







Patient safety in an emergency care unit: planning strategic actions

Segurança do paciente em uma unidade de pronto atendimento: planejamento de ações estratégicas

Seguridad del paciente en una unidad de atención de emergencia: planificación de acciones estratégicas

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ABSTRACT

Objective: to plan strategic actions to improve the quality of care and patient safety in the Emergency Care Unit. **Method:** this qualitative, descriptive, exploratory study was conducted in an Emergency Care Unit in a municipality in south Brazil, from September 2018 to February 2019, with the unit's nurses as participants. The methodological frame of reference was given by Convergent Care Research, the logic of Situational Strategic Planning, and the 5W3H tool. Workshops were held with the participants to choose problems in patient safety, propose improvements, and adaptation and approval of action plans. Data were analyzed using R software and similarity graphs. **Results:** nurses chose the problems "communication" and "too few staff" and made five proposals, detailed in six action plans. **Conclusion:** by situational strategic planning, strategic actions under nurses' governance were planned to improve care.

Descriptors: Patient Safety; Organizational Culture; Emergency Nursing; Strategic Planning.

RESUMO

Objetivo: planejar ações estratégicas para a melhoria da qualidade do cuidado e segurança do paciente em Unidade de Pronto Atendimento. **Método:** pesquisa descritiva, de abordagem qualitativa, desenvolvida em uma Unidade de Pronto Atendimento de um município do sul do Brasil, entre setembro de 2018 e fevereiro de 2019, tendo como participantes os enfermeiros dessa unidade. Utilizou-se como referencial metodológico a Pesquisa Convergente Assistencial, a logicidade do Planejamento Estratégico Situacional e a ferramenta 5W3H. Foram realizadas oficinas com os participantes, para escolha de problemas na segurança do paciente, proposição de melhorias, adequação e aprovação de planos de ação. Para análise dos dados utilizou-se o *software* R e grafos de similitude. **Resultados:** os problemas "comunicação" e "número insuficiente de profissionais" foram escolhidos por 24 enfermeiros, sugerindo cinco propostas, detalhadas em seis planos de ação. **Conclusão:** o planejamento estratégico situacional permitiu planejar ações estratégicas de melhoria na assistência que são de governabilidade dos enfermeiros.

Descritores: Segurança do Paciente; Cultura Organizacional; Enfermagem em Emergência; Planejamento Estratégico.

RESUMEN

Objetivo: planificar acciones estratégicas para mejorar la calidad de la atención y la seguridad del paciente en la Unidad de Atención de Emergencias. **Método:** investigación descriptiva, con un enfoque cualitativo, desarrollada en una Unidad de Atención de Emergencias de una ciudad del sur de Brasil, entre septiembre de 2018 y febrero de 2019, cuyas participantes fueron las enfermeras de esta unidad. El marco metodológico utilizado fue la Investigación Convergente de Atención, la lógica de la Planificación Estratégica Situacional y la herramienta 5W3H. Se llevaron a cabo talleres con los participantes para elegir problemas en la seguridad del paciente, proponer mejoras, adecuación y aprobación de planes de acción. El software R y los gráficos similares se utilizaron para el análisis de datos. **Resultados:** los problemas de "comunicación" e "número insuficiente de profesionales" fueron elegidos por 24 enfermeras; se sugieren entonces cinco propuestas, detalladas en seis planes de acción. **Conclusión:** la planificación estratégica situacional permitió planificar acciones estratégicas para mejorar la atención que rigen las enfermeras.

Descritores: Seguridad del Paciente; Cultura Organizacional; Enfermería de Urgencia; Planificación Estratégica.

INTRODUCTION

Patient safety is defined as reducing the risk of unnecessary harm associated with health care to the minimum acceptable¹, a theme that has been increasingly evidenced worldwide in recent years. In Brazil, the policies aimed at promoting safe care in health institutions, with greater emphasis on structuring a national patient safety program, date back to 2013.

