



# Challenges faced by nurses in ensuring patient safety in the emergency departments

## A literature review

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### **Challenges faced by nurses in ensuring patient safety in the emergency departments**

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#### **Abstract**

Nurses employed in emergency departments around the world face various challenges that affect their well-being and hinder their capacity to provide high-quality patient care. Prior studies have examined these challenges, analyzing their origins, effects, and possible remedies. A qualitative descriptive approach was used to explore the main challenges faced by nurses in emergency departments and the solutions proposed to address these problems

This study sought to examine the current literature regarding the challenges encountered by nurses in maintaining patient safety within emergency departments. Data were gathered from three databases: CINAHL, PUBMED, and MEDLINE. The search resulted in the identification of 12 articles, which were subsequently analyzed through conventional content analysis. From this analysis, five main categories were identified: Workforce challenges, Communication issues, Operational challenges, Environmental challenges, and Psychological and emotional challenges.

In conclusion, the investigation revealed that various factors contributed to the challenges in patient safety within emergency departments. These factors include staffing issues, excessive workloads, communication breakdowns, inadequate team skills, nursing care errors, lack of workflow standardization, insufficient support for nursing regulations, overcrowding, violence against nurses by patients or their relatives, deficient infrastructure, as well as stress, fatigue, and burnout. To address these issues, it is essential to enhance the education and training of nurses, thereby improving the quality of care and efficiency of services in emergency departments. Also, management should ensure that nurses receive adequate role support.

#### **Keywords/tags (subjects)**

Emergency departments (EDs), nurses, overcrowding, staffing issues, nursing protocols

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# 1 Introduction

Emergency departments are essential components of modern healthcare systems, serving as the first point of contact for patients in need of immediate medical attention (WHO, 2021). They are considered high-risk environments due to the quick turnover of patients, overcrowding, limited resources and deficient infrastructure, low staffing and the constant requirement to handle life-threatening situations. These reasons create an environment where adverse events are likely to occur and increase the challenge in ensuring patient safety (Al-Ghabeesh et al., 2023).

Ensuring patient safety in emergency departments (EDs) presents a complex challenge that nurses encounter on a daily basis. WHO, (2023) defines patient safety as “a structured set of activities designed to minimize risks, decrease the frequency of preventable harm, lessen the likelihood of errors, and mitigate the consequences of harm when it occurs” (WHO, 2023). In a dynamic and high-pressure setting of emergency departments (EDs), ensuring patient safety is of utmost importance. Nurses, serving as primary caregivers, are essential in navigating the challenges involved in emergency medical situations. They encounter numerous challenges that may hinder their capacity to ensure patient safety (Petrino et al., 2023, Skowron et al., 2019, (Yarmohammadian et al., 2017). These challenges include high patient acuity and volume, insufficient staffing levels, overcrowding, limited resources and infrastructure, poor communication, and the emotional and psychological stress associated with the work environment. The various factors not only increase the likelihood of medical errors and adverse events but also place considerable stress on nursing personnel, thereby affecting their performance and overall well-being (Petrino et al., 2023, Skowron et al., 2019, (Yarmohammadian et al., 2017)

Addressing these challenges needs a comprehensive understanding of emergency care nursing, accompanied by the development of effective strategies, interventions, and support systems (Considine et al., 2024; Austin et al., 2020) This involves ensuring adequate training of emergency nursing staff, staffing levels, providing access to necessary resources and equipment, and implementing programs designed to support the mental and emotional well-being of nurses. By prioritizing the well-being of the nurses, patient outcomes can be improved (Considine et al., 2024; Austin et al., 2020).

The aim of the study is to conduct a literature review exploring the challenges faced by nurses in ensuring patients safety within the emergency department.

## **2 Emergency Departments and patient safety**

### **2.1 Definition and overview of Emergency Departments**

The emergency departments (ED), are specialized unit within the hospital that provide immediate care and medical attention to patients with a wide range of medical conditions, ranging from minor ailments to critical emergencies (Mohammadi et al., 2024, Alharethi et al., 2019). This unit is considered one of the most crucial units in hospitals, as it plays a vital role in saving the lives of patients who are in critical condition and need immediate or urgent care and support. They are equipped with medical facilities that operate around the clock, serving as the front line in addressing unforeseen medical cases of multiple patients of different ages while prioritizing those who are critically ill due to conditions such as myocardial infarction, stroke, sepsis, respiratory distress, or multisystem trauma (Farmer, 2016). In the ED, time is important, and every second counts, which is why prompt and efficient delivery of medical interventions is essential. The goal of the EDs is to provide emergency care as quickly and efficiently as possible, as this can make a significant difference in the outcome for patients (Amanian et al., 2020).

The EDs operate in a dynamic and high-pressure environment that requires a comprehensive understanding of various medical conditions and a diverse set of abilities to carry out urgent and life-saving interventions (Farmer, 2016). Generally, EDs are staffed by multidisciplinary teams of healthcare professionals, including doctors, nurses, technicians, and support staff who operate around the clock, serving as the front line in addressing unforeseen or critical medical cases in a timely and comprehensive way (Farmer, 2016).

These units are commonly located within hospitals or as independent emergency departments. They address various healthcare needs and are classified accordingly; paramedics and Emergency Medical Technicians (EMTs) have a crucial role in providing essential life support skills to stabilize patients upon their arrival at the ED, which includes cardioversion, airway management, and chest compressions (Pini et al., 2020). Furthermore, triage units within general hospitals act as the primary entry point for patients seeking urgent medical care outside regular office hours, prioritizing

patients based on the severity of their condition to ensure that critical cases receive prompt attention (Mostafa & El-Atawi, 2024).

Emergency departments are equipped with advanced medical equipment and technology to rapidly assess, treat and refer any illness or injury for further care. This may include individual imaging machines such as X-ray machines and CT scanners, laboratory installations for immediate testing, and technical equipment for cardiac monitoring, airway operation, and trauma care. They are equipped with diagnostic capabilities such as imaging and laboratory services to promptly evaluate and diagnose patients (Pini et al., 2020). Once stabilized, patients may be referred for additional treatment or hospital admission, while those with less severe conditions receive appropriate follow-up instructions and are discharged accordingly. The effective use of various equipment is crucial for optimizing patient care in EDs. This includes life-saving devices like defibrillators and automated external defibrillators (AEDs) to restore normal cardiac rhythm during cardiac arrests or ventricular fibrillation. Monitors for continuous vital sign monitoring allow for early detection of deteriorating conditions and timely interventions, utilizing electroencephalography (EEG), arterial blood gases (ABG), and pulse oximetry. Infusion pumps are also used to administer fluids or nutrients directly into patients' bloodstream, ensuring precise dosing and minimizing adverse effects. By integrating specialized teams and advanced equipment, EDs aim to provide rapid, effective, and lifesaving care to patients in need. (Pini et al., 2020, Mostafa & El-Atawi, 2024).

## **2.2 Patient Safety in emergency departments**

Patient safety constitutes a critical component of healthcare systems in different countries. It refers to the prevention of errors and adverse effects associated with healthcare that could harm patients (WHO, 2021). This includes ensuring that all medical procedures and interventions are carried out accurately, that medications are administered correctly, and that patients are kept safe and protected from any potential harm (WHO, 2021). Patient safety is of utmost importance in healthcare, as it aims to prevent avoidable harm and minimize risks associated with nursing care to an acceptable level (WHO, 2021). It involves a range of strategies and practices that include various elements such as cultures, processes, procedures, behaviors, technologies, and environments within healthcare settings designed to prevent harm to patients during their interactions with the healthcare system (Lawati et al., 2018; WHO, 2021).

The Global Patient Safety Action initiated by the World Health Organization (WHO) for the period 2021-2030 provides a comprehensive definition of patient safety as a multifaceted approach. It requires the identification, mitigation, and prevention of errors, accidents, infections, and other adverse events that may occur during the delivery of care services (Lawati et al., 2018 ; WHO, 2021). To achieve this, a comprehensive approach is necessary, which involves the systematic identification and management of risks/infections, as well as effective communication and collaboration among healthcare professionals. Also, a well-established systems and strict protocols, competent staff, and a strong commitment to fostering a culture of safety in the EDs (Ricciardi & Cascini, 2021).

Emergency Departments play a critical role in providing urgent and immediate medical attention to patients with critical and potentially life-threatening conditions (Rafael Suárez del Villar, 2024). However, given the constant patient flow, exposure to external conditions, overcrowding, communication barriers, inadequate staff, work violence, limited resources, and the need for quick decision to life-threatening situations, the department is considered high-pressure and requires prioritizing patient safety. (Petrino et al., 2023).

Recent research by the Agency for Healthcare Research and Quality (AHRQ) has found that patient safety incidents in emergency departments (EDs) are on the rise, mainly due to the complex nature of care delivery, critical patient conditions, and the need for rapid decision-making (AHRQ, 2015). To ensure the safety of patients in these settings, it is essential to address challenges with specific considerations. Examples of such considerations include prompt and accurate triage, good communication and teamwork collaboration among nurses, adherence to evidence-based clinical protocols and guidelines, safe administration of medications and continuous initiatives for quality improvement (Reis et al., 2018). These key components contribute to enhancing patient safety in EDs, as supported by (Kim et al. 2020; Weile et al., 2021; Sharara-Chami et al., 2020).

Negligence in patient safety can have devastating consequences for patients. It can lead to unwanted serious injuries, such as surgical errors, medication errors, infections, or falls, which can result in permanent disabilities or even death. According to a report by the Institute of Medicine (IOM p.31), "there are a large number of deaths every year in the United States that result from avoidable medical errors, ranging from 44,000 to 98,00" (IOM, 2000). The complex and error-

prone environment of EDs is due to various factors, such as limited information, fragmented records, brief clinical encounters, a high-risk patient population, and high patient volumes (Albarrak et al., 2020). Apart from these factors, communication breakdowns, frequent interruptions, and distractions, negligence of safety standards and standard precautions, as well as handoffs, pose significant challenges for nurses in ensuring patient safety in EDs (Amanian et al., 2020). Therefore, it is of utmost importance to prioritize the safety of patients in EDs. EDs to prevent adverse events and ensure that patients get the best possible holistic care. By addressing these challenges and implementing effective safety protocols, nurses can significantly reduce the risk of patient harm in the EDs.

