

Safety culture in a maternal intensive care unit

Cultura de segurança em unidade de terapia intensiva materna

Cultura de seguridad en una unidad de cuidados intensivos maternos

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ABSTRACT

Objective: to identify the patient safety culture in a maternal intensive care unit as seen by the healthcare team. **Method:** in this survey study approved by the research ethics committee, data were collected using the Hospital Survey on Patient Safety Culture and analyzed using descriptive statistics. The culture dimensions were classified as strong, neutral or weak. **Results:** one dimension was found to be strong, four neutral, and six weak. "Unit teamwork" returned the highest percentage of positive responses, while the lowest-scoring dimension was "Event notification frequency". **Conclusion:** the patient safety culture in the maternal intensive care unit was considered weak, pointing to the need to provide safer care to pregnant and postpartum women requiring intensive care.

Descriptors: Intensive Care Units; Hospitals, Maternity; Nursing; Patient Safety; Organizational Culture.

RESUMO

Objetivo: identificar a cultura de segurança do paciente em uma unidade de terapia intensiva materna, na perspectiva da equipe de saúde. **Método:** estudo do tipo survey, aprovado pelo Comitê de Ética em Pesquisa, que utilizou o instrumento *Hospital Survey on Patient Safety Culture* para coleta de dados. Os dados foram analisados mediante estatística descritiva e as dimensões da cultura foram classificadas em forte, neutra e frágil. **Resultados:** identificou-se uma dimensão forte, quatro neutras e seis frágeis. A dimensão com maior percentual de respostas positivas foi "Trabalho em equipe dentro da unidade", já a com menor percentual foi "Frequência de notificações de eventos". **Conclusão:** a cultura de segurança do paciente na unidade de terapia intensiva materna foi considerada frágil, apontando para necessidade de prestação de cuidados com maior segurança as gestantes e puérperas que necessitam de cuidados intensivos.

Descritores: Unidades de Terapia Intensiva; Maternidades; Enfermagem; Segurança do Paciente; Cultura Organizacional.

RESUMEN

Objetivo: identificar la cultura de seguridad del paciente en una unidad de cuidados intensivos maternos, desde la perspectiva del equipo sanitario. **Método:** estudio por encuesta de opinión (*Survey*), aprobado por el Comité de Ética de la Investigación, que utilizó el instrumento *Hospital Survey on Patient Safety Culture* para la recolección de datos. Los datos se analizaron por medio de una estadística descriptiva y las dimensiones de la cultura se clasificaron en fuerte, neutra y frágil. **Resultados:** se identificaron una dimensión fuerte, cuatro neutras y seis frágiles. La dimensión cuyo porcentaje de respuestas positivas fue más alto: "Trabajo en equipo dentro de la unidad"; mientras que la dimensión cuyo porcentaje fue más bajo fue: "Frecuencia de las notificaciones de eventos". **Conclusión:** la cultura de seguridad del paciente en la unidad de cuidados intensivos maternos se consideró frágil, lo que apunta hacia la necesidad de proporcionar una atención con mayor seguridad a las mujeres embarazadas y puérperas que requieren cuidados intensivos.

Descritores: Unidades de Cuidados Intensivos; Maternidades; Enfermería; Seguridad del Paciente; Cultura Organizacional.

INTRODUCTION

It is known that the period encompassing the pregnancy-puerperal cycle carries with it a combination of expectations and consolidation of dreams and joys and, although not uncommon, it can even cause sadness in the family and health professionals, as undesirable situations generated by the professionals' performance, whether due to malpractice, imprudence and/or negligence, expose the mother-child dyad to health impacts¹.

In an attempt to ease this process, Patient Safety (PS) has been widely debated in various health scenarios, with the objective of institutionalizing best practices in patient care environments², aiming at reducing the risk in obstetrics, a complex issue that deserves attention, in addition to allocation of significant resources, including development of effective PS and quality improvement programs in relation to the assistance provided³.

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It is in this context that the Patient Safety Culture (PSC) emerges, characterized by open communication, teamwork, recognition of reciprocity, continuous learning from notifications/reports of events and primacy of safety as a priority at all levels of an organization⁴. It is noted that promoting the PSC is an important step to improve safety in maternity hospitals and in other environments, as it can serve both for situational diagnosis and as an instrument to measure the effects of the interventions performed⁵.