As an assistance scenario, the Emergency Units (EUs) are complex organizations due to their articulation and interdependence with various points in the Health Care Network, of intermediate complexity, in order to enable the best functioning of the Emergency Care Network². Emergency services, such as the EUs, are characterized as stressful environments, with a high cognitive workload, frequent noises and interruptions, factors that favor the occurrence of incidents³, thus compromising patient safety.

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In addition to that, high workload, lack of control and communication and organization failures are identified as factors that impair patient safety in this care scenario, and the professionals' engagement in the development of procedures that increase knowledge about these factors, as well as the identification of strategies that can facilitate the maintenance of patient safety during periods of high workload, are actions to improve care⁴.

In this context, the safety culture is defined as a set of values, attitudes, skills and behaviors that seek to improve quality of care¹ and is an important structural component of the services, favoring the implementation of safe practices⁵.

However, achieving it is complex, as the culture of an organization is strongly embedded in people's attitudes and behaviors and, therefore, changing it requires the planning and execution of effective interventions aimed at patient safety⁶.

Given this, the Situational Strategic Planning (SSP) developed to solve problems in the public sphere considers the political, economic and social game that permeates them and the perception of reality by the individuals (actors) involved in it, who therefore participate in planning⁷.

SSP occurs in four moments: explanatory, normative, strategic and tactical-operational, which allow for the selection of relevant problems, planning of interventions, study of their feasibility and, finally, putting them into practice; enabling what was planned⁷, outlining more assertive strategies, which can be used as a methodology for planning improvements aimed at patient safety.

In addition to the use of a methodology, the use of planning tools facilitates the organization of the actions proposed in a clearer and more objective manner, as well as their implementation. Examples include the 5w3h tool, a resource used to plan the implementation of actions in an organized fashion⁸, and the Ishikawa diagram, which organizes the causes or factors contributing to the problem intended to be investigated in groups⁹.

Consequently, the objective of this research was to plan strategic actions for improving quality of care and patient safety in an Emergency Unit.

METHOD

This is a descriptive study with a qualitative approach, which used Convergent-Care Research (CCR) as its methodological framework.

CCR relates theoretical knowledge to the professional practice, as it provides that the research results are used in real work situations¹⁰, allowing nurses that work in the place where the research is carried out to participate in the transformation of their own work process, and is developed in four phases: conception, instrumentation, research and analysis¹⁰.

The concept encompasses the definition of the research problem, the objectives, the justification, the literature review, the methodological framework and methodology, delimitation of the physical space, choice of the participants and how data collection will be conducted¹⁰.

The study was carried out in an EU in a city of southern Brazil, with the inclusion criteria for the participants listed as being a nurse and working in the EU; and the exclusion criteria were being a nurse on leave due to health reasons, under labor regulations, vacation or unavailable in the data collection period.

Data collection took place through four workshops, conducted by a researcher, who is an assistant nurse at the research locus, with the presence of only the participating nurses, between September 2018 and February 2019, and the participants' statements were audio-recorded after their authorization.

The population consisted in 31 nurses, with a final sample of 24 participants, with one nurse participating in more than one workshop.

The instrumentation is outlined by the "more detailed procedures" with respect to the choice of the physical space of the research, the participants and the data collection instruments⁹. In this phase, more detailed data were obtained about the study scenario and the inclusion criteria were chosen.

The negotiation for conducting the workshops was carried out firstly with the unit's management, in a brief meeting aimed at explaining the research in order to establish partnerships and obtain authorization to use the structure and resources of the EU. Subsequently, it was negotiated with the nurses, through an invitation to participate in the workshops via messages in a cell phone app.

The research is characterized as a “thorough and in-depth search for conditions for changes in the entire context of the research”¹⁰. This phase used the results obtained in the assessment of the safety culture using the Safety Attitudes Questionnaire (SAQ)¹¹ previously carried out at the research locus. The results of the safety culture were presented to the nurses in the first workshop, held in five meetings, in Power Point presentation format, for the selection of two problems to be worked on by the nurses in the subsequent workshops. Each meeting lasted a mean of 40 minutes, with the participation of 14 nurses, all female: 12 clinical nurses, one coordinator and one supervisor.

