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FACTORS ASSOCIATED WITH COMPROMISED PATIENT SAFETY IN THE INTENSIVE CARE UNIT

Fatores associados ao comprometimento da segurança do paciente na unidade de terapia intensiva

Factores asociados al compromiso de la seguridad del paciente en la unidad de cuidados intensivos

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ABSTRACT

Objective: to understand the factors associated with compromised patient safety. **Method:** this is an integrative literature review based on the Scientific Electronic Library Online, PubMed and Latin American and Caribbean Health Sciences Literature databases, carried out between April and May 2022. **Results:** inadequate use of equipment, lack of routine and lack of protocol in the sector were identified as the main factors contributing to compromised safety. The problem of excessive workload was also identified. Conflict within the team was also found to be a predictor of adverse events. Lastly, the problem of under-reporting of errors. **Conclusion:** there is a need for management to reverse these problems to reduce the percentage of errors.

KEYWORDS: Patient safety; Adverse events; Hospital care; Intensive care units; Nursing;

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RESUMO

Objetivo: conhecer os fatores associados ao comprometimento da segurança do paciente. **Método:** trata-se de um artigo de revisão integrativa da literatura a partir das bases de dados *Scientific Electrônic Library Online*, *PubMed* e Literatura Latino-americana e do Caribe em Ciências da Saúde, realizada entre abril e maio de 2022. **Resultados:** foram vistos os principais fatores que corroboram para o comprometimento da segurança, sendo a utilização inadequada dos equipamentos, falta de rotina e ausência de protocolo no setor. Foi detectado a problemática da carga exacerbada de trabalho. Conflitos na equipe também foi tido como um preditor para existência de evento adverso. E por fim, o quesito da subnotificação dos erros. **Conclusão:** é visto a necessidade de a gestão reverter esses problemas, para que a assim a porcentagem de erros seja diminuída.

DESCRITORES: Segurança do paciente; Eventos adversos; Assistência hospitalar; Unidades de terapia intensiva; Enfermagem;

RESUMEN

Objetivos: conocer los factores asociados a la seguridad del paciente comprometida. **Método:** este es un artículo de revisión integradora de la literatura basado en las bases de datos Scientific Electronic Library Online, PubMed y Latin American and Caribbean Literature in Health Sciences, realizado entre abril y mayo de 2022. **Resultados:** se vieron los principales factores que corroboran para el compromiso de seguridad, siendo el uso inadecuado de equipos, falta de rutina y falta de protocolo en el sector. Se detectó el problema de la sobrecarga de trabajo. Los conflictos en el equipo también fueron considerados predictores de la existencia de un evento adverso. Y por último, el tema del subregistro de errores. **Conclusión:** se ve la necesidad de que la gestión revierta estos problemas, de modo que se reduzca el porcentaje de errores.

DESCRIPTORES: Seguridad del paciente; Evento adversos; Atención hospitalaria; Unidades de cuidados intensivos; Enfermaría.

INTRODUCTION

Patient safety (PS) has become an increasingly important topic of discussion in recent years as the body of scientific evidence examining the safety of care has grown. The aim is to reduce the risk of unnecessary harm associated with healthcare to an acceptable minimum.[1]

When considering the hospital environment, ensuring patient safety is one of the greatest challenges, given the complexity of care, the dynamics of the teams on duty and the hazardous nature of the services provided. As a result, the likelihood of adverse events (AEs) occurring is greater because patients are vulnerable and spend long periods in this environment, undergoing procedures and interventions daily.[2]

In this hospital context, the intensive care unit (ICU) is a place where adverse events deserve special analysis, considering that critically ill patients have characteristics that make them more susceptible to errors. In addition, they should be analyzed to identify structural problems, human resources, materials, equipment and work processes, in order to support measures to prevent errors in the hospital environment.[3]

The ICU has become a sector with factors that may increase the risk of AS, due to the wide variety of medications, technical procedures performed, the large number of professionals caring for patients, the use of complex equipment and the work dynamics of the unit, combined with the severity of the clinical condition of most patients. In addition, the turnover of professionals in the sector is an obstacle to continuity of care, a challenge that can be reduced by making good use of the information and reporting systems available in the sector, so that risks and injuries are constantly monitored.[4]

In view of this problem, the following question arises: What are the main adverse events/failures and associated factors that occur in the ICU and compromise patient safety? The aim of this study is therefore to understand the factors associated with compromising patient safety.