## **2.3 Factors affecting patient safety in the Emergency Departments**

### **2.3.1 High patient acuity and time constraints**

Emergency Departments (EDs) are responsible for handling acute cases, such as traumas and cardiac arrests, where patients require immediate intervention. The high level of patient acuity in EDs can lead to increased pressure on nurses and ED teams, as the need for quick and accurate interventions is crucial (Yiadom et al., 2018). However, the combination of high acuity and urgency can create stressful work environments, which can potentially lead to burnout among nurses. The high acuity level of patients in EDs also adds to the complexity of care (Yiadom et al., 2018). Nurses are often faced with managing multiple highly critical patients simultaneously, which increases the risk of adverse events. The need for immediate treatment can lead to stress, decision-making challenges, and a higher risk of errors among nurses, which can ultimately impact patient safety. Nurses must be vigilant and alert to any changes in patient's conditions to provide timely interventions in acute situations (Vaismoradi et al., (2020).

In the ED, it is crucial to make quick clinical decisions and prioritize care (Pavedahl et al., 2022). However, the urgency to address immediate patient needs can sometimes restrict the time available for thorough assessments, monitoring, and interventions, which may pose a risk to patient safety (Eriksson et al., 2018). Nurses working in EDs frequently encounter time constraints that impede their capacity to conduct comprehensive assessments, potentially resulting in errors in diagnostic judgment. This error may lead to harm or deaths of patients (Govasli & Solvoll, 2020).

The presence of time constraints hinders the capacity of ED nurses to make quick decisions and engage in critical thinking (Govasli & Solvoll, 2020). The urgency of the circumstances frequently results in inadequate time for thorough patient evaluations, detailed analysis of diagnostic exams, and the development of accurate treatment strategies. This time limitation can force nurses to make rushed decisions, which could result in mistakes and substandard patient care (Govasli & Solvoll, 2020)

In emergency departments (ED), the challenge of high nursing turnover persists and continues to worsen, leading to high vacancy rates (McDermid et al., 2020). The existence of high nursing vacancy rates in EDs may lead to various unfavorable consequences, including overcrowding, longer waiting times, decreased patient satisfaction, and an inability to implement evidence-based patient care (McDermid et al., 2020). These factors contribute to stress, burnout, compassion fatigue, and posttraumatic stress disorder (PTSD). Notably, PTSD is significantly more prevalent among emergency nurses compared to nurses in other specialties. A study conducted in Ireland, involving 117 ED nurses, revealed that 64% of the respondents experienced symptoms of PTSD (McDermid et al., 2020).

### **2.3.2 Communication barriers**

Good and effective communication is vital in ensuring patient safety and delivering quality care, especially in demanding environments like emergency departments (Pun et al., 2015). The emergency department faces numerous communication challenges and risks due to the ever-growing complexity of its environment. This complexity results from various factors, such as round-the-clock care, rising demand, quick turnover, temporary inexperienced staff and irregular nature of emergency treatment, and the linguistic and cultural diversity among nurses and patients (Pun et al., 2015). These high-stress environments prevent the seamless exchange of information among team members, compromising patient safety and care outcomes (Blackburn et al., 2019). Whenever care is transferred to another provider with breaks in communication, crucial information is lost, leading to a lack of follow-up, diagnostic errors, and improper care (Al-Kalaldeh et al., 2020). This may lead to serious consequences that may have been prevented if communication was more effective. In such time-critical settings, the pressure can often lead to rushed, inadequate, or unclear communication among team members. Poor communication in EDs can lead to serious consequences, including incorrect diagnoses and inappropriate treatment plans that can jeopardize

patient safety or harm the patient (Al-Kalaldehy et al., 2020). For example, the use of medical terminology can be a barrier to effective communication between nurses and patients (Lippke et al., 2019). Howick et al., (2024) revealed that miscommunication can result in medication errors or misdiagnosis which may lead to patient safety risks.

In today's world, technology has revolutionized the way we communicate with each other. While technological advancements have the potential to enhance communication and make it more efficient, the use of faulty digital tools and the integration of electric health records may also hinder patient safety practice. Nurses often face numerous challenges when it comes to navigating different systems and exchanging patient information, especially due to the lack of interoperability among electronic health record systems, data security, and provider burnout (Adeniyi et al., 2024). The absence of a standardized system for information exchange often results in delays, errors, and miscommunication between nurses, which can have a significant impact on patient outcomes (Cooper et al., 2021).

### **2.3.3 Workplace violence and information overload**

Violence in the workplace includes any form of physical violence, harassment, intimidation, or other disruptive behavior that poses a threat, ranging from verbal abuse and threats to physical assaults and potentially even homicide, resulting in a detrimental impact on nursing performance (Howard & Robinson, 2023, Oliveira et al., 2020). The Joint Commission defines workplace violence as "An act or threat occurring at the workplace that can include any of the following: verbal, nonverbal, written, or physical aggression; threatening, intimidating, harassing, or humiliating words or actions; bullying; sabotage; sexual harassment; physical assaults; or other behaviors of concern involving staff, licensed practitioners, patients, or visitors (Joint Commission, 2022). This phenomenon can be attributed to various factors, including the escalating case of patient, overcrowding, prolonged wait times and the naturally stressful nature of emergencies (Joint commission, 2022). The presence of agitated patients or their relatives further worsens the stress levels experienced by nurses, diverting their attention away from their primary responsibilities and ultimately posing potential safety risks to patients. Nurses who experience violence may sustain injuries, resulting in either absence from work or reduced productivity (Alshehri, 2017). However, the psychological impact can be extensive emotional exhaustion, depression, post-traumatic stress disorder, and ultimately compromising patient safety (Oliveira et al., 2020, Alshehri, 2017). A study

survey conducted in India revealed that out of 235 participants working in the emergency department, 67% reported witnessing verbal abuse, while 17% had personally encountered physical violence mainly caused by family members (Sachdeva et al., 2019).

Emergency Departments often face information overload, which includes a wide range of sources like electronic health records, laboratory results, radiology reports, and clinical observations (Sbaffi et al., 2020). The challenge lies in efficiently processing and integrating this vast amount of information within a constrained timeframe, leading to a higher risk of confusion and mistakes (Sbaffi et al., 2020).

#### **2.3.4 Workload and staffing issues and overcrowding**

ED nurses commonly face an extremely demanding workload due to the high volume of patients seeking care and the increasing complexity of patients' conditions, leading to variable workload pressures and risks. This frequently causes nurses to experience overwhelming workloads, which can ultimately lead to burnout and compromised patient care (Al-Mugheed et al., 2022). The need to promptly evaluate, diagnose, and treat patients can contribute to heightened stress levels among staff, impacting their overall welfare and patient safety (Al-Mugheed et al., 2022). The overwhelming workload may hinder nurses' capacity to sustain optimal levels of concentration and attentiveness, potentially leading to mistakes and less-than-ideal patient results (Källberg et al., 2017). Emergency departments experience a significant workload, which can place a burden on staff and result in both psychological and physical challenges. The strain is influenced by various factors such as the necessity for prompt decision-making, a large influx of patients, limited resources, patient dissatisfaction, and disruptions in the workflow (Skowron et al., 2019)

Staffing shortages pose a significant challenge for nurses working in Emergency Departments (EDs), often resulting in increased workloads and burnout among nursing staff (Iordache et al., 2020, (Mohammadi et al., 2024). The lack of personnel can impede the timely and thorough delivery of care, resulting in longer waiting times for patients and delayed interventions (Mohammadi et al., 2024). Moreover, inadequate staffing levels can hinder the effective implementation of triage systems, further burdening the available resources and compromising the quality of patient care (Recio-Saucedo et al., 2015). Understaffing has been linked to increased mortality rates among patients, longer hospital stays, and a higher risk of adverse events (Källberg et al., 2017).

According to a study by Ramsey et al., (2018), insufficient staffing levels in EDs can impede timely responses to patient needs and contribute to errors and adverse events and also underline the detrimental impact of staffing shortages on patient safety and care quality in emergency settings.

Overcrowding in EDs has been identified as a significant concern for patient safety and a global public health challenge (Morley et al., 2018, Savioli et al., 2022). It is commonly defined as the excessive number of patients in the treatment areas, surpassing the capacity of the ED (Rasouli et al., 2019). Various factors contribute to overcrowding in emergency departments, including non-urgent visits, limited availability of inpatient beds, and a shortage of human resources (McKenna et al., 2019, Sartini et al., 2022). Also, due to the scarcity of family physicians and walk-in clinics, the restricted operating hours of existing clinics and health centers, and the increasing number of elderly individuals, the problem of overcrowding arises (Yarmohammadian et al., 2017, McKenna et al., 2019).

Consequently, this constant overcrowding directly affects patient safety by increasing the likelihood of medical errors due to overworked staffs, increased stress and violence and increase inpatient mortality (Morley et al., 2018, Rasouli et al., 2019). Eriksson et al. (2018) identified overcrowding as a substantial obstacle for nurses in delivering safe care, resulting in heightened workload, elevated stress levels for staff, and potential compromises to the timeliness and quality of patient care

### **2.3.5 Limited material resources**

Limited availability of resources in EDs can have significant implications for patient safety. In emergency situations, every second counts, and nurses rely heavily on having immediate access to necessary tools and technologies. However, when these resources are scarce, it may lead to delays in providing critical care, overcrowding and extended waiting times potentially threatening patient safety (Ahsan et al., 2019). Ahsan et al., (2019) investigate how constraints like understaffing, lack of proper equipment, and inadequate facilities affect nurses' ability to deliver safe care. These limitations contribute to a high stress setting where nurses must make tough decisions about task prioritization, potentially impacting the standard of patient care (Ahsan et al., 2019).

Inadequate staffing hinder nurses' ability to provide timely and appropriate care to patients, potentially compromising patient safety (Afaya et al., 2021). Eriksson et al., (2018) noted that multi-tasking resulting from low staffing may diminished concentration and an increased probability of mistakes, especially during periods of heightened patient demand. They indicated that inadequate nurse-to-patient ratios correlated with a rise in the number of patients who left the emergency department without receiving care, as well as extended wait times. These factors can exacerbate patient conditions and lead to adverse health consequences (Eriksson et al., 2018). Nurses often require specific equipment and medications to effectively manage emergencies and stabilize patients. Without access to these vital resources, nurses may be forced to make do with suboptimal alternatives which can increase the risk of errors and adverse events (Afaya et al., 2021).

