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RISK MANAGEMENT OF PATIENT SAFETY INCIDENTS IN HOSPITAL SETTINGS: TRENDS IN PORTUGUESE SCIENTIFIC PRODUCTION

GESTÃO DE RISCOS DE INCIDENTES NA SEGURANÇA DO PACIENTE EM CONTEXTOS HOSPITALARES: TENDÊNCIAS DAS PRODUÇÕES CIENTÍFICAS PORTUGUESAS

Marculina da Silva[1], Ana Margarida Ferreira Machado[2], Iara Rafaela Pinto da Silva Ferreira[3], Mauren Pimentel Lima[4], Amélia Filomena Oliveira Mendes Castilho[5], Ana Paula Morais Carvalho Macedo[6] e Rafaela Andolhe[7]

ABSTRACT

Introduction: Patient safety is a topic of global relevance, especially with regard to the reporting of safety incidents associated with healthcare practice, considering the potential harm that these incidents can cause to patients. **Objective:** To identify and analyze evidence from Portuguese scientific publications on the management of safety incident risk in hospital settings. **Method:** This is a study of trends in Portuguese theses and dissertations, in the form of a narrative literature review, with a search conducted in September and October 2024 in *RepositoriUM*, the Scientific Repository, *Universidade de Coimbra*, and in the *Repositório Científico de Acesso Aberto de Portugal* (RCAAP). The trend referred to in this study is the mapping of Portuguese scientific productions on the subject, defended in master's and doctoral courses in higher education institutions in the country, which includes quantitative analysis of publications, temporal and thematic overview. Content analysis was used to analyze data extracted from the assessed productions. **Results:** Of the thousands of publications identified, 44 were selected for full reading, and 24 comprised the final *corpus* of the study. The main findings were organized into categories that discussed: types and contributing factors to incidents; facilitators and barriers to reporting in the information system; and risk management strategies focused on patient safety, promoting a culture of safety, and reinforcing healthcare professionals' awareness of reporting in the system. **Final considerations:** The study analyzed Portuguese scientific publications on risk management and

1 Nurse. Doctoral Student in the Graduate Program in Nursing, Universidade Federal de Santa Maria. Santa Maria, Rio Grande do Sul, Brazil. E-mail: marculina.silva@acad.ufsm.br ORCID: https://orcid.org/0000-0001-6106-0582

2 Nutritionist. Master's Degree. Scientific Research Fellow, Unidade de Investigação em Ciências da Saúde: Enfermagem (UICISA:E), Escola Superior de Enfermagem de Coimbra (ESEnfC), Coimbra, part of Universidade do Minho. Portugal. E-mail: anamargaridaferreiramachado@gmail.com ORCID: https://orcid.org/0000-0002-2958-9803

3 Nurse. Research Fellow, Unidade de Investigação em Ciências da Saúde: Enfermagem (UICISA:E), Escola Superior de Enfermagem de Coimbra (ESEnfC), Coimbra, part of Universidade do Minho. Portugal. E-mail: b14265@ese.uminho.pt ORCID: https://orcid.org/0009-0009-3179-3799

4 Doctoral Degree in Nursing from the Graduate Program in Nursing, Universidade Federal de Santa Maria. Santa Maria, Rio Grande do Sul, Brazil. E-mail: maurenplima@gmail.com ORCID: https://orcid.org/0000-0002-0215-1190

5 Doctoral Degree. Professor at Escola Superior de Enfermagem de Coimbra. Coimbra, Portugal. E-mail: afilomena@esenfc.pt ORCID: https://orcid.org/0000-0002-4420-8861

6 Doctoral Degree. Professor and President of the School of Nursing, Universidade do Minho. Braga, Portugal. E-mail: amacedo@ese.uminho.pt ORCID: https://orcid.org/0000-0002-1064-3523

7 Doctoral Degree. Adjunct Professor, Department of Nursing, Universidade Federal de Ciências da Saúde de Porto Alegre. Porto Alegre, Rio Grande do Sul, Brazil. Email: rafaela.andolhe@ufcspa.edu.br ORCID: https://orcid.org/0000-0003-3000-8188

incident reporting, highlighting the relevance of the topic in publications. The need for research to assess the effectiveness of institutional strategies to promote a culture of patient safety through incident reporting in the reporting system was identified.

Keywords: Adverse Events; Risk Management; Incidents; Incident Reporting; Patient Safety.