This study is relevant because it is important to know the main AEs present in the care provided, to contribute to the construction of knowledge and, consequently, to the reflection and implementation of effective measures to ensure the commitment of the team in relation to the reduction of errors and the strengthening of patient safety.

METHOD

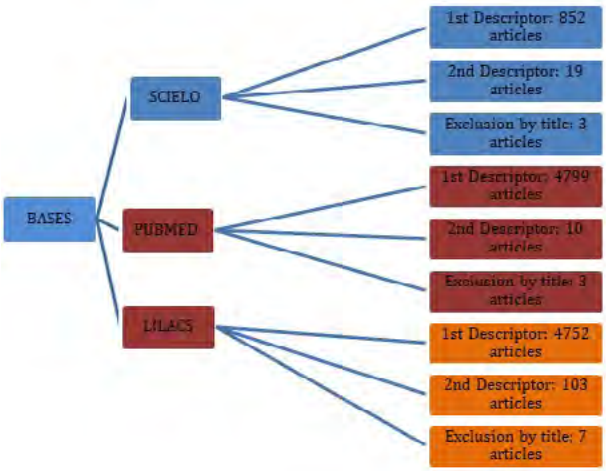
This is a descriptive research and qualitative approach to the literature, using integrative review as a technique, as it allows the discovery of what has already been scientifically produced in a given area of knowledge, thus promoting learning.5 The Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) guide was used to review and quality assure the integrative review.

The research was carried out between April and May 2022 on the Scientific Electronic Library Online (SCIELO), PubMed and Lilacs databases, using intensive care unit and patient safety as descriptors, with the help of the Boolean operator "AND".

In SciELO, the use of the first descriptor yielded 852 articles; the addition of the second descriptor reduced this number to 19; after exclusion of titles that did not correspond to the objective of this study, 3 articles were used. In the second database, the first search yielded 4799 articles; adding the other descriptor reduced the number to 10 articles; after excluding texts that were not re-

levant to the objective, 3 articles were used. In the third database, the addition of the first descriptor yielded 4752 articles. With the addition of the second descriptor, the number was reduced to 103; with the exclusion of the title, 7 articles were used. As summarized in the diagram below:

Figure 1 – Schematizing the selection process of articles for the integrative review, João Pessoa, PB, Brazil, 2022.



Source: The Author (2022).

As an outcome of the selection, when the results from these databases were added together, a total of 13 articles were used in this research. After analyzing these articles, they were categorized into: Infrastructure and use of technologies, workload, problems in the team and the role of management, underreporting and punishment of the error, to facilitate the discussion.

RESULTS

DISCUSSION

An incident is the result of several other situations and has a multicausal character. In this context, it is understood that health professionals are susceptible to incidents in situations where technical and organizational processes are complex and poorly planned. The research findings were divided into categories and discussed as follows.

Infrastructure and the use of technology

One of the factors found in the literature in relation to the second impairment of the patient is the inappropriate use of equipment, which implies the occurrence of adverse events for the hospitalized client in intensive care units. One of the examples of these situations is the infusion pumps, which are associated in the literature with approximately 30% and 60% of all errors. Many of these errors occur during the programming of infusion pumps, especially when adjusting the infusion rate, which can lead to the administration of excess medication or even an overdose.6

Still, in this context of equipment, sometimes some are not adequate, or even old equipment without proper maintenance can produce false situations and end up determining inappropriate conducts and treatments.7

It is also worth mentioning the evolution of equipment, which is becoming more modern and complex, and sometimes institutions do not provide training and qualification for the team. Use without proper and incorrect knowledge can confirm the existence of AE.

Contributing to this are the predictors of the lack of routine and the existence of protocols in the sector. This confirms the fact that professionals provide care without foundation, guided by what they think is right, without standardization, enhancing the compromise of patient safety.8 In order to have the skill and knowledge of the professional, it is important to standardize actions through protocols and standard operating procedures to guide the actions of the professional and consequently reduce such AEs.9

Table 1 – Distribution of publications included in terms of title, objectives, methods, year and database, João Pessoa, PB, Brazil, 2023.

