between members of the care team (33 a 35)	68.39 ( $\pm 24.94$ ) a	67.75 ( $\pm 21.80$ ) a	71.27 ( $\pm 22.53$ ) a	71.66 ( $\pm 24.01$ ) a	77.08 ( $\pm 17.18$ ) a	62.96 ( $\pm 23.61$ ) a
Communication failures (36)	36.20 ( $\pm 26.38$ ) ab	22.82 ( $\pm 24.90$ ) a	32.31 (30.85) ab	54.17 ( $\pm 36.80$ ) b	31.25 ( $\pm 12.50$ ) ab	36.11 ( $\pm 35.60$ ) ab
<b>Total medium by professional</b>	<b>61.63 (<math>\pm 24.17</math>)</b> ac	<b>48.58 (<math>\pm 22.31</math>)</b> b	<b>57.73 (<math>\pm 22.41</math>)</b> c	<b>71.03 (<math>\pm 21.39</math>)</b> a	<b>53.88 (<math>\pm 25.19</math>)</b> bc	<b>56.30 (<math>\pm 25.15</math>)</b> bc

Different letters of the alphabet, in line with the table, is the statistical difference ( $p < 0.05$ ) between perceived attitude of professionals;  $\bar{X}$  = Mean; SD= Standard Deviation.

there was a better perception of the patient safety culture in the category of physician and physiotherapist in relation to other professionals.

Regarding the analysis of the means of SAQ score for domains and items without domains, were observed many points of weakness in the safety culture, demonstrating the possibilities for changes to suit the quality of care provided in this adult ICU this university public institution.

The teamwork climate understands the quality of collaboration and communication between care providers aiming at teamwork, mutual respect among professionals, open communication, and exchange of valuable information [6,10]. Literature findings showed an average ranging from 58.3 to 85.6 [6,14-17,24-27]. This research obtained an average of positive attitudes for a teamwork climate among the ICU professionals of this public hospital (69.37) like the literature. Although the average is below ideal, it demonstrates a tendency for professionals to collaborate with the work within the unit's standards with experience and respect within the team. It was observed that physician, nursing technician, and physiotherapist had better averages than nurse. In addition, the physician presented greater perception for collective work than the nurse and the nursing technician, suggesting the need for adjustments in the relationships between the different professionals in the work environment.

Within this context, it was observed that communication quality obtained an average of negative perception (32,72), demonstrating many failures in patient-related information exchanges among caregivers.

The Safety Climate evaluates the professionals' perception regarding the organizational commitment, the provision of safe care and the security promotions with error and incident management system, aiming the commitment to the unit, and creating a reference to the employee for your work environment [6]. Numerous studies presented mean perception ranging from 48.9 to 83.5 [7,11,14,17,23,26].

This research obtained a low average (55.87) and similar among professionals, coinciding with the values found in the literature. These data demonstrate the need for the ICU sector to effectively work on patient safety through disclosure of protection programs, the commitment of professionals to the unit, the collection of checklists through each procedure for safe care delivery, identifying errors and incidents.

Job satisfaction domain corresponds to the well-being of professionals in the work environment with personal motivation and love of the profession [6-10],

directly influencing the safety culture with a lower incidence of adverse effects [12]. Studies show variation of averages in this area in the national literature from 75.0 to 77.6 [7,23] and in the international literature from 65.6 to 86.1 [10,14,17,26].

This article presented an appropriate overall average for the job satisfaction domain (72.38), approaching positive perceptions and consistent of the literature data. There were statistically significant difference ( $p < 0.05$ ) in the averages of the categories of physician, nursing technician and physiotherapist in relation to the nurse.

These data demonstrate that the ICU has an environment clearly favorable to operational objectives, so most professionals show satisfaction at work, with some careers more accomplished than others.

Stress Perception is a domain that recognizes the error influenced by the fatigue of long working hours, by the employees active in work with psych emotional disorders and by the inexperienced and super confident workers exposed to urgency and emergencies [6,10].

This stress perception domain is considered controversial, since it evaluates the responder's self-behavior, differing from the other items on the SAQ scale that focus mainly on peer behavior and attitudes and their effects on the safety climate [28]. Therefore, some authors believe that it does not contribute positively to the construction of the security environment as intended and should be excluded from the SAQ [25,29].

A stressful event is any situation that frightens, confuses, or excite a person [30]. The hospital environment can be an important stressor for healthcare professionals because they deal directly with patients who are critically ill and at elevated risk of death. In addition, other factors contribute to the increase of stress, such as working conditions (demands for assistance, devaluation and lack of professional autonomy, work overload, double work with low pay and repetitive work), conflict in teamwork, lack of training to deal with the frequent changes in the technological arsenal and the attention and responsibility required in the working period [31,32].

Among the health professions that present a higher stress index, nursing and medicine stand out due to their work characteristics. Nursing is the fourth most stressful profession in the public sector, due to lack of working conditions, cultural conflicts in teamwork, excessive oppression of the environment and lack of social recognition [33].

The concept that people make the right decisions regardless of whether they are under stress (such as:

fatigue, work overload, stress, pressure, and sleep deprivation) is not accurate as these situations decrease performance and increase the occurrence of errors in health care [17,26,34].