RESUMO

Introdução: segurança do paciente é uma temática de relevância global, especialmente no que se refere à notificação de incidentes de segurança associados à prática assistencial. Considerando os potenciais danos que esses incidentes podem causar aos pacientes. Objetivo: identificar e analisar as evidências das produções científicas portuguesas acerca da gestão de risco de incidentes de segurança no contexto hospitalar. Método: trata-se de estudo de tendência portuguesa das teses e dissertações, do tipo revisão narrativa da literatura, com a busca realizada nos meses de setembro e outubro de 2024, no RepositoriUM, Repositório Científico da Universidade de Coimbra e no Repositório Científico de Acesso Aberto de Portugal (RCAAP). A tendência referida neste estudo trata-se de mapeamento das produções científicas portuguesas sobre o tema, defendidas nos cursos de mestrado e doutorado nas instituições de ensino superior no país, o que engloba análise de quantitativo das publicações, panorama temporal e temática. Para análise de dados extraídos das produções avaliadas, utilizou-se análise de conteúdo. Resultado: dos milhares de produções identificadas, 44 foram selecionadas para leitura integral, e 24 compuseram o corpus final do estudo. Os principais achados foram organizados em categorias que discutiram: tipos e fatores contribuintes para incidentes; facilitadores e barreiras à notificação no sistema de informação; e estratégias de gestão de risco voltadas à segurança do paciente, promoção da cultura de segurança e reforço da conscientização dos profissionais de saúde sobre a notificação no sistema. Considerações finais: o estudo analisou as produções científicas portuguesas sobre gestão de riscos e notificação de incidentes, destacando a relevância do tema nas publicações. Identificou-se a necessidade de pesquisas que avaliem a efetividade das estratégias institucionais para promover uma cultura de segurança do paciente por meio de registro de incidentes no sistema de notificação.

Palavras-chave: *Eventos adversos, Gestão de riscos, Incidentes, Notificação de incidentes, Segurança do paciente.*

INTRODUCTION

Patient safety is a globally relevant issue, particularly with regard to safety incidents associated with healthcare practices. Given the potential harm that these incidents can cause, healthcare institutions have been mobilizing to ensure safer, higher-quality care in accordance with World Health Organization (WHO) recommendations (WHO, 2021).

Reporting of undesirable events occurring during healthcare provision is one of the strategies implemented. However, effectively implementing this measure depends on a structured risk management system that coordinates and executes these actions (WHO, 2021; FERREIRA; DIXE, 2024).

Quality care and patient safety have a direct impact on hospital management, as incidents can lead to medical complications, legal implications, and substantial financial losses for healthcare institutions (DONNELLY; LEE; SHAREK, 2018).

Despite years of progress since the publication of the report "To Err Is Human", patient safety remains a global public health issue, especially with regard to safety incidents (CAMACHO-RODRÍGUEZ *et al.*, 2022).

The occurrence of safety incidents in healthcare is a challenge present in modern healthcare systems. Therefore, the adoption of policies and strategies aimed at reducing these incidents, many of which are preventable, is widely recognized as an effective approach to promoting health sector improvements and is considered a priority (PORTUGAL, 2021).

On the other hand, the inconsistency of risk associated with the task, the work environment, and healthcare professionals' behavior can be potentially predicted through the assessment of healthcare workers' attitudes toward safe care, such as incident reporting behavior. This approach offers managers a broader opportunity to identify and address cultural obstacles present in the healthcare organization (NYBERG *et al.*, 2024).

A safety incident is an event or circumstance that could result in unnecessary harm to patients, or that has resulted in such harm. This harm can be physical, psychological, or social. Incidents are classified as follow: near miss - an incident that did not reach patients; no-harm incidents - an incident that reached patients but did not cause harm; and incidents with harm or adverse events - those that resulted in harm to patients. Furthermore, incidents encompass errors or failures in procedures during patient care provision (WHO, 2021).

However, incident reporting is an essential risk management strategy, as it provides management with a comprehensive view of undesirable situations that may be occurring in the healthcare facility and causing harm to patients. This approach allows for the identification and prioritization of problematic conditions, guiding decision-making aimed at implementing corrective actions in relation to incidents (FERREIRA; DIXE, 2024).

Furthermore, incident reporting is a fundamental strategy in healthcare because it reflects healthcare professionals' experiences. Incident reporting also ensures communication between care teams and managers, providing legal support and promoting improvements in the organizational context, as well as strengthening the culture of safety in healthcare (MOREIRA *et al.*, 2021).

Although the debate on patient safety has intensified globally, underreporting of safety incidents by healthcare professionals is still a common reality in healthcare institutions around the world (BRÁS *et al.*, 2023; FERREIRA; DIXE, 2024).

In this sense, risk management plays a central role in ensuring quality of care, learning from errors, promoting patient safety, and cultivating a positive safety culture. It acts as a strategic link between healthcare professionals and the administration of healthcare organizations regarding service quality and patient safety. Additionally, it facilitates the identification and diagnosis of working conditions that may compromise the safety of those served by healthcare services (CAMACHO-RODRÍGUEZ *et al.*, 2022).

Since hospital settings are where highly complex technology is applied to provide care, patients are more exposed to various risks, such as medication incidents, hospital-acquired infections, and other complications resulting from faulty medical procedures. Therefore, through this identification and assessment of risks, healthcare professionals and managers can implement preventive and protective actions, as well as safety protocols, aimed at mitigating the occurrence of incidents and improving quality of care (CARRILHO, 2024).