It was agreed with the nurses that they should work on problems of their governance or with the construction of the viability of those that are not of their governance, as proposed by the SSP methodology.

The second workshop took place in only one meeting, and the “communication” problem was discussed, lasting two hours. Six nurses participated in this workshop, all female: three clinical nurses, one coordinator, one supervisor and one administrative nurse.

To favor discussion of the problem, in order to find the main contributing factors associated, a poster with the drawing of the Ishikawa Diagram was used, facilitating the elaboration of intervention proposals.

For discussion of the problem “Insufficient number of professionals”, addressed during the third workshop, also with only one meeting lasting one hour, a Power Point presentation was used, in which proposals were presented on how to increase the number of nurses in the EU workforce. Eight nurses participated, all female and clinical nurses.

The fourth workshop took place in four meetings, with a mean duration of 40 minutes each, one in each shift, and with the participation of ten nurses in total, all female and clinical nurses. In this workshop, the action plans in the model of the 5w3h tool developed by the researcher during the analysis phase were presented, adjusted and approved and, subsequently, these plans were presented to the nurse coordinating the unit.

The 5w3h and Ishikawa Diagram tools were used in this research to plan the strategic actions to improve patient safety in the EU. Each workshop had a different number of participants; this is due to the dynamics of the service, which does not always allow nurses to be absent from work; therefore, it was not possible for all nurses who were on duty to participate in the workshops.

The analysis was initiated with the process of data apprehension, with the collection of information, described in the research phase, through the workshops.

To organize the data, the participants' statements were transcribed in the Word software, and coded with the letter “E” followed by a number, thus keeping the participants anonymous and, subsequently, the text underwent pre-processing in the R software, with removal of words that contributed no meaning (such as articles, pronouns, or transition verbs); obtaining the radical of each term through the SnowballC algorithm; conversion of the radicals back to the most frequent original word by means of a heuristic algorithm; and creation of matrices through the relative frequency of the term (tf-prop) and frequency of the term - inverse of the frequency in the document (tf-idf).

For the analysis of the statements, similarity graphs were elaborated, and, after that, the 15 most frequent terms were determined, using the R software. Similarity graphs are graphical representations, generated by the R software, which “make it possible to identify the co-occurrences between words, and their result contributes indications of the connection between the words, helping to identify the representation structure”¹².

The most frequent terms and the terms most strongly connected to them were searched in the graphs, and then the transcribed statements were searched for the subject matters discussed in the presence of such terms to understand the relationship between them, thus seeking to associate them to the contributing factors pointed out by the nurses, in addition to seeking new associations that did not appear in the discussion.

At the end of the analysis, it was possible to identify contributing factors, to relate them to the interventions proposed by the participants, and to build action plans with the interventions suggested to improve patient safety in the EU, using the SSP logic, which made it possible to organize them according to their concepts and moments.

This research was approved by the institution's Research Ethics Committee. All the participants signed a Free and Informed Consent Form before taking part in the study.

RESULTS

The participants of the five meetings held in the first workshop unanimously chose the problems “communication” and “insufficient number of professionals”; only one Nurse was in favor of also choosing the problem “lack of training of new professionals”.

The second workshop generated a database containing 643 documents and 1,187 terms. The 15 most frequent terms calculated from the relative frequency in the second workshop were the following: nurse, patient, spoken, knows, puts, standardization, comes, all (female), stays, lack, do, serum, feedback, all (male) and understand. As for the inverse frequency, the most frequent terms were as follows: nurse, spoken, knows, patient, standardization, serum, feedback, lack, puts, comes, all (female), computer, stays, routine and all (male).

The co-occurrence of the terms based on the relative frequency (tf-prop) (Graph 1) and on the inverse frequency (tf-idf) (Graph 2) can be seen in Figure 1 below.