Currently, there are two instruments validated in the Brazilian hospital context to assess the PSC, namely: the *Hospital Survey on Patient Safety Culture* (HSOPSC) and the *Safety Attitudes Questionnaire* (SAQ)⁶. SAQ assesses six PSC dimensions, while HSOPSC evaluates 12 dimensions, which was the reason for choosing this instrument in the current study.

Considering the obstetric hospital context, several complications are indicative for ICU admission, the main ones being those related to hypertensive and hemorrhagic syndromes, as well as heart diseases, sepsis and puerperal infections^{7,8}. In addition, in the face of such situations, at the emergence of any irregular change that characterizes an obstetric complication during the pregnancy-puerperal cycle, it becomes necessary to recognize the warning signs and to provide adequate and timely care, pillars that are fundamental for PS⁹.

Given the above, the following research question emerged for the study: Which is the PSC level in a Maternal Intensive Care Unit (MICU) from the perspective of the multiprofessional health team? And the following objective was outlined to answer this question: to identify the PSC level in an MICU, from the perspective of the multiprofessional health team.

METHOD

This is a study of the Survey type, conducted in the MICU of a teaching maternity hospital from the state of Alagoas. This maternity hospital provides exclusive care through the Unified Health System, has five beds, and is the only maternity hospital in the state with an exclusive Intensive Care Unit for pregnant and puerperal women. It is noted that the maternity hospital has a Patient Safety Center comprised by two female professionals: a nurse and a nursing technician.

The population consisted in 50 professionals from the multidisciplinary health team, namely: nurses, physiotherapists, physicians and nursing assistants/technicians. The sample was intentional and non-probabilistic, and the following inclusion criteria were used: professionals who provided direct care to the patients, admitted and allocated to the sector for at least three months, and who worked at least 12 hours a week. Professionals on sick leave and those who were working in the Home Office modality due to the COVID-19 pandemic were excluded, as well as those on vacation during the data collection period and residents of the aforementioned professional categories, for having worked less than three months in the sector. After analyzing the inclusion criteria, ten professionals were excluded and the final study sample consisted of 40 professionals.

The instrument used for data collection was HSOPSC, Brazilian version, which is self-administered and contains 61 items distributed in 12 PSC dimensions, in addition to items that assess the sociodemographic and professional characteristics¹⁰. Such dimensions can be seen in Figure 1.

HSOPSC dimensions
D1- Teamwork within units
D2- Supervisor expectations and actions promoting safety
D3- Organizational learning - Continuous improvement
D4- Feedback and communication about errors
D5- Communication openness
D6- Staffing
D7- Non-punitive response to errors
D8- Management support for patient safety
D9- Teamwork across units
D10- Handoffs and transitions
D11- Overall perception of patient safety
D12- Frequency of events reported

Figure 1: Patient safety culture dimensions from Hospital Survey on Patient Safety Culture (HSOPSC). Adapted by the researchers¹⁰.

Each of the HSOPSC dimensions includes three or four items, evaluated on a five-point Likert-type answer scale, in order to assign numerical values to the answers given by the study subjects, with answer categories in terms of agreement level or based on a frequency scale.

The instrument also includes two outcome variables: the first, “Patient Safety Score”, which is characterized as excellent, very good, fair, poor and extremely poor; and “Number of adverse events reported/notified in the last 12 months”.

The sociodemographic and professional variables evaluated were as follows: gender, age, professional category, direct contact with the patient, working time in the hospital, working time in the unit, weekly hour load, working time in the current profession/specialty and instruction/schooling level. It is also noted that the instrument has a section, which is an optional item, where space is provided for the participants to leave their comments about patient safety, which was not considered in this study.

Data collection took place in April 2021 in the professionals' workplace and by means of the printed instrument. After explaining the research objectives and the participation modality, the professionals were invited to take part in the study, handing them in an envelope containing one copy of the HSOPSC instrument and two copies of the FICF.