Risk management encompasses a proactive approach focused on preventing incidents and addressing concerns about quality of care, as well as a reactive approach aimed at mitigating the impact of harm caused by these incidents. In order to promote safety as a central element in healthcare delivery and ensure a strong patient safety culture, it is essential that risk management be functional and effective (SOUZA; MENDES, 2019).

Risk management involves systematically and continuously applying policies, procedures, conduct, and resources to identify, analyze, assess, communicate, and control risks and incidents affecting safety, human health, professional integrity, the environment, and institutional image (BRAZIL, 2013).

Thus, it is emphasized that adopting safety practices is intrinsically associated with managing risks related to patient safety in healthcare. This is because adopting safety practices requires frequently reviewing work processes and aligning them with safe standards (BRASIL, 2024).

Given the importance of this subject, it is crucial to examine the scope of the debate on this topic in research conducted at higher education institutions in Portugal. After all, issues related to patient safety are of global importance and are continually emphasized by the WHO.

However, despite the international relevance of the topic, there is a scarcity of studies that systematize Portuguese academic production on risk management and incident reporting. Therefore, this study aims to systematize and outline the historical panorama of academic and scientific production on this topic, thereby improving knowledge in this area and its objects of scientific investigation within an international context.

Based on the information provided, the objective of this study is to identify and analyze evidence from Portuguese scientific publications concerning the management of security incident risks in hospital settings.

METHOD

This is a study of Portuguese trends in theses and dissertations using a narrative literature review. It aims to investigate the themes, focusing on trends, nature, and comprehensive production related to the proposed topic (BRUM, 2016).

Therefore, the research was conducted in September and October 2024 in *RepositoriUM*, the scientific repository of *Universidade de Coimbra*, and *Repositório Científico de Acesso Aberto de*

Portugal (RCAAP). To answer the research question "What is the evidence from Portuguese scientific publications regarding the risk management of safety incidents by healthcare professionals in a hospital setting?", the PICo strategy was employed. P = population (healthcare professionals); I = phenomenon of interest (safety incidents and their reporting); and Co = context (hospital). The terms "patient safety," "risk management," "incident reporting," and "adverse events" were used for the search in the aforementioned data sources.

Concerning the study's eligibility criteria, we considered scientific publications on incident risk management, emphasizing incident reporting and patient safety in hospitals in Portugal. Studies that were unavailable in their entirety or had restricted access were excluded. To encompass a greater number of publications, time frame was not limited. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart guided the selection process (GALVÃO *et al*., 2015).

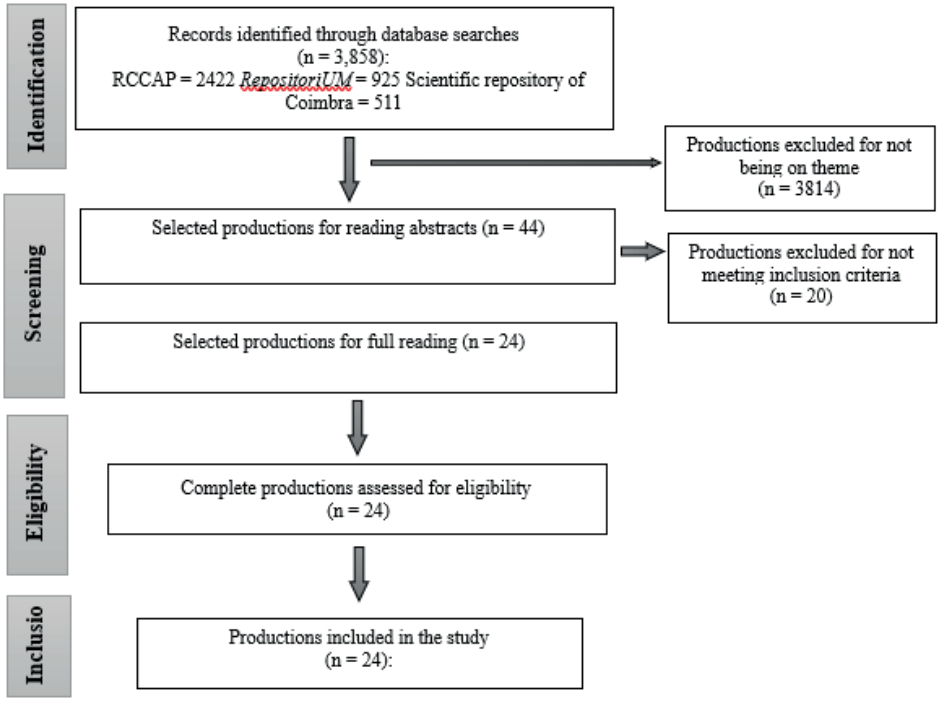
Bardin's content analysis was used for data analysis, organized by thematic categories. Additionally, a synoptic table was created in Microsoft Word containing the following data from the reviewed publications: author, year of publication, publication title, study origin (higher education institution), publication type (thesis or dissertation), area of specialization, study method/design, and target audience. This data was presented using absolute (n) and relative (%) frequencies.

In this study, it is noteworthy that there was no need to assess the ethical precepts of research, since the study exclusively used publicly available and open-access information sources. However, the extracted data were treated authentically.