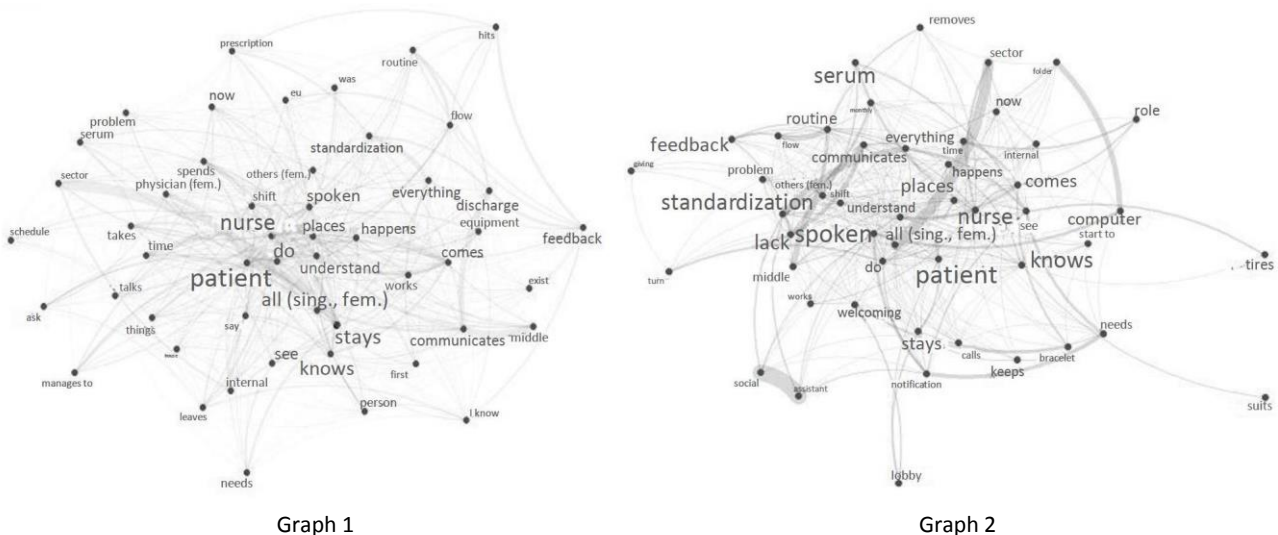


FIGURE 1: Graphs 1 and 2 from the second workshop: co-occurrence of the terms based on the terms' relative frequency (tf-prop) and on the terms' inverse frequency (tf-idf). Curitiba, Paraná, Brazil, 2019.

The terms “Nurse”, “patients” and “spoken” are seen in the center of Graph 1, connecting to many other terms, making it difficult to see which terms are more strongly related to them, that is, they are related to practically everything, even by the high frequencies. Graph 2 presents the most disperse terms and, therefore, it allows for a better visualization of the links between them.

Graph 2 also indicates a strong association between the terms “lack” and “standardization”, “routine”, “communication” and “feedback”, reinforcing that there is a gap in these problems, indicating critical points to be worked on.

The participants pointed out the following as interventions that will improve communication at the EU: creation of a multi-professional commission (MC), participatory meeting, creation of an official communication means, implementation of permanent education actions and standardization of work flows, routines and processes.

The nurses consider that the actions suggested may come to improve more than one of the causes which impair communication. They believe that, for example, the participation of the professionals in the elaboration of routines and flows through the MC will make them feel appreciated, improving their commitment, as well as that the standardization of flows and routines will reduce work overload, since the processes of standardized work lead to a reduction in interruptions generated by questions originated by the absence of a standardized language between shifts, as well as that reducing mistakes in medical and nursing prescriptions avoids double work.

The third workshop discussed the proposal for the “Insufficient number of professionals” problem and resulted in a corpus with 208 documents and 463 terms.

The discussion of the problem in this workshop resulted in the proposal to implement the Patient Classification System (PCS) to generate data that will support the calculation of the Nursing staff sizing.

The most frequent terms from the relative frequency in the third workshop were the following: do, stays, everyone, I know, shift, emergent, spends, months, nurse, screening, patient, night, hospitalization, commitment and cute. From the inverse frequency, the 15 most frequent terms in this workshop were as follows: do, stays, commitment, cute, months, all (female, plural), emergent, I know, say, screening, spends, shift, nurse and monthly.