Moreover, delays in acquiring necessary resources can further exacerbate the difficulties faced by nurses in EDs. When nurses are unable to provide timely and optimal care due to resource constraints, it leads to increased patient wait times, overcrowding, and decreased patient satisfaction (Paling et al., 2020). This scarcity are of various essential components, including medical equipment, medications, and facilities (Butler et al., 2020). These circumstances give rise to frustration, anger, and a sense of helplessness among nurses.

## **2.4 Key roles and responsibilities of nurses ensuring patient safety in the emergency departments**

In the dynamic environment of the emergency department (ED), nurses play a multifaceted and indispensable role in safeguarding patient safety. The main function of the nurse is to stabilize patients and provide critical medical care, which may involve triaging, diagnosing, and treating acute illnesses, managing severe injuries, providing resuscitation in cases of cardiac arrest, and initiating life-saving interventions. Nurses in the EDs have the unique ability to quickly address unforeseen and critical medical situations and offer immediate and comprehensive assessment to patients needing care. They aim to cater to patients with different health complexities, ensuring quick and accurate diagnosis and treatment (Lloyd-Rees, 2016). Emergency Departments nurses also play a crucial role in coordinating patient care, they work in close collaboration with specialists in arranging hospital admissions or facilitating transfers to advanced departments of care.

They communicate the status of critically ill patients; utilize ISBAR communication tools effectively; deliver culturally sensitive care in collaboration with emergency department staff, patients, and their families. Nurses play a crucial role in overseeing the care of patients experiencing shock and septic shock, as well as those with heart diseases, stroke, and diabetes. They also handle cases involving trauma, traffic accidents, respiratory problems, and burns, all with the aim of preventing any deterioration in the patient's condition (Trisyani et al., 2023). Nurses serve as the frontline responders, utilizing their expertise to prioritize patient care and ensure that the most critically ill or injured individuals receive prompt attention. They conduct rapid and accurate patient assessments, triaging patients based on acuity levels, and initiating timely interventions to address emergent needs. Research by Vaismoradi et al., (2020) underscored the importance of nurses' continuous monitoring and surveillance of patients' vital signs, symptoms, and responses to treatment in EDs. Through vigilant observation and assessment, nurses can detect subtle changes in patient condition, enabling early intervention to prevent complications and optimize outcomes.

Nurses in EDs are responsible for medication management, adhering to evidence-based practices to administer medications safely and accurately emphasizing the significance of nurses' role in medication safety, including verification of medication orders, calculation of dosages, and monitoring for adverse drug reactions. Nurses also advocate for patients' rights and safety concerns, ensuring that patients receive appropriate care and support. This advocacy role is highlighted in research by (Luca et al., 2021), which underscores the importance of nurses as the voice of the patient, advocating for informed consent, effective communication, and involvement in decision-making processes. Through effective communication, collaboration with other healthcare team members, and patient education, nurses in EDs contribute significantly to the provision of safe, high-quality care, ultimately enhancing patient safety and improving outcomes.

### **3 Aim, purpose and research question**

The objective of the literature review is to utilize available literature to identify the challenges that nurses working in Emergency Departments face in ensuring patient safety within hospitals. The purpose of this study is to enhance the existing knowledge in the field of nursing and provide valuable insights to educational and healthcare institutions regarding the significance of nurses in Emergency Departments safeguarding patient safety. The outcomes of this research will provide support to nurses and improve their practice.

The research question is: What are the challenges faced by nurses in ensuring patient safety within Emergency Departments?

## 4 Methods

### 4.1 Literature Review

The literature review process was conducted while ensuring that all relevant sources were identified and analyzed to provide a comprehensive overview of the topic. Subsequently, guided by the theoretical background, a research question was formulated to steer the literature review process effectively. The research question was designed to probe into the challenges encountered by nurses in safeguarding patient safety within emergency care settings. With a clear research question in place, the review proceeded to select databases to retrieve relevant literature.

Conducting a literature review began with extensive and detailed exploration of the theoretical background relevant to the topic. A wide range of literature was surveyed, with a focus on nurses' challenges, patient safety culture, nursing practice, and emergency care models (Baker J., 2016, Templier & Paré, 2015). The aim was to obtain a thorough understanding of the subject, enabling the author to identify gaps in the existing research and highlight potential areas for further investigation. The review process involved screening articles for relevance, assessing study quality, and extracting key insights. (Templier & Paré, 2015, Baker J., 2016)

The choice of employing a literature review method for this thesis is substantiated by several reasons. Firstly, conducting a literature review enables a comprehensive understanding of the existing knowledge and evidence pertinent to answering the research question. By synthesizing findings from a diverse array of studies, the review provides a holistic perspective on the topic "challenges confronted by nurses in upholding patient safety within the emergency departments (EDs)" (Paré et al., 2015).

The process of conducting a literature review assists in identifying areas of knowledge that are lacking in the current body of literature. Through a comprehensive analysis of academic publications, the authors can pinpoint specific areas that need further investigation, ultimately contributing to the advancement of knowledge in the field of emergency nursing and patient safety.

In order to guarantee precise responses and the selection of relevant articles, the author used the PICOS framework. According to Brandit and Faber (2018), the utilization of PICOS in clinical research assists researchers in concentrating on the target group and the problem at hand, while

also ensuring that all crucial elements are incorporated in the search. This is illustrated in table 1 below with (P) representing the target population, (I) representing the interest, (CO) representing the context, and (S) representing the study design (Vieira et al., 2020).

**Table 1. PICOS illustration**

(P) representing the target population	Nurses
(I) representing the interest	Challenges related to patient safety
(CO) representing the context	Emergency Departments
(S) representing the study design	Peer reviewed, English language, Published between 2015-2024, full text available

## 4.2 Article selection process

The studies included in this review were extracted from three databases, PubMed, MEDLINE, CINAHL. These databases were chosen for their expansive coverage of healthcare-related literature, ensuring a comprehensive retrieval of scholarly peer-review articles on nursing, emergency medicine, and patient safety. Key search terms were identified to enclose various dimensions of the research topic: nurse, challenges, emergency department and patient safety and that answers the research question “what are the challenges faced by nurses in ensuring patient safety within the emergency departments?”. The key search terms were connected with Boolean operators “OR” and “AND”. A combined search from CINAHL and MEDLINE gave a total number of 539 identified articles while the search in PubMed gave a total of 156 identified articles. See table 2 below.

**Table 2. Combination of keywords used in article search**

Database	Combination of keywords
Medline and Cinahl (combined search in Ebsco) N (539)	(nurs or nurse or nurses or nursing care or nursing staff) AND (emergency department or ed or and e or accident and emergency) AND (Challenges or barriers or difficulties or issues or problems or limitations or obstacles) AND patient safety.
Pubmed N (156)	nurs* AND challenge or barrier AND emergency department AND patient safety

N = Number of articles

Articles were selected based on specific criteria for inclusion and exclusion. The inclusion criteria were primary articles written in English with an abstract, published between 2015 and 2024, and having full text accessible for students. Additionally, the articles needed to be relevant to the study, specifically addressing the challenges faced by nurses in maintaining patient safety within emergency departments. All selected articles were required to undergo peer review. The exclusion criteria involved excluding articles published prior to 2015, articles that did not provide an answer to the research question, and articles that appeared in both databases (see Table 3 below).

**Table 3. Inclusion and exclusion criteria**

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> <li>➤ Articles in English Language</li> <li>➤ Articles with abstract and full text available to Jamk students</li> <li>➤ Articles from 2015 -2024</li> <li>➤ Peer-reviewed articles</li> <li>➤ Articles relevant to the research topic</li> <li>➤ Primary research articles</li> </ul>	<ul style="list-style-type: none"> <li>➤ Articles that do not answer the research question</li> <li>➤ Studies do not focus on Emergency Departments settings or not involving nurses</li> <li>➤ Studies that primarily focus on challenges faced by other healthcare professionals excluding nurses</li> <li>➤ Articles published prior to 2015</li> <li>➤ Studies that are not published, not peer-reviewed, older than 10 years and published in other languages than English.</li> </ul>

The total number of articles identified was 695 with 539 from CINAHL and Medline from a combined search and 156 from PUBMED. The screening process started by first revising the titles of articles which led to 170 selected articles from (CINAHL and Medline) and 80 from PUBMED. The articles were further screened by reading the abstract, generating 81 and 29 articles respectively as shown in the PRISMA flow chart in (Figure 1). 580 articles were excluded at this stage after title and abstract review. The reason for exclusion was either the title and the abstract not being relevant to the topic, did not address the research question, or focused on outcomes not related to patient safety or challenges faced by nurses. The remaining 115 articles went through two assessment phases: the selection phase of articles for eligibility by revising articles that by full text. This led to the selection of 30 articles. While reading the full text, the articles were evaluated according to the rest of the established inclusion criteria, resulting in the selection of 12 articles that fulfilled all requirements as detailed in Figure 1. The databases CINAHL and MEDLINE combined provided 8 articles, while PUBMED provided 4. A summary of the reviewed articles can be found in Appendix 1.