RESULTS AND DISCUSSION

Of the thousands of publications retrieved from the information sources used, 44 were selected for full-text reading after reading the titles and abstracts. Twenty of these were excluded for not reporting on the study's theme, leaving 24 to constitute the final corpus, as presented in the flowchart of the selection process (Figure 1). There were no duplicate studies. The study data were organized and presented by the following categories: characterization of the analyzed publications; incidents studied and contributing factors to their occurrence; facilitators and obstacles to incident reporting; and risk management strategies for patient safety, safety culture, and reduction of incident occurrence.

Figure 1 - Flowchart of the selection process for productions identified in databases.



Source: Created by the author.

Production characteristics

Of the 24 included productions, all (100%) referred to dissertations, and no theses were identified. The predominant publication year was 2023, with 25% (n=6) of studies. This was followed by 2015, with 16.67% (n=4). The remaining years represented were 2013, 2021, and 2022, with 12.50% (n=3) each, 2018 with 8.33% (n=2) studies, and 4.17% (n=1) study each for the years 2014, 2017, and 2024.

Of the productions, 33.33% (n=8) came from the School of Nursing at *Universidade de Coimbra*, and 33.33% (n=8) came from the School of Nursing at *Universidade de Lisboa*. The *Universidade do Minho* and the School of Nursing at the *Universidade do Porto* accounted for 16.67% of productions (n=4).

In terms of area of specialization, 25% (n=6) of studies referred to nursing management, and 20.83% (n=5) referred to medical-surgical nursing. Twelve and a half percent (n=3) of studies were related to nursing in unit management and direction, and leadership of nursing services. Additionally, 8.33% (n=2) of studies focused on nursing in child and pediatric health. The remaining specializations - clinical engineering, nursing clinical supervision, biomedical engineering, and health unit management - accounted for 4.17% (n=1) of studies.

As for methodological design, 70.83% (n = 17) of studies used a quantitative method. Twenty percent (n=5) were qualitative studies. Additionally, mixed methods were employed, with 4.17% (n=1) of each type (Chart 1).

Chart 1 - Characterization data of analyzed productions. Braga, Portugal, 2025.

ID	Author/Year of publication	Title	University/School	Type of production/ Area of expertise	Design/Method
P1	Rocha, D.F.C./2024	*Gestão do Risco: Notificações de Incidentes de Queda Hospitalar*	*Universidade do Minho*/ School of Economics and Management	Dissertation/health unit management	Descriptive, cross-sectional, and quantitative
P2	Martins, R.R.P./2013	*Sistema de Notificação de Eventos Adversos em Ambiente Hospitalar*	*Universidade do Minho*/ School of Engineering	Dissertation/biomedical engineering	Descriptive
P3	Cunha, S.M.B./2013	*Quedas dos Doentes e Eventos Sentinela no Hospital de Braga: Análise dos Eventos e Custos Associados*	*Universidade do Minho*/ School of Engineering	Dissertation/clinical engineering	Descriptive and quantitative
P4	Silva, T.I.B./2022	*Gestão do risco de incidentes terapêuticos na Pessoa em Situação Crítica: melhoria da qualidade e segurança dos cuidados de enfermagem*	*Universidade do Minho*/ School of Nursing	Dissertation/nursing	Intervention study
P5	Simões, P.J.F.F./2023	*Cultura de segurança do doente em unidades com procedimentos anestésicos fora do bloco operatório*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/medical-surgical nursing	Quantitative, descriptive, and correlational
P6	Santos, M.F.R./2023	*Contributos do enfermeiro gestor na cultura de segurança*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/nursing care unit management	Exploratory-descriptive and qualitative
P7	Costa, M.M.C.S./2023	*Prática Baseada na Evidência e Cultura de Segurança do Doente em Cirurgia de Ambulatório: Um Estudo Correlacional*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/nursing care unit management	Quantitative, exploratory, cross-sectional, descriptive-correlational
P8	Pinto, T.M.B.A./2022	*Papel do enfermeiro gestor na implementação de estratégias para diminuir a ocorrência de erros de medicação, num Serviço de Urgência*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/care unit management	Cross-sectional, quantitative, descriptive-correlational
P9	Matias, A.C.R/2021	*Avaliação da Cultura de Segurança de uma Unidade de Cirurgia Ambulatória*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/medical-surgical nursing	Exploratory/descriptive, cross-sectional and quantitative
P10	Neves, E.C./2018	*Perceção dos enfermeiros sobre o erro de medicação: Causas Primárias e Tipos de Erro*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/medical-surgical nursing	Descriptive correlational and quantitative
P11	Costa, R.M.F.M.S./2017	*Eventos adversos associados aos cuidados de enfermagem num serviço de urgência*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/medical-surgical nursing	Descriptive and correlational
P12	Pedreira, M.F.R./2015	*Segurança de doentes e eventos adversos associados à prática de enfermagem em cuidados intensivos*	*Escola Superior de Enfermagem de Coimbra*	Dissertation/medical-surgical nursing	Descriptive and correlational