Graphs 3 and 4 represent the co-occurrence of the terms, according to the relative and inverse frequencies, respectively, and are presented in Figure 2.

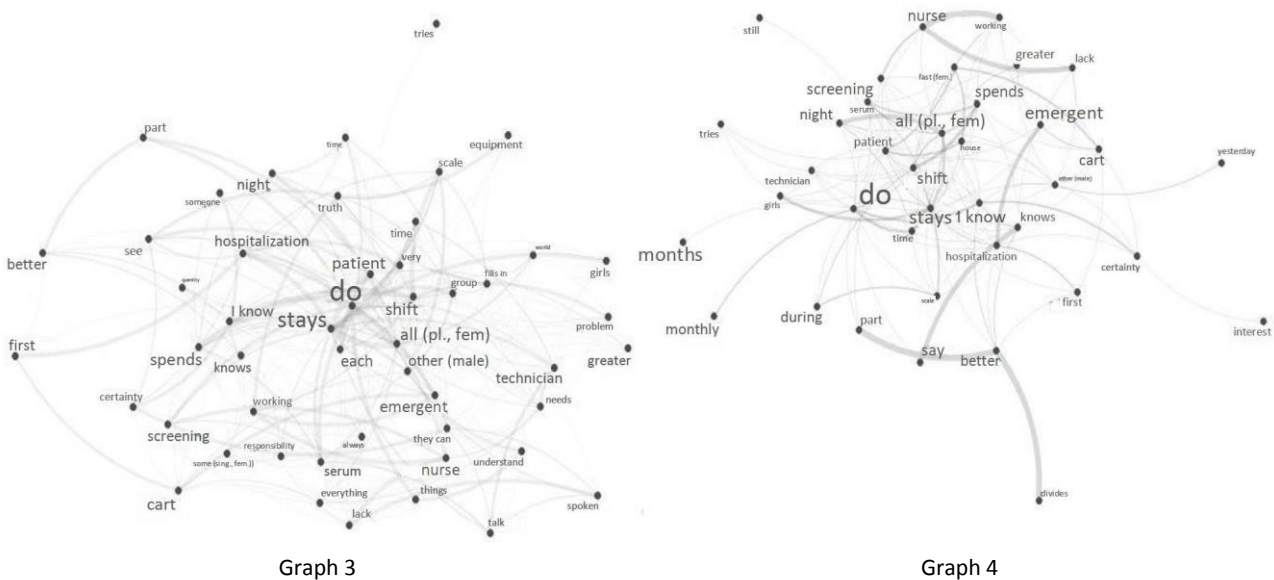


FIGURE 2: Graphs 3 and 4 from the third workshop: co-occurrence of the terms based on the terms' relative frequency (tf-prop) and on the terms' inverse frequency (tf-idf). Curitiba, Paraná, Brazil, 2019.

In the workshops, the nurses did not detail how to carry out the suggested actions but they proposed the five major actions; however, as the 5w3h model provides for details based on its guiding questions, this was developed by the researcher.

This study used the SSP logic, seeking feasibility in what is proposed. Then the action plans grounded on the analysis of the graphs were elaborated; these plans were adequate and were approved by the nurses, in the meetings of the fourth workshop.

Thus, five major proposals were developed to improve patient safety in the EU: creation of a multiprofessional commission (MC), elaboration and implementation of human resources (HH. RR.) guidelines, standardization of work flows, routines and processes, implementation of permanent education actions, and adequate sizing of the Nursing team.

Figure 3 presents the action plan, with the five major actions proposed by the nurses during the workshops. Each action was detailed in an action plan, which was handed over to the management of the EU; the conduction dates were removed because they are already in progress and some have even been concluded.

This action plan contains actions planned for the researched reality, but it can serve as a model for other teams or services.