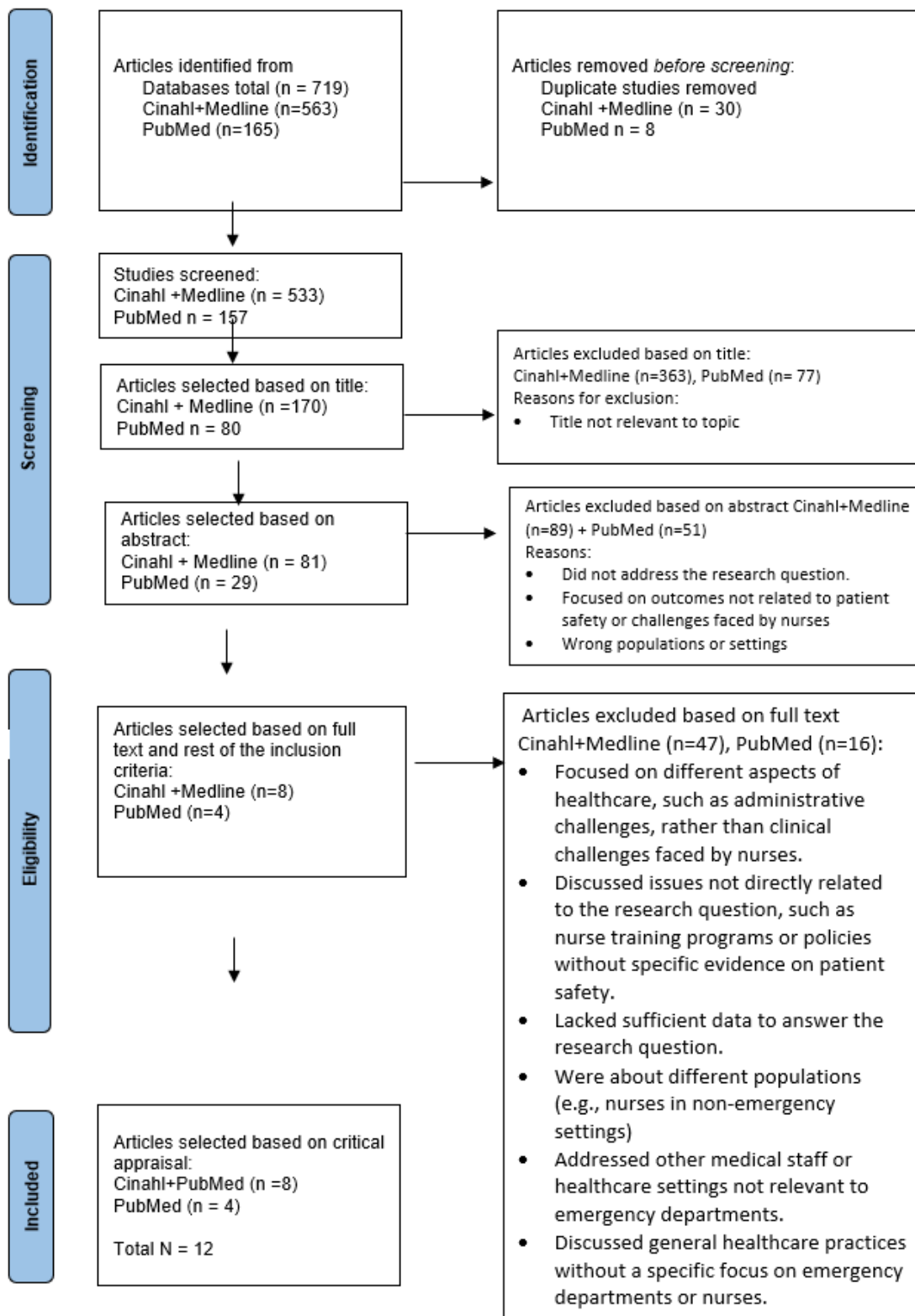


Figure 1. Prisma flow

### 4.3 Critical Appraisal

Critical appraisal involves systematically evaluating scientific research findings or evidence to assess their reliability, importance, and relevance in a particular context (Mhaskar et al., 2009). The author followed the systematic framework established by Hawker et al. (2002), which identifies three essential processes of critical appraisal: evaluating relevance, extracting data, and assessing methodological rigor through scoring. The author has aligned their approach with these principles (Hawker et al. (2002)). The evaluation comprised three distinct phases. In the initial phase, articles sourced from multiple databases were selected according to their relevance to the research question, specifically about hospital emergency departments, data sources, types of studies, and the challenges faced by nurses as professionals in safeguarding patient safety. In the next stage of data extraction, a comprehensive assessment was performed to record all pertinent information from the articles under examination, highlighting the way each article addressed the research question. The assessment tool examined nine specific aspects of each chosen article, which include the title, abstract, introduction and objectives, sampling, methodology and data analysis, results, ethical considerations and bias, validity and reliability, strength, limitations, implications, and the overall usefulness of the study (Hawker et al., 2002).

To evaluate the methodological rigor, the researcher developed a scoring table using a numerical scale from 1 to 4, where 4 represented "good," 3 indicated "fair," 2 denoted "poor," and 1 signified "very poor." This assessment was applied to twelve articles included in the study. Each article received a score, with the minimum score recorded being 32. Articles that achieved scores exceeding 30 were deemed suitable for inclusion in this study, as the scoring tool has a maximum possible score of 37 and a minimum of 9 (refer to Appendix 2) (Hawker et al., 2002).

### 4.4 Data Analysis

Content analysis is a method that is based on empirical evidence, characterized by an exploratory approach, and aims to be predictive in its objectives (Kleinheksel et al., 2020). This approach enabled the categorization of key terms or phrases into relevant categories within the analyzed content, thereby providing essential elements of the data. This process enhanced replicability and introduced a degree of objectivity, facilitating practical application. The author deeply engaged with the selected articles by reading them several times and highlighting the ideas that appeared to

capture the key concepts. An open coding approach was used to bring out and classify the findings after extracting data in small sentences. These codes sum up the main ideas of the articles. Codes that were alike were grouped into a single category. Those that exhibited minor differences were assigned new codes to ensure thorough coverage and precise representation of the data. The coding enabled the researchers to recognize the existence, significance, and interconnections among the categories, as well as their relevance to the research question (Elo & Kyngäs, 2008). Later, the codes were merged into subcategories which were then grouped into main categories organized in an excel file. This systematic and scientific research tool allowed the researcher to gather direct information from the study without preconceived categories, thus reducing bias (Drucker et al., 2016, Vears & Gillam, 2022). The process of data analysis can be seen in table 4 below.

**Table 4. Sample of data analysis**

Raw text	Simplified expression	Subcategory	Main category
Missed important care information during shift changes (Fekonja et al., 2023)	Information loss	Communication failure	Communication issues
inadequate managerial support (Afaya et al., 2021)	Lack of support	Poor rule support for nurses	Operational challenges
Lack of standardized workflow and routines (Akboğa & Gelin, 2024)	Lack of procedural order	Workflow standardization	
Chaotic environment (Afaya et al., 2021)	Noisy and chaos atmosphere	Overcrowding	Environmental factors
Nurses experience a high prevalence of disruptive behavior in EDs (Källberg et al., 2017)	High number of cases in critical care	High workload	Workforce challenge
Noisy and stressful environment prevents nurses from meeting the needs of the patients (Akboğa & Gelin, 2024)	Burnout due to stress	Nurse burnout and fatigue	Emotional and psychological impact.

## 5 Findings

The analysis of the twelve articles identified five main categories related to the challenges nurses face in ensuring patient safety within the emergency departments. These categories comprised of work environment challenges, Communication issues, Operational challenges, Environmental challenges, and Psychological and emotional challenges. Table 5 provides a visual overview of the five main categories and their associated subcategories.

**Table 5. Main categories and subcategories**

<b>Main Categories</b>	<b>Sub-categories</b>
Workforce challenges	Staffing issues High workload
Communication issues	Communication failure Poor team skills
Operational challenges	Care errors from nurses Workflow standardization Poor rule support for nurses
Environmental challenges	Overcrowding Patient/relatives violence against nurses Deficient infrastructure
Psychological and emotional challenges	Stress and fatigue(frustration) Burnout

### 5.1 Workforce challenges

#### 5.1.1 Staffing issues

Insufficient staffing levels were consistently highlighted as a significant risk factor for patient safety. Nurses noted that an extreme patient-to-staff ratio could lead to delays in assessments and interventions, ultimately affecting patient outcomes (Källberg et al., 2017). Many nurses indicated that there was an insufficient number of staff to manage the workloads of nurses and this situation frequently affected patient safety and forced nurses to operate in a 'crisis mode,' attempting to complete tasks at an unsustainable pace (Albarrack et al 2020). The use of inexperienced staffs particularly in acute situations where rapid decision-making is crucial led to misdiagnosis or miss-diagnosis subsequently affecting patient safety. The experienced staffs expressed the need to

monitor not only their patients but also those of their less experienced colleagues, (Källberg et al., 2017)

In Mohammadi et al., (2024), nurses reported insufficient staff led to long working hours that contributed to errors, indicating that fatigue and burnout compromised the ability of nurses to perform their duties effectively. (Aydemir & Koç, 2023). Nurses occasionally indicated that they work alone or with limited assistance during periods of heightened patient demand. The presence of clinical nurse assistants, who necessitate oversight, managing shifts without adequate support raises significant concerns, as this could compromise the standard of care delivered to patients. The experiences shared by participants stressed feelings of being flooded with patient cases, where one nurse managed up to six patients in a single shift (Afaya et al., 2021). Not all the nurses possessed the qualifications required to operate effectively in the emergency room. Even a minor error or oversight can jeopardize a patient's life. Regrettably, due to a shortage of personnel, management occasionally resorted to employing inexperienced nurses who did not have the essential professional skills and clinical expertise, thereby endangering patient safety (Mohammad et al., 2024).

### **5.1.2 High workload**

Fekonja et al. (2023) stated that triage nurses encounter an average of 63 patients daily, which highlights the demanding nature of their work. The majority of nurses work 8 hours a shift with a large number also working 12 hours a shift. Such long hours contributed to fatigue and stress, impacting patient safety. Mohammadi, (2024) also added that excessive workload contributed to job distress among emergency nurses, adversely affecting the quality of care and patient safety. Pun et al., (2015) also examined the ongoing challenge of time constraint in the ED. They noted that nurses often worked long hours due to high workload resulting from a high patient-to-clinician ratio. This increase in pressure from patients led to a situation where nurses felt compelled to prioritize acute cases over patient safety. This dynamic can result in a superficial approach to patient safety, where the focus is primarily on immediate medical needs rather than holistic patient care. Also, nurses faced excessive workloads, they struggled to focus on critical tasks such as administering medications and monitoring vital signs. This led to potential oversights that jeopardize patient safety (Mohammadi, 2024).

According to an interview conducted by Alzahrani et al., (2019), many nurses revealed that they felt overwhelmed by the high-pressure environment of the emergency department, which often led to a compromise in safety practices. (Källberg et al., 2017) reported that registered nurses encountered high patient loads which often led to excessive wait times, and delayed critical assessments, misdiagnosis, or missed diagnoses and interventions. One of the participants noted that patients with high triage levels are frequently left without adequate monitoring due to the overwhelming demands placed on nursing staff, who must divide their attention among multiple patients. This situation created an unsafe environment where the risk of ignoring a deteriorating patient condition was increased (Källberg et al., 2017).

Work overload apart from leading to decline in quality of service rendered by the nurses in the ED, is also a recipe for disruptive behaviour. It has been discovered that indicators of disruptive behaviours that relate to patients' safety are adverse events, patients' safety errors, quality of care for patients, mortality, nurses and patients' satisfaction. (Moreno-Leal et al., 2024).