P13	Ferreira, A.M.S./2023	*Segurança do doente e o erro de medicação: qual o contributo da supervisão clínica*	*Escola Superior de Enfermagem do Porto*	Dissertation/clinical supervision in nursing	Mixed, descriptive, cross-sectional and correlational
P14	Cunha, C.J.P/2023	*Desenvolvimento de uma tecnologia e-health: medicação sem dano*	*Escola Superior de Enfermagem do Porto*	Dissertation/direction and headship of nursing services	Methodological
P15	Ribeiro, A.C.M./2023	*A visibilidade da cultura de segurança nos serviços de pediatria*	*Escola Superior de Enfermagem do Porto*	Dissertation/direction and headship of nursing services	Qualitative
P16	Mota Ferreira, D.N./2021	*Segurança do doente em psiquiatria: processo de gestão*	*Escola Superior de Enfermagem do Porto*	Dissertation/direction and headship of nursing services	Qualitative
P17	Constâncio, J.L./2021	*Identificação Inequívoca do Doente: avaliação do Plano Nacional de Segurança do Doente*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/management in nursing	Quantitative, observational, descriptive, retrospective and longitudinal
P18	Costa, J.L.T./2022	*Práticas de Notificação, Análise e Prevenção de Incidentes: Avaliação do Plano Nacional de Segurança do Doente*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/management in nursing	Observational, descriptive, longitudinal and quantitative
P19	Grilo, A.L.M.C./2018	*A Cultura de Segurança do Doente na Clínica de Hemodiálise*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/nursing management	Quantitative, observational, descriptive, and cross-sectional
P20	Varão, S.C.T./2015	*A Cultura de Segurança d o Doente em Contexto Hospitalar*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/nursing management	Quantitative, observational, descriptive, and cross-sectional
P21	Santos, S.M.L./2015	*A Cultura de Segurança do Cliente nas Unidades de Cuidados Continuados Integrados*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/nursing management	Quantitative, observational-descriptive, and cross-sectional
P22	Oliveira, H.C.S.A./2015	*Notificação de incidentes como prática para a segurança em pediatria - Domínios e Desafios do Enfermeiro Especialista no Contexto de Cuidados Intensivos*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/child and pediatric health nursing	Quantitative
P23	Inácio, M.S.C./2014	*Cultura de Segurança nas Unidades de Cuidados Continuados Integrados, na perspetiva do Enfermeiro Gestor*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/nursing management	Quantitative, observational-descriptive, and cross-sectional
P24	Carreira, P.N./2013	*Erro Terapêutico em Pediatria: Perspetivas e Práticas dos Enfermeiros*	*Escola Superior de Enfermagem de Lisboa*	Dissertation/child and pediatric health nursing	Qualitative

Source: Prepared by the author. Braga, Portugal 2025.
Legend: ID = identification. P = production.

Incidents and contributing factors to their occurrence

After analyzing the productions, the main incidents investigated were patient falls (ROCHA, 2024; CUNHA, 2013) and medication-related events, such as wrong administration, wrong time, and wrong prescription (NEVES, 2018; FERREIRA, 2023; OLIVEIRA, 2015; CARREIRA, 2013), and medication incidents, such as wrong dose and wrong patient (CUNHA, 2023).

In light of patient fall incidents, it is important to regularly analyze fall profiles to plan and implement care improvement measures and develop and enhance evidence-based patient safety and risk management systems. Furthermore, given its role in consolidating a patient safety culture, it is essential to invest in the continuous strengthening of the process of spontaneously reporting patient fall incidents (HERMANN *et al.*, 2023).

Furthermore, medication-related incidents are among the most frequently reported incidents in the analyzed data. Professionals tend to be more apprehensive about reporting this type of occurrence for various reasons, which hinders the analysis of root causes and the implementation of corrective measures to prevent recurrence. These incidents pose a significant risk to patient safety since medication-related events can have serious consequences depending on the route of administration, including severe health damage and, in extreme cases, death.

A study of nurses in the Czech Republic highlighted the importance of standardized research on medication administration incidents. This type of research is an essential tool for identifying risks in medication preparation and administration. Furthermore, it was demonstrated that assessing the causes of medication-related incidents helps healthcare professionals and administrators plan and implement targeted preventive and corrective strategies to improve patient safety and quality of care (BRABCOVA *et al.*, 2023).

The reviewed studies identified several factors that contribute to incidents, including: insufficient human resources; increased fatigue among healthcare professionals; inadequate communication and organization of services (CUNHA, 2023); work schedules exceeding 40 hours per week; interruptions and distractions during medication preparation (NEVES, 2018; FERREIRA, 2023; CARREIRA, 2013); lack of vigilance and clinical judgment; inadequate physical structure; patient overcrowding (COSTA, 2017); absence of bed rails; performance of daily activities without professional supervision (ROCHA, 2024); and incomplete prescriptions (FERREIRA, 2023). Other highlighted factors include adverse working conditions such as noise, overload, stressful situations, and inadequate medication storage (CARREIRA, 2013).