ACTIONS TO IMPROVE PATIENT SAFETY IN THE EMERGENCY UNIT							
WHAT	WHO	WHEN	WHERE	WHY	HOW	HOW MUCH	HOW TO MEASURE
Creating the MC	Coordination of the Emergency Unit MC Quality Sector	To be defined	Afonso Pena Emergency Unit	-To standardize work flows, processes and routines through the participation of representatives from the various professional categories -To promote participatory management according to the SUS Humanization Policy -To improve communication -To improve the workers' commitment -To motivate the workers	-Creating the MC -Holding meetings with the MC every 2 months	Working hours of the professionals involved	According to the specific action plan
Implementing Permanent Education actions	Coordination of the Emergency Unit MC Quality Sector Professionals of the Emergency Unit	To be defined	Afonso Pena Emergency Unit	-To improve communication -To improve quality of care and, consequently, patient safety -To motivate the workers -To standardize knowledge and care practices -To facilitate the implementation of the flows, routines and processes proposed by the MC	-Establishing an annual training schedule according to priorities established by the MC -Requesting authorization to pay overtime to the professionals who will provide the training sessions -Establishing a partnership with the <u>Multiprofessional Residency Program in Urgencies and Emergencies of the Municipal Health Secretariat</u> -Conducting training sessions -Planning and implementing the welcoming of new professionals	Working hours of the professionals involved Professionals' overtime	According to the specific action plan
Standardizing work flows, routines and processes	Coordination of the Emergency Unit MC Quality Sector	To be defined	Afonso Pena Emergency Unit	-To improve communication -To improve quality of care and, consequently, patient safety -To motivate the workers -To standardize care practices	-Creating the MC -Implementing the notification of adverse events and near misses -Planning and developing flows, routines and processes according to the priorities determined by the MC -Implementing new work flows, routines and processes	Working hours of the professionals involved Professionals' overtime for planning the actions	According to the specific action plan
Elaborating and implementing HH. RR. guidelines	Coordination of the Emergency Unit MC Quality Sector	To be defined	Afonso Pena Emergency Unit	-To standardize procedures referring to people management (scales, performance assessments, absenteeism, etc.) -To motivate the workers -To establish adequate feedback	-Creating the MC -Elaborating the HH. RR. guidelines of the Emergency Unit by the MC -Implementing the HH. RR. guidelines of the Emergency Unit	Working hours of the professionals involved Professionals' overtime for planning the actions	According to the specific action plan
Adequately sizing the Nursing team	Coordination of the Emergency Unit Assistant Nurses of the Emergency Unit	To be defined	Afonso Pena Emergency Unit	-To determine if the Nursing staff is suitable for the number of patients in the hospitalization sector -To obtain and indicator for Nursing management -To improve quality of care and, consequently, patient safety	-Implementing <u>Fugulin's Patient Classification System (PCS)</u> in the hospitalization sector -Calculating the Nursing staff of the Emergency Unit of the hospitalization sector	Paper, printer ink Working hours of the professionals involved	According to the specific action plan

Key: MC: Multiprofessional Commission; EU: Emergency Unit; SUS: *Sistema Único de Saúde* (Unified Health System); HH. RR.: Human Resources.

FIGURE 3: Action Plan: Actions to improve patient safety in the Emergency Unit

DISCUSSION

The MC proposed plays a central role, and therefore fundamental, as it will be involved in the development of the other actions. The proposal is for this commission to be composed of at least one representative from each EU professional category, thus allowing for the active participation of the EU workers in transforming their own work process, as they will discuss in the meetings suggestions for improvement of the EU and, in this way, inserting them in the decision-making process and making them co-responsible for the changes. Thus, at each meeting, the members of the MC define objectives to be achieved, as well as the deadline for completion of the actions proposed.

There is a significant positive correlation between shared governance and engagement at work, indicating that the involvement of emergency nurses in making organizational and clinical decisions improves the involvement of these professionals at work¹³.

In the action plan for elaboration and implementation of the HH. RR. guidelines, feedback and performance assessment appear as ways to operationalize the action plan. The findings of another study corroborate this idea, as the professionals interviewed suggested holding multiprofessional meetings “which offer a space for dialog, performance assessments and continuous feedback”, enabling the discussion of day-to-day problems, proposing solutions, and promoting more effective communication^{14:5}.