After collecting the data, they were double-typed into a *Microsoft Excel*[®] spreadsheet and, subsequently, the relative frequency of each dimension was calculated and classified. The AHRQ guidelines were followed, which include a combination of the two highest answer categories (I strongly agree/I agree and Almost always/Always) for the positively worded items and the two lowest answer categories (I strongly disagree/I disagree and Never/Rarely) for the negatively worded or reversed items. Subsequently, the percentage of each item was calculated and analyzed as follows: the dimensions in which at least 75% of the participants gave positive answers were considered strong areas for the PSC. The areas with potential for improvement (weak) were identified as those with less than 50% of positive answers; and the neutral areas, as those with answer percentages from 50% to 75%¹¹.

In turn, the sociodemographic and professional data were analyzed using descriptive statistics, with determination of the absolute and relative frequencies.

Resolution No. 466/2012 of the National Health Council was respected and the research protocol of this study was evaluated and approved by a Research Ethics Committee. The professionals who agreed to participate in the research signed the Free and Informed Consent Form, which contained all the necessary information about the research.

RESULTS

The study participants were 40 professionals that work in the multiprofessional health team. There was predominance of female participants (92.5%) and of individuals aged between 40 and 49 years old (67.5%) and 50 years old or more (25.0%), respectively. Regarding the professional categories, 47.5% were nursing assistants and technicians, followed by physicians (20%), physiotherapists (17.5%) and nurses (15%). When analyzing the instruction level, it was observed that 47.5% were graduates at the specialization level and that 25.0% had completed the Master's and PhD graduate levels.

In relation to the working time in the maternity hospital, 67.5% had between 16 and 20 years of experience; in turn, regarding the working time in the MICU, 60% had worked in it from 16 to 20 years. It was also noticed that 90% worked nearly from 20 to 39 weekly hours in the sector under study, with a regime of 12-hour shifts for every 36 hours of rest. In relation to the working time in the specialty, it is from 16 to 20 years in 47.5% of the participants, followed by 35% with 21 years or more.

The data related to the negative, neutral and positive answers to all 12 safety culture dimensions are presented in Table 1.

When analyzing the positive, neutral and negative answers to the 12 PSC dimensions, it was observed that one dimension was classified as a strong area, four as with potential for improvement, and six as weak.

The dimensions with the highest percentages of answers were the following: Teamwork within the unit (80.0%), Supervisor expectations and actions promoting patient safety (73.7%) and Organizational learning (65%), despite the last two having been classified as with potential for improvement. The dimensions with the lowest percentages were as follows: Frequency of events reported (29.9%), Management support for patient safety (30.9%) and Teamwork across units (32.5%).

Table 1: Percentage values of the negative, neutral and positive answers to all 12 Patient Safety Culture dimensions in a Maternal Intensive Care Unit, from the perspective of the multiprofessional health team (n=40). Maceió, AL, Brazil, 2021.

Dimension	Negative (%)	Neutral (%)	Positive (%)
Teamwork within the unit	10.6	9.4	80.0
Supervisor expectations and actions promoting safety	13.8	12.5	73.7
Organizational learning - Continuous improvement	14.1	20.9	65.0
Feedback and communication about errors	32.5	34.2	33.3
Communication openness	16.7	19.2	64.1
Staffing	29.4	11.3	59.3
Non-punitive response to error	40.0	25.0	35.0
Management support for patient safety	42.5	26.6	30.9
Teamwork across units	43.1	24.4	32.5
Handoffs and transitions	29.4	16.9	53.7
Overall perception of patient safety	38.1	16.9	45.0
Frequency of events reported	50.5	19.6	29.9

The patient safety score can be assigned according to a Likert-type scale, as per the data presented in Figure 2.