## **5.2 Communication issues**

### **5.2.1 Poor communication**

According to a systematic review of (Källberg et al., 2017), communication challenges contributed significantly to adverse events in patient safety. The research pointed out that in high-stress environments like the Eds, vital information could be lost during handoffs or when relaying patients' history due to miscommunication, lack of communication, or communication failures. For instance, a nurse recounted an incident where a medication error occurred due to a failure to communicate critical information between a physician and nursing staff. This led to medical errors that severely impacted patient outcomes (Portela et al., 2017). The lack of information regarding incoming transfer patients from other healthcare facilities was identified as a significant risk that could lead to delays in care and inappropriate treatment levels. In Mohammadi.,2024, nurses in the emergency department reported that, inadequate communication led to disputes and conflicts among staff members and that such situations affected patients safety, as one nurse noted ,” if I am unable to establish a positive rapport with both my colleagues and patients, it raises the question of how patients can be expected to place their trust in the medical team”(Mohammadi et al., 2024).

Pun et al. (2015) also revealed that there was inadequate transfer of medical information within the ED. Due to the interdisciplinary nature of care, patients often encounter multiple nurses, leading to a rapid exchange of information that can be inconsistent or incomplete. Nurses reported issues such as omissions in medical records and inadequacies in triage and handover practices, which can jeopardize patient safety (Pun et al., 2015). The reliance on medical records in the ED is critical, yet many nurses noted that these records were often poorly maintained. Short, dense, and sometimes illegible notes led to confusion and misinterpretation of patient information. The lack of comprehensive medical history, particularly for patients presenting without prior records, further complicated the ability of nurses to make informed decisions (Pun et al., 2015).

Interruptions, particularly during high patient load situations, were identified as significant barriers to effective communication and concentration (Källberg et al., 2017). Both physicians and RNs reported that interruptions could lead to forgotten tasks or miscommunications, which in turn could result in medication errors or incorrect diagnostic tests. The cumulative effect of these interruptions creates an environment where patient safety is compromised, as important information may be overlooked or misinterpreted (Källberg et al., 2017). Multitasking raises concerns about the ability to maintain focus and deliver safe care. The perception that healthcare professionals are expected to manage multiple tasks simultaneously can lead to cognitive overload, increasing the likelihood of errors. (Källberg et al., 2017).

### **5.2.2 Poor team skills**

The hierarchical nature of medical practice in EDs created barriers to effective communication among nurses. Junior staff hesitated to seek clarification or guidance from senior nurses due to fear of appearing incompetent. This reluctance resulted in missed opportunities for learning and collaboration, ultimately affecting patient care and safety (Pun et al., 2015). Poor communication within healthcare teams was another barrier identified by nurses, with one stating, “one of the main barriers to patient safety in this ward is poor communication within the team.” Effective communication is vital for ensuring that all team members are aware of patient needs and potential risks, and its absence can lead to misunderstandings and errors (Portela et al., 2017).

## 5.3 Operational challenges

### 5.3.1 Care errors from nurses

Care protocols are crucial and keeping them guarantees patients' safety at the emergency departments. In the ED, however, there are occasions that safety protocols fall or are neglected creating threatening situations for patients and becoming barriers to the safety of patients. Mohammedi et al (2024). In the ED, medication errors were identified as a primary threat to patient safety. This situation was primarily linked to excessive workload, insufficient understanding of pharmaceuticals, and a deficiency in clinical guidance regarding the safe administration of medications by emergency department nurses. (Aydemir & Koç, 2023, Albarrak et al., 2020). In the study conducted by Mohammedi et al. (2024), a nurse remarked, "I frequently observe my colleagues jeopardizing patients' lives by failing to adhere to medication safety protocols. There have been instances where patients have tragically lost their lives due to medication errors committed by the emergency department staff. Such occurrences are distressing (Mohammedi et al 2024). Nurses also reported the inability to adhere to safety regulations and standard precautions due to time constraints, overcrowding and competing demands from trauma cases, for example, patients who sustained severe injuries and were experiencing significant bleeding that needed immediate attention, nurses occasionally overlooked the fundamental principles of hygienic bandaging and dressing while attending to wounds and managing bleeding (Mohammedi et al 2024, Portela et al., 2017).

Another instance of negligence concerning safety protocols and standard precautions involved the unsafe and improper transfer of patients between various hospital wards. One participant noted that: In times when the emergency department is very busy and cases are complex, it was important that patients were triaged promptly and transferred to other areas, such as the operating rooms and surgical units. However, due to failures in adherence to safety protocols by the staff, there were occasions when patients experienced falls, resulting in brain injury or memory loss. (Mohammedi et al.,2024),

In a study by (Aydemir & Koç, 2023)), the participating nurses reported having observed an error that threatened patient safety in the emergency unit. Such errors included drug malpractice and

incidents leading to patient falls. Medication malpractice included a range of issues, such as incorrect dosages, administering the wrong medication, or failure to obtain patients' allergic information or interactions with other drugs which pose significant risks for adverse drug reactions that threatened patient safety. The inability to double-check medications due to time constraints was a persistent response from nurses, who expressed concerns that rushed documentation resulted in medication errors (Källberg et al., 2017).

According to (Källberg et al., 2017), registered nurses reported that electronic health reports (EHR) may contribute to patient safety risks due to their complexity in use and potential for making errors. Nurses expressed concerns about the possibility of information being misfiled or attributed to the wrong patient, which could have dire consequences for patient safety. These nurses showed these concerns, particularly on the possibility of printing incorrect labels for blood samples during high-stress periods. Again, there were concerns about the operational challenges of using the EHR such as system shutdowns and information loss, which may worsen existing patient safety risks creating confusion among staff.

### **5.3.2 Work standardization**

Lack of work standardization was seen in the differences in patient care procedures among emergency nurses. Some nurses noted that new practitioners often ordered unnecessary tests, leading to longer wait times for patients. This inconsistency in care protocols not only affect patient safety but also worsened overcrowding and increased the workload on nursing staff (Akboğa & Gelin, 2024). The integration of safety practices into daily routines was seen as a challenge to patient safety (Portela et al., 2017). Low staffing situations, high emergency situations, documentation problems and difficulty contacting physicians, hospital policies and inadequate resources in pain management was highlighted (Akboğa & Gelin, 2024).

### **5.3.3 Poor role support for nurses**

Mohammadi, (2024) revealed that emergency department nurses often noticed a lack of adequate management support for patient safety initiatives. This perception was also seen in the research by Alzahrani et al., 2019 which indicated that nurses felt hospital management did not sufficiently

support safety efforts, leading to negative evaluations of the safety climate. The lack of management support in nurses' roles hindered the use of effective safety practices, as nurses may felt unsupported in their roles.

Inadequate support was also a persistent concern among participants, who expressed a need for more attention and resources from the hospital administration. Participants noted that while some unit heads provided support, the overall perception was that the nursing administration was dismissive of their concerns (Afaya et al., 2021). For example, one nurse said "nursing administration doesn't understand the plight of the nurses working in the emergency unit. When we complain to them about consumables and logistics, they will shout at you saying that you complain too much" (Afaya et al., 2021). The gap that exists between nurses and management resulted in diminished job satisfaction, which adversely impacted the quality of care delivered to patients (Afaya et al., 2021).

Mohammadi et al., (2024) reported that the emergency department managers and head nurses do not consistently and accurately oversee the performance of the emergency room nurses, resulting in daily occurrences of errors in patient care by the nursing staff. Triage and handover processes are pivotal moments in patient care within the ED. However, (Fekonja et al., 2023) found that there are no standardized practices for conducting handovers, leading to variability in communication. Some nurses reported that handovers are often informal or omitted altogether, resulting in gaps or inconsistencies in the information available to different members of the health team negatively impacting patient safety.

## **5.4 Environmental challenges**

### **5.4.1 Overcrowding**

Overcrowding was seen as a prominent concern among participants, who said that the limited physical space in the emergency unit severely hinders the delivery of quality nursing care (Akboğa & Gelin, 2024). Participants reported instances where the bed capacity of only two was stretched to accommodate five to eight patients, leading to situations where patients were nursed on wheelchairs or makeshift stretchers. This not only complicates the delivery of care but also poses risks to both patients and caregivers (Akboğa & Gelin, 2024). The inability to maneuver through a congested

space filled with defective equipment further exacerbates the challenges faced by nurses, leading to potential compromises in patient safety and care quality (Afaya et al., 2021). In (Akboğa & Gelin, 2024), approximately fifty percent of the nursing staff reported that the disorder caused by overcrowding interfered with the delivery of nursing care, resulting in postponed interventions and a heightened risk of medical errors. The inability to provide timely care not only compromised patient safety but also increased the workload on nursing staff, as they struggled to manage the demands of an overcrowded ED (Akboğa & Gelin, 2024). One nurse noted, "It takes approximately 3-4 hours to document the procedures performed on patients with chronic diseases" (Akboğa & Gelin, 2024).

Eriksson et al. (2018) pointed out that overcrowding significantly increased the likelihood of negative outcomes threatening patient safety. The nurses reported feeling overwhelmed by the high patient volumes. They expressed concerns about the quality of care they could provide, noting that overcrowding often leads to rushed assessments and inadequate monitoring of patients (Eriksson et al., 2018). The study indicated that in such environments, nurses are forced to prioritize their responsibilities according to urgency, which frequently results in inadequate monitoring and care for certain patients. The findings also revealed that RNs believe that overcrowding negatively impacts patient outcomes, including increased wait time, increased morbidity and mortality rates. Nurses working in overcrowded emergency departments frequently felt unable to provide the safe and thorough care they strive for, resulting in increased stress and burnout. (Eriksson et al., 2018). Inappropriate referrals between units due to insufficient resources were noted by some nurses as a factor exacerbating overcrowding. Akboğa & Gelin, (2024),

In a study by Akboğa & Gelin, (2024), a significant number of nurses (21 out of 27) reported that inappropriate admissions were a primary driver of overcrowding. Patients often sought care in the ED for non-emergency issues, such as missed appointments at outpatient clinics or requests for basic services. One nurse expressed the frustration of dealing with patients who arrive late for outpatient services, stating, "Especially in the morning hours, towards the end of our shift, the ED becomes terrifying; we want to finish our shift and go home as soon as possible. Akboğa & Gelin, (2024), all nurses reported that overcrowding led to increased psychosocial issues, including burnout, loss of motivation, and emotional fatigue. The tough pace of work in an overcrowded ED environment created a cycle of stress and decreased productivity. One nurse expressed the emotional

toll, stating, “Doctors and nurses become tired and distracted as the working hours progress, yet the volume of patient arrivals doesn’t cease (Akboğa & Gelin, 2024).