Another point associated with the communication problem in the studied scenario is the lack of standardization of work processes, lacking pre-established flows and routines, favoring the performance of the same activity in different ways, generating conflicts between professionals.

Conflicts like these were also reported in another study, in which interviewed professionals pointed out that non-compliance with work norms and rules is a source of conflict across and within teams. In view of this, the authors reiterated that “the institutional rules seek to organize and facilitate the work process of nurses and other health professionals”, but the participation of the workers is important, in order to value them and make them responsible for the decisions and implementation of actions^{15:265}.

The EU environment is generally stressful, often operating above their capacity. In addition to that, EUs have several weaknesses related to patient safety in the work process, highlighting non-adherence to basic protocols prepared by the Ministry of Health¹⁶.

In this effort to change the practice to improve patient safety, the standardization of work processes and the implementation of HH. RR. guidelines will make it possible to standardize both care and management practices, as lack of standardization in care allows different professionals to conduct care in different ways, which can lead to impairments in the care provided.

Measures to reorganize work processes and professional practices, such as the development of institutional protocols and in-service education, as in this research, were suggested to improve patient safety¹⁷.

The implementation of permanent education actions aims to standardize knowledge and care practices among the professionals, as well as to facilitate the implementation of new work processes that will be proposed by the MC.

An integrative review found results similar to those of this research, pointing out that, in order to achieve a safe care environment, it is necessary to carry out permanent education and improve communication¹⁸.

The second problem dealt with in the workshops for planning interventions to improve patient safety was the insufficient number of professionals, for which nurses suggested the creation of indicators that demonstrate to the municipal management the need to increase the number of professionals in the Nursing staff of the unit.

Adequate sizing of Nursing personnel is also associated with mortality during hospitalization, with a 3% increase in this risk when the number of nurses is below the necessary, as concluded in a longitudinal, observational and retrospective study conducted in an English hospital¹⁹.

Calculating the sizing of the Nursing staff is possible in the reality studied, according to a research study that used Fugulin's PCS, allowing calculation for the appropriate sizing, concluding that there was a deficit of nurses in the emergency room, also pointing out that most of the patients were in intensive and semi-intensive care, indicating that the profile of the patients treated is similar to that of an ICU¹⁶.

The classification of patients, in addition to providing data for calculating the sizing of the Nursing staff, will provide indicators for a better systematization of Nursing care, as it supports the assessment of what care actions are necessary, proving to be a managerial and care tool, which, using uniform language, helps in the restructuring and adequacy of the institutional resources²⁰.

The discussions held in the workshops indicated, for the most part, factors related to the organizational category and, consequently, the proposals for improvement were concentrated on this category, with suggestions aimed at rethinking already established processes, but not yet disseminated equally to all professionals and neither described.

Study limitations

The participation of a reduced number of nurses during all the workshops was presented as a study limitation, as well as the local specificity and the small sample size. Therefore, the results are not generalizable, but they can serve as a basis for new research studies that consider other emergency services.

CONCLUSION

The improvement of patient safety in the EU depends on the execution of a set of interrelated and interdependent actions to be developed by social actors. Thus, it is not a measure taken by the local management that will result in changes, but a set of measures, designed by different professionals with their different perspectives, who, from being mere spectators, will become active agents of change.

The main problems chosen by the nurses (communication and insufficient number of professionals), as well as the proposals suggested for improvement, point to the organizational nature involved in patient safety issues at the EU, showing the importance of management and contributing to it.

The study pointed out strategic actions to be implemented and it is believed that the standardization of flows and routines and the creation of HH. RR. guidelines will facilitate the organization of the work process, as well as people management, making the individuals follow the same standard of professional conduct and minimizing behaviors that are unfavorable to patient safety.

It should be noted that this EU does not have a Patient Safety Center, which makes the results of this research valuable for the study locus.

It is concluded that the improvement actions must be planned by the management of these services, in order to reduce the existing gaps. For this, it is necessary to determine what the real problems are that hinder the development of a safe environment, in order to list the appropriate interventions and favor the chance of success of the implemented improvements.

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