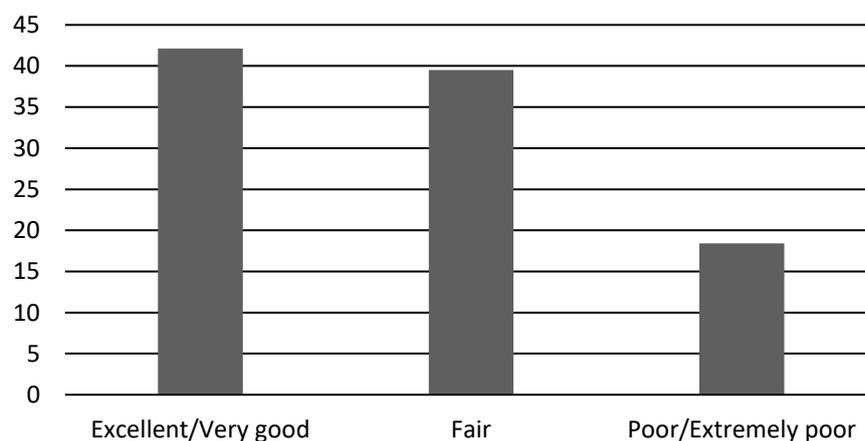


Figure 2: Patient safety culture score in a Maternal Intensive Care Unit, from the perspective of the multiprofessional health team (n=38). Maceió, AL, Brazil, 2021.

It was verified that 42.1% and 39.5% of the participants assessed patient safety in their unit as excellent/very good and as fair, respectively.

Regarding the number of adverse events reported in the last 12 months, most of the participants answered “no notification” (77.5%), followed by 22.5% that reported notifying “from one to five” events.

DISCUSSION

The results found in this study revealed a weak PSC in most of the dimensions, as only the “Teamwork within the unit” dimension obtained $\geq 75\%$ of positive answers. Similarly, a national survey carried out with the health team of a General Intensive Care Unit from southern Brazil identified weaknesses in most of the PSC dimensions¹². This denotes the extent to which the PSC, despite being recognized as fundamental for care quality and currently constituting a National Policy instituted through Ordinance No. 529 of April 1st, 2013, is not yet incorporated in the institutions that provide health services¹³.

It is worth noting that, even if most of the dimensions were considered weak, the team evaluates patient safety in the unit as excellent/very good. This can be an indication that the team is unaware of the weaknesses in their work processes.

At the same time, it was noticed that that the team has ample experience and academic qualifications. It is noticed that this does not guarantee appropriation of the PSC, although it can be considered as a strength for its development, linked to actions that may be developed by the supervisors and the senior management, such as permanent education for the team.

The “Teamwork within the unit” dimension was evaluated as strong in the MICU, revealing good cooperation for working together, contributing to providing care with shared responsibility and corroborating a study carried out at a teaching hospital in the city of Porto, Portugal, which presented teamwork as a strong dimension for PSCP¹⁴.

Following the order of the best evaluated dimensions, “Supervisor expectations and actions promoting patient safety” and “Organizational learning” obtained 73.7% and 65% of positive answers, respectively. The first one analyzes whether supervisors and managers consider the professionals' suggestions to improve safety, recognizing and encouraging their participation in the improvements; and the second evaluates whether there is learning from errors that lead to positive changes and the effectiveness of the changes implemented¹⁵, as it is known that the learning process can make professionals act with more security and confidence, mainly when providing care to critically-ill and unstable patients¹⁶.

The “Communication openness” dimension obtained 64.1% of positive answers, being characterized as in the midst of an improvement process. Effective communication among professionals is a topic that should be widely discussed, mainly in a critical care environment, which is characterized as complex both due to severity of the patients and to the use of light and hard technologies¹⁷. An institutional organization with accessible communication for dialog on safety offers freedom to the professionals to identify and prevent problems that could result in missed or delayed care. It is believed that a management committed to promoting safety facilitates communication between the team members¹⁸, providing greater interaction and response to the contexts presented.

The “Staffing” dimension obtained 59.3% of positive answers, indicating that the institution has been seeking strategies to improve the professional staff within the MICU, which becomes important for providing safe care to the patients, consequently reducing the workload of the professional categories that may be overloaded and can interfere in the PSC process¹⁹.

The “Handoffs and transitions” dimension obtained 53.7% of positive answers. The diverse information about the patients' history, as well as their clinical status, support the professional in the elaboration of a specific care plan for each patient's needs, which enhances care quality²⁰. The patients admitted to an ICU are more prone to possible hospital complications, which can be linked to their critical condition or to errors during care assistance. Some situations, such as handoffs, can generate errors and even AEs, due to inattention when sharing diverse information necessary for patient care; in addition to that, it is known that adequate transfer of the information related to the patients in intensive care is essential in continuity of safe assistance^{12,21}.