Stress perception domain presented, in the literature, an average variation of 52.2 to 82.8 [7,10,11,14,17,23,26,28].

The adult ICU under analysis is a unit of the tertiary hospital of a public educational institution in the central region of Brazil, so it receives many patients of high severity that require the personal and emotional effort of the professionals of this sector. This research demonstrated, for this domain, a high average (73.84) in relation to the other domains, coincides with literature data. The averages and perceptions of stress were similar confirming the uniformity of thinking among professionals who consider the work environment very stressful.

The domain perception of management divided into unit and hospital is considered positive among professionals when the decisions of the managers are favorable to the actions regarding the team, patient safety, leadership, and human resource management [10]. The contrary situations point to relationship difficulties in the relationship between professionals and managers, with irregularities in the practice of the sector corrected with warnings and punishments, besides not dealing with patient safety issues [16].

The overall average of the management's perception is modified according to the management model of each scenario, ranging from 48.0 to 78.8 [10,11,17,26-28] and the average for specific management of the unit ranged from 44.5 to 47.02, and of the hospital ranged from 34.4 to 53.4 [7,14,23], in these citations.

This study showed that the perception of hospital management obtained a very low average (42.69) with a statistically significant difference ( $p < 0.05$ ) in the average psychologist / nutritionist compared to the physician, nursing technician, physiotherapist and nurse in relation to the physiotherapist. These data indicate that the managers in question did not play a satisfactory management role for ICU staff, probably because of the lack of consistent attitudes towards hospital needs and patient safety.

Regarding the perception of unit management domain, a negative perception (57,14) was also observed, with a more satisfactory average of the physician in relation to the nurse, nursing technician and psychologist/nutritionist. These results may be reflecting the actions of managers of the unit where it brings ingrained old methods of punishment with

warning to the errors and impositions in the relationship between the professionals and the managers.

Working Conditions is a domain of the SAQ that is positive when the professionals support the level of supervision, training of personnel, management of people, availability of resources to the quality of the work environment and equipment in good conditions [6,10]. This domain had a mean variation of 41.9 to 81.3 in the cited references [10,11,14,17,20,23,26-28].

The researchers' findings showed a negative perception in the working conditions (mean 49.78), with a statistically significant difference ( $p < 0.05$ ) in the mean of the physician in relation to the nurse and psychologist / nutritionist; of the nursing technician in relation to the psychologist / nutritionist; and the physiotherapist in relation to the nurse, nursing technician, psychologist / nutritionist and secretaries.

Although this ICU has a modern and well-equipped environment, with conditions for professionals to perform an excellent job, hospital management may be contributing negatively to the functional performance and conservation of the public good among health professionals.

The opposite analysis, i.e. a positive perception for working conditions observed by physiotherapists, maybe because the ICU offers a lot of support in the performance of these professionals with modern equipment and professional status, in an environment where they are much required by the high demand of patients severely diseased, mostly intubated and mechanically ventilated.

Communication failures, an item without SAQ domain, is extremely important since the limitations in perception generate risks to the patient and may be the main cause of adverse events [35].

Based on highly complex organizations, with an efficient and quality communication policy, the need for similar transformations has been observed in the health area, developing and implementing management resources that standardize communication and teamwork, to minimize the risks of errors in health care [35,36,37].

Although health care is more complex and depends on teamwork in different professional categories, health quality and safety have been observed individually in the categories of professionals, which characterizes the risk of errors associated with health care [36]. Therefore, effective communication and satisfactory teamwork are essential for quality medical care and patient safety culture [35,37].

This research showed a deficiency in communication between the team members with a

much lower average level and tolerable (mean of 32.72), with statistically significant differences ( $p < 0.05$ ) in the average physiotherapist in relation to the nurse.

## Conclusion

In conclusions, we observe the SAQ instrument provided a snapshot of the safety culture of the adult ICU of this university hospital in the central region of Brazil, obtaining an overview of the issues related to the perceptions of attitudes of professionals of distinct categories and the points that they require settings. The general perception of this ICU regarding the safety culture of the patient was low, being clarified by the individual analysis of the domains and non-domain items of the SAQ. Items that favors the vision of the strengths and weaknesses of the attitudes of the safety team. In fact, this analysis of domains and items without domains showed weakened for management perception, working conditions and communication failures, which have hampered the harmony and balance of this sector of the hospital. These findings are based on the fact that the domains working conditions and communication failures are consequences of managers' attitudes, since they dictate the sector's guidelines, such as: promotion of safety culture, employee confidence and learning culture with strategies proactive. Therefore, management's attitudes are responsible for determining human working conditions and freedom of communication of the occurrences of the sector by promoting learning without reprisals or warnings. We noticed that the perceptions of safety attitudes were positive for physicians and physiotherapists in relation to other professionals, because they showed satisfaction in the work and the climate of strengthened teamwork. These data seem to be based on personal motivation, love for the profession, mutual respect of the teams and ability to communicate. Finally, it was clearly demonstrated in this study that the construction of the safety culture of this ICU was based on local and cultural characteristics, as well as the influence of intrinsic and extrinsic factors on the intensive care environment, thus determining strengths and weaknesses of attitudes of the unit's work team.

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