#### **5.4.2 Patient/relative violence against nurses**

The pressure associated with extended wait times frequently led to a rise in violent incidents directed at emergency department personnel. Nurses have indicated that they faced both verbal and physical aggression from agitated patients and their family members. One nurse shared a particularly distressing encounter: “I was assaulted for prioritizing and assisting a patient who was experiencing an epileptic seizure.” (Akboğa & Gelin, 2024) Albarrack et al 2020. The implications of such violence not only extended beyond the immediate physical harm to staff but also contributed to a toxic work environment that led to burnout, decreased job satisfaction, and high turnover rates among nurses. Also, the fear of aggression deterred nurses from providing the best possible care, ultimately impacting patient safety (Akboğa & Gelin, 2024).

#### **5.4.3 Deficient infrastructure**

Inadequate infrastructure worsened the challenges associated with delivering safe care, as nurses indicated that malfunctioning equipment and insufficient supplies impeded their capacity to guarantee patient safety. Statements like “inadequate infrastructure and insufficient materials hinder our ability to ensure patient safety consistently” highlighted a significant obstacle that resulted in negative patient outcomes. Research supported this claim and demonstrated that insufficient resources and substandard infrastructure contributed to medical errors and compromised patient safety (Portela et al., 2017). The reported deficiency of critical emergency equipment by participants notably affected their capacity to provide high-quality care. The practice of sharing scarce resources, such as blood pressure monitors with the outpatient department, exemplifies the logistical difficulties encountered by nurses in emergency environments (Afaya et al., 2021)

Overcrowding in the emergency department had resulted in nurses reporting shortages in available beds and inadequate physical space for patients, alongside an insufficiency of essential equipment for monitoring the cardiac health of high-risk individuals. In response to these challenges, the nurses felt it necessary to act on behalf of their patients, which prompted them to administer a high-risk cardiac medication without the advantage of heart monitoring (Mohammadi et al.,

2024, (Källberg et al., 2017). When patients are unable to be admitted to appropriate care settings, they may remain in emergency departments longer than necessary, leading to an accumulation of patients and increased pressure on staff. This situation compromised the quality of care provided to patients, as resources became stretched and staff were forced to prioritize care based on immediate needs rather than optimal treatment practices (Källberg et al., 2017)

## **5.5 Psychological and Emotional Challenges**

### **5.5.1 Stress and Fatigue**

Many nurses reported experiencing stress and burnout due to excessive workloads and insufficient staffing, which adversely affected their capacity to deliver safe care. This elevated stress levels among emergency nurses and reduced job satisfaction, as well as increased turnover rates, impacting the quality and safety of patient care (Pun et al., 2015). The study stressed the psychological impact of working in overcrowded environments on nurses themselves (Pun et al., 2015). The demands of working in the emergency department were seen as exceedingly draining. At times, the workload was overwhelming and nurses found themselves unable to take a moment to drink a glass of water, and often lost track of when their shift ended (Mahammadi et al., 2024). When shifts are prolonged, nurses in the ED experience fatigue, and their ability to concentrate diminishes, hindering their capacity to make appropriate clinical decisions during emergencies, thereby endangering patient safety (Mahammadi et al., 2024).

Emotional reactions from stress and fatigue has been reported by many nurses (Erickson et al 2017). In the study, nurses described a feeling of losing control of being inadequate related to not having control over patients positioning and well-being, needs, treatment and lack of medical history. Other nurses report that they feel guilty and shameful toward patients and relatives for not giving adequate treatment leading to work dissatisfaction. For example, some nurses open up that there are situations they missed things that deteriorated patients' condition (Erickson et al 2017). They feel higher guilt that patients sustain care-related injuries because they could not meet their needs with the idea of doing your best and hoping that it is enough. In some cases, an extended length of stay (ELOS) resulted in disputes and discussions among staff, as well as discontented patients and their families, leading to frustration and a feeling of powerlessness and lack of impact on the situation. Nurses are mentally very tired when they go through all these and go home and

are mainly occupied psychologically defending “why you don’t help them, and why they don’t get help” (Erickson et al 2017).

### **5.5.2 Burnout**

One of the main consequences of burnout was emotional fatigue, which adversely affected nurses' cognitive performance and their capacity to make decisions (Aydemir & Koç, 2023). They emphasized that burnout may result in fatigue and diminished mental clarity, subsequently heightening the risk of errors in patient care. This occurrence comes from the significant pressures in the emergency department setting, where elevated patient numbers, urgent care scenarios, and constrained resources come together to form a challenging work environment. Mohammadi et al. (2024) in their review stated that burnout caused by the emotional and psychological pressures of working in the emergency department not only threatens the well-being of nurses but also negatively impacts the quality of care they deliver. They also found out that burnout resulted in depersonalization, prompting nurses to take on a negative or detached view of their patients. This emotional disconnection hindered effective communication and obstructed the establishment of trust between nurses and their patients (Mohammadi et al., 2024). When nurses encounter burnout, they are more inclined to exit the profession, resulting in staffing shortages that place additional pressure on the remaining personnel and intensify the cycle of burnout and diminished patient safety (Mohammadi et al., 2024). The excessive burnout resulting from the emotional and psychological strain associated with working in the (ED) not only threatened the occupational health of nurses but also adversely affected the quality of care provided (Akboğa & Gelin, 2024).

## 6 Discussion

The main aim of this review was to achieve an in-depth understanding of the current knowledge and theoretical models concerning the difficulties that nurses encounter in maintaining patient safety in emergency departments. This literature review identified five main categories derived from the analysis and findings of 12 articles related the challenges encountered by nurses in maintaining patient safety in emergency departments. These align with the study's theoretical framework, as nurses have confirmed the presence of significant challenges in this area.

A fundamental aspect of delivering quality healthcare in the Emergency Department (ED) is ensuring patient safety. The results of this review emphasized that the knowledge, insights, and attitudes of nurses significantly affect their adherence to patient safety principles. In the emergency environment, nurses assume multiple roles and bear a vital responsibility for maintaining patient safety (Gaffney et al., 2016). Despite being staffed by highly skilled healthcare professionals, the inherent nature of the ED makes it susceptible to errors and safety concerns (Petrino et al 2023). Petrino et al. (2023) noted that the World Health Organization (WHO) views patient safety as a structured framework that includes organized activities aimed at cultivating cultures, processes, procedures, behaviors, technologies, and environments in healthcare settings. This framework aims to systematically and sustainably minimize risks, reduce the frequency of preventable harm, lower the chances of errors, and alleviate the impact of harm when it occurs (Petrino et al 2023). The saying "to err is human" serves as a reminder for the implementation of corrective actions to create safer healthcare systems, a notion first introduced by the Institute of Medicine (IOM) in 1999. The IOM provided evidence that preventable adverse events are a major factor in global mortality (IOM, 2000). Despite efforts to reduce these errors, ensure high-quality care, adhere to the principle of "do no harm" to patients, and implement quality improvement initiatives, the results have been only limited or modest (Grzybicki, 2004).

The findings of the review indicated that deficiencies in nursing practices, particularly in the area of medication administration, are common within the emergency department. In the studies reviewed, medication errors, frequently associated with excessive workloads, insufficient knowledge of pharmaceuticals, and a lack of proper safety protocols. These factors contribute to medication errors thus posing a significant risk to patient safety (Aydemir & Koç, 2023; Mohammadi et al., 2024).

Research regarding the workload of nurses has indicated that excessive workloads result in frequent disruptions, heightened stress levels, and rushed procedures, all of which may contribute to an increase in adverse events for example the above mentioned medication administration errors (Magalhães et al., 2019). The findings suggest that in circumstances characterized by overcrowding and heightened stress, nurses may occasionally overlook hygiene protocols, particularly in trauma cases that require urgent attention (Portela et al., 2017; Mohammadi et al., 2024). In the author's opinion, these challenges should increase the need for stricter adherence to established protocols within the EDs. However, the effective application of these protocols is hindered by external pressures (for example severe acuity and overcrowding), as previous studies have shown a correlation between non-compliance with care protocols and adverse patient outcomes (Albarrak et al., 2020).

This study also reveals that nurses perceive insufficient support from hospital management, which they believe obstructs their capacity to deliver safe care. The absence of support leads to reduced morale, lower job satisfaction, and a negative safety environment (Afaya et al., 2021; Alzahrani et al., 2019). Research indicates that the gap between front-line nursing personnel and hospital management leads to inadequate resources, which hinders compliance with safety protocols and sustains a cycle of risk in patient care. Enhanced support for emergency department nurses has the potential to alleviate these challenges, as demonstrated in research indicating that a robust safety culture and leadership backing are associated with better patient outcomes (Mohammadi, 2024).

The demanding workload in the Emergency Department, frequently requiring extended shifts, has been demonstrated to increase stress and fatigue levels among nurses, thereby impacting patient safety (Pun et al., 2015; Fekonja et al., 2023). Elevated patient-to-nurse ratios and insufficient staffing levels compel nurses to prioritize cases according to acuity instead of addressing the full spectrum of patient needs, resulting in a cursory approach to patient safety. Research indicates that heavy workloads elevate the risk of burnout, which negatively affects cognitive performance and diminishes the quality of patient evaluations (Mohammadi, 2024; Källberg et al., 2017). This scenario highlights the critical need for equitable distribution of workloads and sufficient staffing levels to maintain a high quality of patient care and to mitigate the risk of nurse burnout.

Poor Communication ran through the articles selected for the study, a lack of which could result in varieties of problems. An ED having communication deficit is highly likely to lack standardization of work process and routinised activities having the potentials of generating conflicts between nurse professionals. Beyond these hindrances, it brings about reduced information sharing or discrepancies in information sharing among nurses (Poite de Siqueira et al 2021). The quality of care in the EDs is highly dependent on collaborative practice between physician and nurses and good communication between them. When information and collaborative efforts are efficient, the incident of inadequate information transfer, reduced information sharing and many other obstacles to patient safety in the ED could be overcome.

Miscommunication frequently arises in emergency departments, especially during the transfer of patients and communication among interdisciplinary teams. The exchange of incomplete or inconsistent information heightens the likelihood of medical errors, as evidenced by cases involving overlooked patient history and inadequate documentation, which ultimately threaten patient safety (Källberg et al., 2017; Pun et al., 2015). In high-pressure situations, obstacles to communication intensify the risks associated with patient care, as nurses have indicated a sense of disconnection from physicians and a reluctance to engage in open dialogue within established hierarchical frameworks (Mohammadi, 2024). The significance of standardized handover protocols and transparent communication channels is paramount, as they play a crucial role in preventing avoidable errors.