Regarding the “General perception about patient safety” dimension, which involves the institutional work processes in effective error prevention, it proved to be a weak area, corroborating a study carried out in a medium-sized philanthropic hospital, where it was evidenced that this dimension was one of the weakest among the 12 dimensions evaluated by HOSPSC²².

The “Non-punitive response to error” obtained 35% of positive answers, being characterized as weak in the MICU. This weakness discourages error reporting and ends up not providing relevant information, which precludes analyzing the causes of the adverse events and/or errors, preventing or delaying the implementation of strategies to avoid new failures, thus compromising patient safety in the institution²³.

It is known that, in its nuance, the PSC topic imposes the need to change the model for managing errors and adverse events in health services since, in addition to being ineffective for growth and development of the organizations, the premise of punishment used in the institutions refers to places with a weak safety culture that can make the care provided to the patients more prone to error²⁴, in addition to providing disservice to the users of the system.

Another dimension that proved to be weak in the study locus was “Feedback and communication about errors”, leading to the belief that the different professionals working in the unit receive limited feedback on the process for handling the reported errors, which are not duly discussed, as well as about the changes implemented as strategies to avoid them.

The “Teamwork across units” dimension was considered weak for the PSC, denoting that the MICU professionals believe that the maternity units are not coordinated with each other to offer safe care, a result also evidenced in other studies that found low percentages of positive answers in this dimension^{25,26}.

The “Management support for patient safety” dimension was considered weak, as it obtained less than 50% of positive answers, which shows that the managers and leaders of health organizations and obstetric services need to

commit to creating favorable conditions for the development of safe practices, with transparency and accountability to benefit the patient safety perception, appropriating the theoretical and conceptual framework of quality in health, incorporating methods in their organizations to know and monitor the existing reality and subsequently implementing measures to prevent incidents, as well as development of training sessions for the teams, thus creating an environment aimed at improving care quality^{23,27}.

The “Frequency of events reported” dimension only obtained 29.9% of positive answers, and it can be noticed that most of the MICU professionals reported not having notified any AE. When considering the complexity of factors surrounding delivery and its care, identification of AEs contributes to dimensioning the problems arising from the assistance-related processes. It is necessary to encourage health professionals to report the AEs, taking into account the importance of such attitude in the improvement of patient safety. In addition to that, it is considered strategic to promote training sessions so that the team is clarified about the importance of reporting since, in this way, strategies can be devised aimed at improvements and quality of the care provided, thus emphasizing that notifications do not have a punitive character^{28,29}.

Regarding the assessment of the patient safety level, the vast majority classified it as excellent/very good and as fair, as the safety level evaluated has a positive answer, as well as to ensure improvements in the safety culture.

Study limitations

It is noted that the study limitation was the fact that it was conducted in a single research locus. Even so, it is believed that the results of this study may contribute to the basis of and, consequently, to grounding of the decision-making process by the managers and team professionals working in the MICU, who should seek strategies to improve the PSC and provide safe care to pregnant women, parturients and newborns.

CONCLUSION

From the professionals' perspective, the PSC in the MICU was considered weak in most of its dimensions, with emphasis on “Frequency of events reported”, “Management support for patient safety” and “Teamwork across units”, pointing to the need to implement care quality improvement strategies. The results also indicate that teamwork within the MICU is a strong area, which must be considered crucial in health care provision.

In addition to that, five dimensions were analyzed as neutral/in the midst of an improvement process, with emphasis on “Supervisor expectations and actions promoting patient safety”.

The results indicate that reporting is carried out in an incipient way in the MICU, recommending that training sessions be implemented, in order to improve this dimension, which will later allow for an analysis of the notifications and for the implementation of strategies to improve safe care quality, thus strengthening the PSC.

It is worth noting that, although the maternity hospital has PSC identification, some contexts present weaknesses that can have implications for care quality, as well as management of the care processes, and which directly interfere in the care and monitoring of pregnant and puerperal women. It is hoped that, with the presentation of the results of this study, useful actions may be directed, enabling appropriation of a strong safety culture in the unit, thus providing safer care to the pregnant and puerperal women that need intensive care.

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