Authors/Year	Objective	Methods	Database
GUZZO et al. (2018)	To analyze the factors affecting the safety of the medication process in a neonatal intensive care unit (NICU).	Exploratory study	Scielo
SERAFIM et al. (2017)	To analyze whether the increase in patient acuity and nursing workload is associated with a higher incidence of adverse events (AEs) in critically ill patients.	Prospective cohort study	Scielo
OLIVEIRA, GARCIA E NOGUEIRA (2016)	To identify evidence regarding the influence of nursing workload on the occurrence of adverse events (AEs) in adult patients admitted to the intensive care unit (ICU).	Systematic review	Scielo

TOMAZONI et al. (2017)	To describe patient safety as perceived by nurses and physicians in neonatal intensive care units.	Exploratory Descriptive Qualitative Research	Pubmed
COSTA et al. (2016)	To understand the perception of nursing professionals in general ICUs of public hospitals about patient safety.	Field study	Pubmed
GUIRARDELLO, EB. (2017)	To evaluate the nursing team's perception of the practice environment in intensive care units and its relationship with safety attitudes, perception of quality of care, and level of burnout.	Cross-sectional study	Pubmed
DUARTE et al. (2016)	To identify errors in nursing care in an intensive care unit, in agreement with the nursing team, and to discuss the main ones in the light of human error theory.	Cross-sectional study	Lilacs
ARBOIT et al. (2020)	To identify the factors that contribute to the occurrence of incidents related to drug therapy in intensive care, from the perspective of nurses.	Descriptive-exploratory study	Lilacs
MINUZZI, SALUM, LOCKS. (2016)	To evaluate the dimensions of patient safety culture from the perspective of the professionals of the health care team of an intensive care unit.	Descriptive-exploratory study	Lilacs
FREITAS et al. (2021)	To evaluate the culture of safety in the intensive care unit (ICU) from the perspective of nurses.	Mixed methods study	Lilacs
CAMPELO et al. (2021)	To analyze the culture of patient safety among ICU nurses.	Cross-sectional study	Lilacs
GIRÃO et al. (2019)	To evaluate the perception of patient safety culture from the perspective of professionals from therapy units intensive.	Cross-sectional study	Lilacs
RIBEIRO, SILVA, FERREIRA (2016)	To identify the causes of adverse events in the client related to the equipment present in the intensive care setting.	Integrative review	Lilacs

Source: The author (2022).

In a study conducted by Costa et al.,[10] their results included a statement from the participant who said: "So I would really like to have these protocols for everyone to do their job correctly, it's not even a matter of changing everything, just some things that need to be organized".[10:4] This highlights the need for improvements to be implemented in realities to consolidate safe care that permeate structural and work process elements.[10]

Another point is the need for updating in the field of patient safety, an issue that is constantly evolving and determines the quality of care. Tomazoni et al.[7] point out in their research that most of the participants in their study had worked in the profession for more than 10 years, and this factor determines professional experience, demonstrating the need for constant updating.[7,17]

Studies show that education, training, and continuing education in patient safety, both for students in training and for working professionals, improve knowledge of the topic and demonstrate significant changes in attitudes and competencies to promote patient safety.[7]

Workload

Workload has been identified in studies as one of the factors that may contribute to patient safety. A study conducted by Oliveira et al.[2] found that nursing workload influences the occurrence of AEs in patients admitted to the ICU. This is due to the imbalance between the number of professionals and the number of patients.[16]

It should also be noted that caregivers often accumulate more than one job, have a high turnover rate due to low pay or working conditions in the institution, and a high level of stress. The work overload of nurses should be understood as a consequence of several factors, and to solve it, it is up to the manager to implement strategies at different levels.[11]

In this context of overload, Tomazoni et al.[7] brings a warning for scheduling and unforeseen events that interfere with the lack of professionals. As in the case of sick leave or vacation, since there is no replacement of employees, which results in an increase in working hours of those who are already in service. This leads to the overwork and fatigue of the professionals, which is a constant factor that affects safe care.[7]

Due to the severity of the patients, the ICU routine demands many patients and procedures for each professional. The quantitative reduction of the team is cited as a factor that compromises care. In addition, the patient requires constant follow-up procedures, most of which are invasive. Then, due to this exhaustion, AEs emerge.[11,17]

The excessive workload is considered responsible for the emotional exhaustion, the occurrence of accidents and health problems of professionals, and there should be adequate planning of the distribution of workload, continuing education, development of strategies to improve working conditions to prevent the physical and psychological exhaustion of the team.[12]

Team problems and the role of management

The climate of teamwork includes collaboration between professionals, but also the quality of communication. It is known that effective communication, based on sharing and good interaction between teams, generates a positive impact on care without leaving room for errors. However, the results of the research showed problems in the team and the interference of the management in compromising the care.