Situations related to incidents in healthcare institutions require continuous analysis by management and healthcare providers. This joint effort aims to establish robust preventive measures against contributing factors that lead to incidents. These factors have been identified as determinants of incidents and their underreporting, a widely discussed problem in the literature. However, these

issues remain primary causes frequently cited by healthcare professionals during investigations. Thus, a more in-depth analysis at the managerial level is essential to verify whether the proposed strategies are effectively being implemented in a decisive manner (FERREIRA; DIXE, 2024; CAMPOS *et al.*, 2023).

A study of 241 patients indicated that 181 of them experienced adverse events, with a prevalence of 75%. Specifically, seven out of ten patients experienced adverse events during the one-month therapeutic process. These events were related to hemodialysis care, and 84.11% of the cases resulted in mild harm to patients (LOBO; FEBRÈ, 2018).

A study of 241 patients revealed that 181 of them, or 75%, experienced adverse events. Specifically, seven out of ten patients experienced adverse events during the one-month treatment period. The events were related to hemodialysis care, and 84.11% of cases resulted in mild patient harm (SOUSA *et al.*, 2018). Moreover, it was shown that adverse events are associated with hospital characteristics, as the probability of events occurring is higher if the hospital has a reporting system, is accredited, is medium-sized, and is a university teaching hospital (SOUSA *et al.*, 2018).

On the other hand, this fact may suggest that institutions with the aforementioned characteristics are the most committed to reporting adverse situations in care provision.

Thus, it is emphasized that recognizing the systemic or organizational factor is considered a relevant causal element in the occurrence of safety incidents. Therefore, priority should be given to causal aspects linked to the work system. In this way, reflection should be given to designing and executing proactive actions capable of preventing errors and safeguarding healthcare processes. Since mistakes are an inherent part of human nature, this approach is essential to mitigating the occurrence of incidents, limiting their impact on patients, and reducing harm when incidents cannot be avoided (BAÑERES *et al.*, 2014).

Therefore, information related to the occurrence of incidents in a hospital setting is an important indicator for decision-makers, managers, and healthcare professionals to consider when reflecting on the magnitude of impacts resulting from organizational factors that significantly influence healthcare practice. This makes it possible to direct efforts towards areas with the greatest opportunities for improvement. Thus, the importance of continuous and expanded discussion about patient safety is emphasized.

Facilitators and obstacles to incident reporting

Studies have pointed to the following as facilitators for incident reporting: a rapid response mechanism to reporting (ROCHA, 2024); a secure system for the person reporting; consideration of constructive feedback (MARTINS, 2013); analysis of the error as the result of a process and not as an isolated event; and healthcare professionals' involvement in the error management process (SIMÕES, 2023; FERREIRA, 2021).

Considering the above, it should be noted that all healthcare professionals are responsible for incident reporting, regardless of their category. Considering the frequent underreporting observed among these workers, as evidenced in the literature, effective communication within interprofessional teams is emphasized. Effective communication plays an essential role in demystifying incident reporting processes and promoting a greater willingness among healthcare professionals to report incidents or situations that compromise patient safety (SANTOS; JÚNIOR; SILVA, 2022).

Managers and leaders of healthcare institutions should pay attention to the factors that encourage incident reporting by healthcare professionals. They should promote this practice through training or continuing education that considers these factors so that healthcare workers are more aware of its importance for quality of care and patient safety (ABDELMAKSOUD *et al.*, 2023; SANTOS; JÚNIOR; SILVA, 2022).

A study by Nazário *et al.* (2021) identified several factors that facilitate safety culture, including encouraging voluntary and confidential reporting, involving professionals responsible for providing assistance in planning safety actions, making assistance a systematic strategy to promote organizational cultural change, and actively involving senior management. These elements may be essential to strengthening a robust safety culture.

Another facilitating element to be highlighted refers to the strengthening of the safety culture, supported by teamwork, managerial preparedness in the face of incidents, transparent communication, and effective transmission of information among professionals, as well as the appropriate ratio between the number of workers and patients. Furthermore, the authors suggest that reward mechanisms can contribute to increasing professionals' willingness to report incidents (ABUOSI *et al.*, 2022).

Responsibility for patient safety and quality of care involves more than just reducing incidents; it requires a dynamic and continuous learning process. In this context, incidents are viewed as opportunities for improvement that encourage healthcare professionals to report incidents or failures in care processes that compromise patient safety (ARAÚJO *et al.*, 2024). With this responsibility, professionals may be more predisposed to adhere to reporting procedures.