Efficient management of information and communication is crucial for delivering high-quality clinical care, particularly in the Emergency Department (ED), as highlighted by Aronsky et al. (2008). This necessity arises from various factors, including a rising patient volume, an aging demographic, high occupancy rates, a shortage of nursing staff, and the increasing complexity of patient cases. From both clinical and operational viewpoints, these challenges render the ED a particularly demanding environment. For instance, ED personnel often deal with episodic care for acutely ill patients, for whom historical medical information may be sparse or entirely absent (Aronsky et al. 2008). This situation can lead to the fragmentation of patient information amidst a high-pressure work setting characterized by frequent interruptions, transitions of care, and multitasking, all of which can adversely affect the quality of care and contribute to a higher rate of errors in the ED (Aronsky et al. 2008).

In many EDs, patients flow is a critical issue leading to overcrowding, lack of coordination of care and insufficient utilization of resources which is more apparent when ED is inappropriately staffed (Tahan, Cesta 2005). Overcrowding is a global concern and in the view of the International Federation of Emergency Medicine identifying it is a public health concern and health quality issue (Pearce et al 2023, Savioli et al 2022). Overcrowding severely hinders the quality of patient care by stretching both physical resources and nursing personnel beyond their limits. The findings of the study indicate that when bed capacity is surpassed, patients may be placed in temporary arrangements, which limits their mobility and jeopardizes hygiene and safety (Afaya et al., 2021; Eriksson et al., 2018). Furthermore, overcrowding frequently results in delays in patient evaluations, longer wait times, and an increased likelihood of adverse patient outcomes, including higher morbidity and mortality rates (Akboğa & Gelin, 2024). These results underscore the necessity for hospital policies aimed at managing overcrowding and ensuring that patients are allocated to the most suitable care environments.

Incidents of aggression directed towards emergency department nurses, often stemming from prolonged wait times and overcrowded conditions, foster a hostile work environment that hinders nurses' ability to perform optimally. This atmosphere of hostility is linked to elevated stress levels and burnout, which in turn contribute to high turnover rates and a detrimental work climate (Akboğa & Gelin, 2024; Albarrak et al., 2020). Research indicates that when nurses experience verbal or physical aggression, it not only jeopardizes their wellbeing but also negatively affects patient care due to heightened stress and diminished morale (Mohammadi et al., 2024).

Availability of infrastructure and other resources for the efficient functioning of ED may vary depending on the countries involved. For example, in the middle- and low-income states, there are marked deficiencies in many items and services (Japiong Et al 2016). The research indicated that inadequacies in equipment and infrastructure adversely affect nursing practices, especially in critical settings such as the Emergency Department (ED). Limited access to essential tools, including cardiac monitors, hinders nurses' capacity to provide optimal care (Portela et al., 2017; Afaya et al., 2021). Known as the face of the hospital, and one of the most important departments, the quality of the ED is depended on the infrastructure, processes and design. For example, the ED should be on the ground floor with easily accessible entrances wide enough for easily moving two or more stretches at the same time and the doors should be opened outside not locked inside, it

should have separate entry exits, and there should sufficient space to carry out outpatient care activities, there should be a dedicated area for triage, emergency processes, prior proper arrangement should be in place during mass casualty to take care of emergencies properly. For example, complete storage of medications and consumables required during mass casualty and identification of places where mass casualty can be accommodated and many other infrastructural arrangements for easy operation of the ED.

The hiring of inexperienced personnel due to staffing shortages worsens resource limitations and jeopardizes patient safety. The findings of this review indicates that nurses lack of experience adversely affect various nursing responsibilities, including triage, monitoring vital signs, administering medications, conducting procedures confirming the findings of (Ramsey et al., 2018). This may lead to delays in nursing care eventually resulting in extended wait times, which in turn contributes to a higher number of patients leaving without being seen (LWBS) (Ramsey et al., 2018). The existing literature highlights that a well-resourced ED staffed with adequately trained professionals diminishes the risk of errors and promotes a safer, more efficient care environment (Källberg et al., 2017; Mohammadi et al., 2024).

The demanding atmosphere of the Emergency Department (ED), intensified by insufficient staffing, contributes to nurse burnout and negatively impacts the overall quality of patient care. When long working hours over stretch nurses to length unimaginable, what sets in is stress and burnout in the ED (Källberg et al., 2017). The intention of most nurses, is to provide support and care to patients, addressing their mental, physical, emotional, and spiritual needs. As they attend to the sick, traumatized, and vulnerable individuals under their care, they unintentionally become exposed to the pain, suffering, and trauma experienced by their patients on a continual basis. Participants in the study expressed feelings of emotional exhaustion, which, as indicated by other research, may result in impaired decision-making and a rise in adverse events in patient care (Eriksson et al., 2018; Pun et al., 2015). Consequently, this can result in burnout or fatigue, which adversely impacts not only the physical and emotional well-being of the nurses but also diminishes their productivity, job satisfaction, and patient safety. If this exposure is not properly managed, it may lead to nurses becoming overwhelmed by the demands placed upon them. However, Davis (2023) noted it could also be rewarding for providing care to patients in acute need of help to have their condition stabilized. It is for this reason Davis (2023) recommended proper training coupled with

the resolution to remain calm under these intense pressures to be effective as required in the ED. This can be achieved by implementing a suitable shift system that guarantees sufficient staffing in the emergency department, appropriately enhancing their compensation, and reducing conflicts between work and family responsibilities (Li et al 2022). The psychological and emotional strain experienced by ED nurses underscores the necessity for systemic reforms aimed at alleviating nurse burnout, including appropriate staffing levels, supportive leadership, and adequate rest periods.

The training and education of nurses in all areas of the healthcare sector is of paramount importance. The emergency department is no exception, employing various strategies to enhance the quality of nurses and efficiency of services as well as the patient flow. One notable method is computer simulation, which is preferred for its ability to facilitate effective decision-making in healthcare and operational improvements (Shirazi et al., 2022). Simulation serves to either replace or increase patient experiences through various situations that are designed to mirror actual clinical interactions (Shirazi et al., 2022). This experiential learning approach aims to evoke or replicate critical elements of the real world in a fully interactive manner. It enables learners to develop time-sensitive skills without posing risks to either the patient or the learner (Shirazi et al., 2022). Calder et al. (2022) emphasized the necessity of investing in comprehensive training for ED staff to ensure they are well-versed in urgent and emergency care policies and procedures, including regular updates to keep pace with new developments and technologies in medical delivery within the ED.

## **6.1 Ethical considerations**

According to Resnik, (2020), ethics is described as a set of standards for behavior that differentiates between what is deemed acceptable and what is considered unacceptable. Ethics encourage the values of honesty and truthfulness in the dissemination of information gathered from various sources (Resnik, 2020). This study was conducted with a strong emphasis on ethical standards. The researcher adhered to a systematic approach in compiling this literature review, ensuring that the retrieval of articles, research methodology, analyses, and findings were all free from bias. The reviewed articles included in this study and analysis were sourced from three databases and were published across ten different countries. The selected articles date from the years 2015 to 2024. The studies of this literature review stressed on the importance of obtaining informed consent and

ensuring voluntary participation, guaranteeing that participants had a comprehensive understanding of the research's objectives, methodologies, and possible outcomes before agreeing to participate. The reviewed articles further pointed out the ethical principle of no harm, underlining the importance of reducing risks or potential harm to participants throughout the research process. All authors of the articles used in this study were duly referenced in relation to plagiarism concerns. The research was conducted in alignment with the ethical standards set forth by JAMK University of Applied Sciences (JAMK, 2018). The information presented in this study has been accurately cited and referenced from the original sources, fully crediting the respective authors following the latest guidelines of The American Psychological Association (APA, 7th edition).

The author establishes that the reliability and validity of the research are evidenced by the thorough documentation of the procedures followed, facilitating replication and compliance by others. This study focused exclusively on articles written in English that are freely accessible to JAMK students or available to the public at no cost. The analysis did not consider any specific country of origin for the articles. In this study, the author carefully followed all specified inclusion and exclusion criteria. Articles were eliminated based on these criteria during the reviews of titles, abstracts, and full texts. Additionally, during the critical appraisal, the author used the three-phase process described by (Hawker et al., 2002), which included assessing the relevance of the twelve selected articles, performing data extraction, and evaluating the methodological rigor.

A significant limitation of this study is the incorporation of articles that offered perspectives from both nurses and physicians, despite the study's primary emphasis on the challenges encountered by only nurses in ensuring patient safety in emergency departments. The views provided by these articles were valuable, but they may have diluted the clarity of the findings related to nurses' experiences. Three databases were used for data retrieval, and only articles with full texts, accessible in English and available to JAMK students, were used. This may have introduced a bias and limited the scope of the findings. To reduce the risk of selection bias in the studies, the criteria for identifying eligible articles were clearly established, and the conclusions drawn from the research were based on the selected articles. As a result, the author followed established procedures for conducting a literature review and abide by ethical standards as outlined by the university's research guidelines, resulting in valid and reliable outcomes.

## 6.2 Conclusion

There are roadmaps for standard care delivery in ensuring consistency, efficiency and patient safety in high-pressured situations from triage protocols and treatment guidelines. It is one thing having clear and comprehensive policies and another thing observing them, so, for a successful ED setting adhering to relevant legislations is non-negotiable in urgent care occasions. A crucial aspect of the regulatory process is for health professionals to be abreast with the laws and guidelines for the purpose of avoiding legal repercussions and not sidestepping clinicals and organizational guidelines. In addition to law adherence, strategies to enhance structured performance in the ED could include dynamic staffing, models, integration of cutting-edge diagnostic tools that contributes to operational efficiency and improved quality care. To foster a culture of safety, it is advisable to create an environment that prioritizes patient safety, promotes staff engagement in safety initiatives, and supports ongoing improvements in safety efforts. This according to these writers could lead to answers to multifaceted solutions to the complex problems to the extent of promising better patient care and satisfaction.