The division of activities by the nursing technicians is a point that deserves attention, as it demonstrates a fragmentation of care that is not considered to be detrimental to the quality of care. This situation is quite common in hospital institutions, as there is no standardization for it, although there is a recommendation by the Regional Councils of Nursing (CORENs), on the occasion of the inspection visit, for professionals to assume a comprehensive care, in order to strengthen the bonds between professionals, patients and family members to promote the humanization of care and to qualify care.[13]

The sum of emotional exhaustion, together with the hierarchical context of the team and the pressure experienced in the service, reflects on the care provided. In a study by Minuzzi et al.[14] pointed out reasons given for the existence of AEs were team problems, such as lack of cooperation (91.53%), rapport (88.14%) and coordination (86.21%) among the units.[14]

Still regarding the team, another problem is internal transfers and shift changes. In the study by the same authors mentioned above, the comparison between the percentage of positivity and the possible outcomes revealed that the occurrence of adverse events was significantly associated with a low percentage in the dimension of internal transfers and shift changes.

In the study by Minuzzi et al.[14] regarding hospital leadership support for patient safety, 89.84% of respondents disagreed that hospital leadership viewed patient safety as a priority and 89.66% of the team disagreed that hospital leadership did not provide a work environment that promoted patient safety.[14]

Underreporting and punishing errors

The words "punish," "warn," "punishment," and "warning" are still very present when it comes to patient safety. This culture is an obstacle to the consolidation of patient safety actions, as it implies a Cartesian concept of error and therefore does not promote preventive and expanded actions of safe care.10

This punitive dimension is one of the major problems in services. Minuzzi et al.14 found in their study that a large majority of professionals (89.84%) believed that their errors

could be used against them, 85.97% said they feared that their errors could be recorded in their functional records, and 82.46% believed that when an error occurs, the focus is on the person who made the error and not on the AEs.[14]

The centralization of the reporting process was also found in the search results. In this case, nurses were mentioned as the main actors in this process, which is why there is a higher number of notifications from this category, while the other categories were seen as "no events" reported. This suggests that only nurses make mistakes. In addition, it indicates that the practice of reporting has not yet been ingrained by the team, whose current culture, as well as generating the feeling of fear/guilt, influences the communication of events by nursing. Once there is underreporting, there is no reflexive look at the errors and thus the errors continue to be perpetuated.[15]

Assessments of patient safety culture in healthcare organizations play a fundamental role in promoting safe care, as these studies indicate the areas that need improvement and thus help to direct actions and attitudes aimed at better overall performance. From the existence of the error, there is a need to review the processes and routines of health care, reducing the commitment to care.[15]

The low number of reports is a worldwide phenomenon. Studies show that underreporting is a consequence of professionals' lack of knowledge of its importance, lack of professional interest and fear of legal consequences. In most health services, the reporting of AEs is done by nurses, with the identification of the professional, a fact that, even if the institution does not provide for punitive actions, generates shame and guilt, thus being one of the causes of underreporting. The incidence of AEs should be addressed with the aim of creating a non-punitive, anonymous and efficient safety practice, with constant training, especially in ICUs.[9]

CONCLUSION

It is concluded that there are several factors involved in the cascade of patient safety compromise. Regarding the use of equipment and routine, it is necessary for management to promote training to update professionals.

Workload is seen as a determinant factor of errors in care, displaying the need for better working conditions to ensure risk-free care.

Particularly, it is important for the hospital's patient safety center to work with the team to demystify the culture of punishment associated with errors. For there to be change, research, and better working conditions, it is necessary to have data to expose the need. To do this, reporting is essential.

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