In relation to the obstacles to reporting, the productions highlighted the following: free-text descriptions of the facts, crucial for providing a complete context, but susceptible to omissions and variability (ROCHA, 2024); lack of communication and feedback regarding the reported incident (SIMÕES, 2023; MATIAS, 2021; PEDREIRA, 2015); a punitive culture, fear of reprisals, and blame (SANTOS, 2023; COSTA, 2023; FERREIRA, 2023; GRILO, 2018; VARÃO, 2015; SANTOS, 2015; INÁCIO, 2014; CARREIRA, 2013); insufficient funding; inefficient interoperability; resistance to change; and scarcity and inoperability of material resources (SANTOS, 2023); critical support from management; and inadequate follow-up of reported incidents (COSTA, 2023), lack of anonymity in reporting (MOTA FERREIRA, 2021; OLIVEIRA, 2015), lack of support for patient safety by

management (VARÃO, 2015), demotivation of professionals to report, lack of systematized analysis of incidents that occurred and recommendations issued (OLIVEIRA, 2015).

A systematic review with meta-analysis highlighted that both nurses and physicians rated the non-punitive incident culture dimension as less positive (CAMACHO-RODRÍGUEZ *et al.*, 2022). Furthermore, when measuring patient safety culture from the perspective of nurses, Campos *et al. (*2023) pointed to low incident reporting by these professionals. They also reported experiencing punitive reporting by their supervisors. These results highlight the persistence of the perception of punitive reporting in healthcare organizations and represent an obstacle to risk management. This contributes to a lack of awareness of situations that compromise patient safety in care provided by healthcare professionals.

It is noteworthy that this situation leads to the underreporting of incidents by healthcare professionals, a behavior still deeply rooted in healthcare institutions (BRÁS *et al.*, 2023). In this context, 37.50% (n=9) of analyzed studies identified underreporting as a significant problem (SIMÕES, 2023; COSTA, 2023; PINTO, 2022; MATIAS, 2021; PEDREIRA, 2015; FERREIRA, 2023; CONSTÂNCIO, 2021; COSTA, 2022; OLIVEIRA, 2015). Furthermore, the study found a lack of priority interventions aimed at mitigating the underreporting of incidents (SIMÕES, 2023).

In their study with nurses at a public hospital in Indonesia, Pramesona *et al.* (2023) identified factors that contribute to the underreporting of incidents. These factors include a lack of transparency regarding incident reporting, blame, judicialization, insufficient socialization and training, an absence of feedback and a reward system, and punitive reporting.

A recent study identified the main obstacles as instability in reporting systems, difficulty of access, delays in completing incident reports, and the length of the forms (FERREIRA *et al.*, 2024). Despite the passage of several years since these systems were implemented in some healthcare institutions, challenges that compromise their effective use persist. Therefore, those responsible for managing these systems must critically assess quality of access and the effectiveness of incident reporting mechanisms to promote continuous improvement in the reporting process.

In order to prevent incidents, encourage reporting, and promote reducing adverse events in care, it is important to provide healthcare professionals with training that supports safe practices and fosters a culture of transparency and accountability (DOĞAN; KEBAPÇI, 2025).

Therefore, it is important to implement or update strategies that reduce institutional and behavioral obstacles hindering the reporting process and strengthen the identified facilitators. These measures can contribute to effective control and a more robust incident reporting system that fosters continuous learning (NAZÁRIO *et al.*, 2021).

Risk management strategies for patient safety, safety culture, and reducing the occurrence of incidents

The following strategies to improve risk management and safety culture stand out among those analyzed in the studies: health education and professional training; patient-centered teaching; optimization of staffing ratios; improvement of the incident reporting system (ROCHA, 2024); dissemination of quality and safety indicators; use of communication techniques such as briefing and debriefing (MATIAS, 2021); better human resource management; identification vests for nurses during medication preparation; adoption of technologies such as barcodes for medication administration (NEVES, 2018); nursing advocacy training; promotion of a non-punitive reporting culture; encouragement of behavioral changes (PEDREIRA, 2015); audits of professional practices; structured integration and supervision plans; support to reduce workload; and monitoring and feedback systems focused on reporting and stress management (FERREIRA, 2023).

Furthermore, the following measures were verified: completion of possible corrective action plans, knowledge of quality department, confirmation of actions taken by services to prevent incidents (MARTINS, 2013); prioritization of patient safety, increased attention from risk management, emphasis on improving incident reporting (CUNHA, 2013); development of a table for the safe reconstitution and dilution of medication, as well as a patient-specific medication manual according to health conditions (SILVA, 2022); maintenance of the use of the standard communication tool ISBAR (identification, current situation, background, assessment, and recommendations) (SIMÕES, 2023); accreditation (SANTOS, 2023); and promotion of a better understanding of evidence-based practices (COSTA, 2023).

Furthermore, the analyzed productions identified the following strategies: in-service training, implementation of policies and guidelines, and clinical protocols; mandatory electronic prescribing; and training for various professional groups on patient safety, focusing on reporting (PINTO, 2022; MATIAS, 2021; FERREIRA, 2023; CUNHA, 2023); incident discussion (RIBEIRO, 2023); professionals' involvement in preventing incident recurrence; prioritizing a systemic approach to incidents (SIMÕES, 2023; FERREIRA, 2021); streamlining reporting processes (CONSTÂNCIO, 2021); and assessing the usability of the method for analyzing reported incidents (COSTA, 2022).