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## Appendices

### Appendix 1. Summary of selected articles

	Author and title	Aim and purpose	Participants	Methodology, data collection and analysis	Key finding and results	Country of study and clinical context
1.	Ahmed I. Albarrak, Ammar S. Almansour , Ali A. Alzahrani, Abdulaziz H. Almalki , Abdulrahman A. Alshehri & Rafiuddin m. (2020).  Assessment of patient safety challenges and electronic occurrence variance reporting (e-OVR)	The present study aimed to determine patient safety challenges facing clinicians (physicians and nurses) in emergency medicine and to assess barriers to using e-OVR (electronic occurrence variance reporting).	197 clinicians in an emergency department, 48 physicians and 149 nurses.  A sample of 23 ED nurses who took	A qualitative study.  Data was collected using questionnaires.	Lack of enough staff to handle work in the emergency department.  Missing of important patient information during shift changes.  Experience of violence against clinicians in the ED.	Emergency department in king Khalid university hospital in Riyadh Saudi Arabia.

2.	<p>barriers facing physicians and nurses in the emergency department: a cross-sectional study.</p> <p>Mohammadi f., Rustae S. &amp; Bijani M.(2024).</p> <p>Factors influencing patients' safety management as perceived by emergency department nurse</p>	<p>Identification of factors which impact patient safety management as perceived by Ed nurses</p>	<p>part in an in-depth interview.</p>	<p>A qualitative study done by interview done to 23 Nurses</p>	<p>The findings were the following 4 themes</p> <ol style="list-style-type: none"> <li>(1) Negligence of safety standards and standard precautions.</li> <li>(2) Disregard of ethical principles.</li> <li>(3) Professional challenges</li> <li>(4) Inefficient organizational management.</li> </ol>	<p>Southern Iran(Emergency department).</p>
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3.	<p>Alzahrani N., Jones R. &amp; Abdel-Latif M. (2018).</p> <p>Attitudes of doctors and nurses towards patients safety within the emergency department unit in Saudi Arabian hospitals.</p>	<p>To investigate doctors and nurses attitudes towards patients safety in emergency department.</p>	<p>A total of 503 emergency department nurses and doctors</p>	<p>A qualitative study where a total of 503 participants filled a safety attitude questionnaire (SAQ)</p>	<p>(1. ) Less positive attitudes towards safety among nurses and doctors.</p> <p>(b) Nurses reported significantly lower on teamwork climate dimensions than doctors.</p> <p>(C.) A dimension of Stress recognition</p> <p>(d.) Perceptions of hospital management.</p>	<p>Two ministry of health (MOH) hospitals in Riyadh Saudi Arabia.</p>
4.	<p>Erickson, Gellersetdt L., Hilleras P. &amp; Craftman A. (2017) Registered nurses perception of safe practice in care</p>	<p>To explore registered nurses perception of safe practice in care</p>	<p>14 registered nurses, 11 females and 3 males</p>	<p>Qualitative interviews were carried</p>	<p>(1. ) Negative consequences for both patient safety and care as well as registered</p>	<p>Five hospitals in Sweden, of which</p>

	tered nurses' perceptions of safe care in overcrowded emergency departments	for patients with extended length of stay in emergency department.		out in five emergency departments	nurses' psychosocial experiences. (2. ) It is common to experience emotional reactions based on feelings of loss of control.	three are university hospitals.
5.	Aydemir A. & Koc Z. (2023).  Patient safety culture and attitudes among emergency care unit nurses in Turkey	This study aimed to determine the factors affecting patient safety, with a focus on the culture and attitudes of nurses working in emergency units.	282 nurses working in emergency departments in 19 hospitals in Turkey.	Data was obtained using descriptive information forms, the Patient Safety Attitude Scale (PSAS) and the Patient Safety Culture Scale (PSCS).	Attitude and culture of nurses in hospital emergency units towards patient safety differed according to their socio demographic and work-life characteristics, including being satisfied with working in the emergency room, quality of work-life balance, level of job satisfaction, and number of years working in the emergency room.	19 Emergency hospitals in the North - Central Black region of Turkey.

6.	<p>Afaya et al., 2021</p> <p>We are left with nothing to work with”; challenges of nurses working in the emergency unit at a secondary referral hospital: A descriptive qualitative study</p>	<p>This study aimed to explore the challenges experienced by nurses working in the emergency unit of a secondary referral hospital in Ghana.</p>	<p>11 nurses from the ED were interviewed</p>	<p>The study used an exploratory qualitative research design with a constructivist approach and a grounded theory method. Data were collected through in-depth interviews lasting between 30 to 45 minutes using a semi-structured interview guide.</p>	<p>The study identified four major challenges confronting nurses working in the emergency unit, including overcrowding, understaffing, lack of emergency equipment, and inadequate managerial support.</p>	<p>An emergency department of a secondary referral hospital in the Ho municipality, located in the Volta region of Ghana.</p>
7.	<p>Akboga D. and Gelin D. (2024)</p>	<p>This study aimed to explore the experiences of ED nurses concerning</p>	<p>27 Ed nurses in tertiary hospitals</p>	<p>In depth interview of 27 nurses</p>	<p>The study highlighted various causes and consequences of ED overcrowding as identified by nursing staff,</p>	<p>4 tertiary hospitals in Turkey.</p>

	Experiences of Registered Nurses in Overcrowded Emergency Departments: A Qualitative Stud	the causes, effects, and solutions for ED overcrowding			alongside suggestions for addressing these issues.	
8.	(Källberg et al., 2017) Physicians' and nurses' perceptions of patient safety risks in the emergency department.	The aim of this study was to explore the perceived risks to patient safety in EDs from the perspective of physicians and RNs.	The study used semi-structured interviews with 10 physicians and 10 registered nurses from two emergency departments.	The interviews were analyzed using inductive content analysis, focusing on the manifest content.	The study found that physicians and registered nurses perceive patient safety risks in the emergency department, including high workload, lack of control, communication failures, and organizational failures.  Interruptions, inexperience, and communication flaws are perceived as common risks to patient safety.	International emergency nursing, Sweden

9.	<p>Pun et al., 2015</p> <p>Factors affecting communication in emergency departments: doctors and nurses' perceptions of communication in a trilingual ED in Hong Kong.</p>	<p>The objective of the study was to explore the communication challenges faced by clinicians in a trilingual ED in Hong Kong and to identify the experiential, interpersonal, and contextual factors that hinder effective communication and patient care</p>	<p>They used in-depth interviews with 28 clinicians, which were audio-recorded,</p>	<p>The study employed a qualitative ethnographic approach,</p>	<p>The study found that clinicians face significant challenges in communicating effectively with patients and other clinicians, due to time constraints, contextual limitations, and inadequate handover practices.</p> <p>Incomplete or unclear transfer of medical information at key points (e.g., triage and handover) and Inadequate handover procedures and inconsistent record keeping</p>	<p>International journal of emergency medicine</p> <p>Hong Kong</p>

10.	<p>Portela A. et al (2017)</p> <p>Nurses perceptions of patients safety in the emergency setting.</p>	<p>to explore nurses' perceptions of patient safety aspects in an emergency setting.</p>	<p>13 Registered nurses from an emergency department.</p>	<p>Semi structured interviews</p>	<p>Nurses reported that the factors influencing patient safety includes lack of resources, hospital overcrowding, excessive workload, lack of training, and ineffective communication.</p>	<p>A general hospital in North Eastern Brazil.</p>
11.	<p>Moreno P. et al (2024)</p> <p>Disruptive Behavior and Factors Associated with Patient Safety Climate: A Cross-Sectional Study</p>	<p>Analyze healthcare professionals' perceptions of disruptive behavior and factors associated with patient safety climate in</p>	<p>370 nurses and physicians assigned at different hospitals in Spain</p>	<p>Qualitative method by use of validated Spanish version of the Nurse-Physician Relationship Scale</p>	<p>Disruptive behavior was more prevalent in the ICU (81.6%) and the emergency department (67.8%). Professionals indicate that fear of reprisals is the barrier to the reporting system.</p>	<p>Murca Spain.</p>

	of Nurses' and Physicians' Perceptions	the nurse-physician relationship at the hospital level.				
12.	Fekonja Z. et al (2023). Perceptions of Patient Safety Culture among Triage Nurses in the Emergency Department	This study aimed to assess the perceptions of the patient safety culture among triage nurses.	A total of 201 triage nurses participated in this study.	A cross-sectional survey design was used. The Emergency Medical Services-Safety Attitudes Questionnaire was distributed to triage nurses to collect data	The perception of the patient safety culture among triage nurses in the emergency department was non-positive and requires improvement	Slovenia

## Appendix 2. Critical appraisal of data

Author	Abstract and title	Introduction	Method and data collection	Sampling	Data analysis	Ethics and bias	Results/findings	Transferability	Implication/usefulness	Total	Comments
Ahmed I. Albarrak, Ammar S. Almansour , Ali A. Alzahrani, Abdulaziz H. Almalki , Abdulrahman A. Alshehri & Rafiuddin m. (2020).	4	4	4	4	4	4	4	3	3	34	The sample used, data analysis method and parameters used to analyze data brought about good findings results
Mohammadi f., Rustae S. & Bijani M.(2024).	4	4	4	3	4	4	4	4	4	37	The sample was small, but an in-depth interview and data analysis produced quality themes
Alzahrani N., Jones R. & Abdel-Latif M. (2018).	4	4	4	3	4	3	4	4	4	36	Results are in relation with the research aims

Erickson, Gellersetdt L., Hilleras P.&Craftman A.(2017)	4	4	4	4	3	4	4	4	4	37	Good article with answers to ours question.
Aydemir A. & Koc Z.(2023). Jack K., Christian M.,Kristen A. & Diana Slade.(2015)	4	3	3	4	3	4	4	3	4	34	The article correlates with the modern challenges in the ED
Akboga D. and Gelin D.(2024)	4	4	4	3	4	4	4	4	4	37	Apart from limiting the age of the sample to 44 years, the article is excellent.
(Pun et al., 2015)	4	3	3	4	4	4	4	3	3	34	The article talks more of clinicians
(Källberg et al., 2017)	4	4	3	4	4	4	4	4	4	37	Good article with good results.
Portela A.etal(2017)	3	3	4	4	4	4	4	4	4	36	The articles answer our question

Moreno P. etal(2024)	3	3	3	3	4	4	4	4	4	32	Good articles with clear findings
Fekonja Z. etal (2023).	4	4	3	4	4	4	4	4	4	37	Good article answering our question
(Afaya et al., 2021)	4	4	3	4	3	4	4	4	4	36	Good article