A study conducted at a hospital in central Portugal identified debriefings, feedback, and training as strategies that encourage nursing professionals to report incidents, thereby improving quality of care (FERREIRA; DIXE, 2024).

Therefore, the literature widely discusses educational strategies such as capacity building, training, and guidance as fundamental to improving professionals' awareness of incidents, thereby promoting quality of care and a culture of patient safety in healthcare organizations (CAMPOS *et al.*, 2023; MASCARELLO *et al.*, 2022). Furthermore, the importance of using new technologies,

double-checking, and communicating with physicians to clarify prescription-related questions is emphasized. The goal is to reduce incidents in healthcare (MASCARELLO *et al.*, 2022).

On the other hand, the measures described in the literature to mitigate incidents are diverse. It is crucial, however, to assess the implementation of these measures and verify their validity to ensure they contribute to strengthening quality of care and safety culture.

This study reflects trends in Portuguese academic research on this topic and offers a comprehensive view of factors impacting patient care. Specifically, it emphasizes the importance of reassessing and updating existing practices to encourage incident reporting and address issues in healthcare. Above all, this approach aims to improve patient safety and develop new research strategies on the subject.

Another aspect that deserves discussion when it comes to promoting safe care is professionals' integration into the environment in which they provide care. As mentioned by Patrícia Benner in her work "From Beginner to Expert", this integration is key to patient safety. Benner emphasizes the importance of professional practice being shaped by learning that combines practical experience with the transmission of knowledge. This allows professionals to acquire skills progressively (FASSARELLA *et al.*, 2024).

However, this approach is essential for building a more cohesive and prepared team. Experienced professionals contribute their expertise alongside colleagues who are developing their skills. This exchange of knowledge and skills strengthens the team's technical capacity, minimizes safety incidents, and improves quality of care. By allocating and integrating professionals with different levels of experience, a continuous, safe learning environment is created that benefits professionals, patients, and the healthcare organization as a whole (FASSARELLA *et al.*, 2024).

Studies indicate that experienced professionals exhibit more well-established attitudes regarding patient safety culture than those with less experience. This consolidation can contribute to reducing incidents in care and sharing knowledge among colleagues in a healthcare setting (NYBERG *et al.*, 2024).

Furthermore, benchmarking is an effective strategy for improving quality of care. It involves comparing with other institutions and adopting best practices (SASSO *et al.*, 2019). In this context, implementing this strategy through health risk management can improve care and the safety culture in healthcare institutions.

To improve reporting adherence and encourage more in-depth incident analysis, it is essential to invest in effective continuing education programs for the multidisciplinary team (Moreira *et al.*, 2021). Furthermore, a comprehensive assessment of care provided in healthcare institutions is recommended.

In this context, Camacho-Rodríguez *et al.* (2022) conducted a systematic review that highlighted the potential association between the adoption of a patient safety culture in internationally accredited healthcare institutions and more sustainable organizational outcomes. The authors also emphasize the need for rigorous scientific studies to assess the impact of hospital accreditation on patient safety culture and other clinical, organizational, and patient-centered outcomes.

However, given the focus of this study on incidents and their reporting, it is clear that this issue must be addressed effectively from the training of healthcare professionals onward. Therefore, to strengthen a positive safety culture in institutions, it is essential that healthcare professional training programs integrate more mandatory content related to patient safety into their curricula. This content should prioritize topics such as effective communication, leadership, a non-punitive approach to incident reporting, continuous quality improvement, and teamwork (CAMACHO-RODRÍGUEZ *et al.*, 2022).

This study is limited by the exclusion of all information sources from higher education institutions of nursing and health in Portugal, which may have restricted access to relevant studies. Therefore, future research of this nature should encompass all higher education institutions of nursing and/or health to incorporate a greater diversity of academic productions on the subject. This will provide a more comprehensive and targeted basis for planning future investigations.

FINAL CONSIDERATIONS

The aim of this study was to seek evidence on Portuguese scientific productions related to incident risk management in security. It was found that all of the identified productions were master's theses based primarily on quantitative methods. These studies predominantly originated from the *Universidade de Coimbra* and the *Universidade de Lisboa* and were published in 2023. The areas with the greatest contributions were nursing management and medical-surgical nursing.

Among the analyzed categories, themes related to incidents, their reporting, and patient safety culture - frequently managed by the risk management department in healthcare institutions - were found to be a growing trend in Portuguese scientific publications.

Researchers can redirect their investigations to assess the effectiveness of strategies implemented by healthcare institution management. The goal is to ensure that healthcare professionals adhere to the proposed measures to promote a patient safety culture and that these measures positively impact quality of care and patient safety. This is a relevant direction because the review identified studies that mostly address strategies to reduce incidents, encourage reporting, and promote a positive safety culture. However, underreporting of incidents in healthcare practice remains high, as does the perception of punishment associated with reporting.

Therefore, it is suggested that investment be made in broader research, focusing on assessing the validity of strategies aimed at increasing employee adherence to incident reporting, reducing incident occurrence, and strengthening the safety culture within the organizational environment.

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