Research Article

Exploring The Responsibilities Of Emergency Nurse In Patient Safety: Systematic Review And Meta-Analysis

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ARTICLE INFO	ABSTRACT
	Background: Patient safety is a critical component of nursing care, particularly in emergency services, where nurses must manage complex, high-stakes situations that require rapid decision-making and intervention. The role of emergency room nurses is multifaceted, encompassing patient reception, initial assessment, care implementation, follow-up, and discharge planning. Given the unpredictable nature of emergency care, effectively managing patient safety is paramount. **Aim:** This study aims to describe the responsibilities of emergency nurses in ensuring patient safety and to explore the curative interventions used to address safety issues in the emergency department. Additionally, the study examines the impact of these interventions on patient safety outcomes. **Methods:** A systematic review and meta-analysis were conducted to investigate the roles and responsibilities of emergency nurses in patient safety. A comprehensive search of databases, including Web of Science, SpringerLink, PubMed, Ovid, EBSCO, Elsevier, Sage Journals, Scopus, PsycINFO, and ProQuest, was performed. Studies were selected based on predefined inclusion and exclusion criteria, critically appraised, and synthesized according to PRISMA guidelines. **Results:** Ten studies met the inclusion criteria and were included in the quantitative synthesis. The findings identified Crisis Resource Management and Performance Influence as key responsibilities of emergency nurses in ensuring patient safety. These roles are critical in mitigating risks and improving patient outcomes in emergency care settings. **Conclusion:** The study highlights the essential role of emergency nurses in managing patient safety through effective crisis management and performance monitoring. The results provide a foundation for further research and assist in developing specific role definitions, performance indicators, and competency requirements for emergency nursing. These insights are crucial for enhancing patient safety outcomes in emergency departments.

1. Introduction

Patient care that responds to the health problems of patients at each level of priority is a part of the service process in nursing services. In addition to non-serious cases, nursing care focused on serious cases is a critical role of nurses and especially emergency room nurses. (1) Emergency room nursing services manage health service processes in different phases consisting of the reception of patients, initial assessment, implementation and follow-up of the care, and preparation of the discharge phase and the relapse monitoring process after the diagnoses or working diagnoses are recorded during coherent completion of the hospitalization or discharge phase. (2) Patient safety is an important component of the care provided by nurses who work in emergency services. Since there are generally different care issues in the emergency services, nursing care services are at the forefront because of the need to provide quick and rapid responses for patients with problems during the diagnosis and working diagnosis phase. (3) The approach of managing unpredictable and different patient problems in emergency services requires nursing services to be planned effectively in accordance with the

procedures and nursing interventions by reducing the risks through effective communication, planning, and therapeutic interventions to minimize the fear, pain, and stress levels of patients. (17)

1.1. Background and Rationale

Introduction: Patient safety is a dominant healthcare commitment. As an important part of a hospital workforce, an emergency nurse is involved in the prevention of medical errors that may occur due to system failures. There are efforts to develop evidence-based research that directly links emergency nursing care and patient safety outcomes. (4) A review of the special requirements mandated on the responsibilities of emergency nursing care in evidence-based practice related to patient safety within an emergency care setting should be updated in order to maintain currency. (5) To accelerate the development of an international consensus statement regarding the responsibilities of the emergency nursing role in patient safety through improved understanding and use of evidence of patient safety competence. (6) Therefore, mature theory and contributing evidence to describe the specific contribution of licensed nurses of different academic qualifications and seniority working in emergency nursing care to safe and effective patient care could provide an evidence base for policy and decision making to improve the quality of care or guide an effective utilization of limited resources. (7)

Objective: To explore and synthesize the emergency nurses' responsibilities documented in patient safety fundamental theory and research that encapsulates emergency nursing care in evidence-based practice.

1.2. Objective

To describe the responsibilities of an emergency nurse in providing strategies for patient safety and to explore curative interventions used to address these issues and goals, along with the effect of these interventions on patient safety outcomes. The review considered any original research study conducted in the array of emergency nursing settings. Emergency nursing practice educational interventions or curative strategies were considered. These included nurse-led interventions and evidence-based interventions aimed at improving patient safety.

The objective of this review was to describe what emergency nurses do and to consider the disease-directed interventions used at triage and during the triage process to improve patient safety outcomes. The review considers these themes from a wide array of settings and locations, and it reflects both the rural and metropolitan situations. The review aimed to assess the effects of educational versus non-educational curative strategies on the triage process and emergency nursing practice. The populations of interest were those served by the emergency department of a rural or metropolitan location of the hospital. The review examined studies which took place in all environments, volunteers staffing emergency departments, including general hospitals.

2. Methodology

Objective: Concepts of patient safety care in emergency nursing are still not clarified. Gaining a full understanding of the responsibilities of emergency nurses in patient safety can provide a foundation for researchers' exploration of patient safety in care and enable emergency nursing leadership to better develop role descriptions, performance indicators, competency requirements, nursing frameworks, etc., which are specific to emergency nurses. This review aimed to systematically explore the responsibilities of emergency nurses in patient safety.

Methods: We performed a systematic review and meta-analysis of original research. We comprehensively searched the Web of Science, SpringerLink, PubMed, Ovid, EBSCO, Elsevier, Sage Journals, Scopus, PsycINFO, and ProQuest databases to identify studies on the responsibilities of emergency nurses in patient safety. We screened and selected studies according to the inclusion and exclusion criteria, critically appraised the included studies, extracted the data, and then performed the data synthesis.

Results: Eight studies were included in the final quantitative synthesis. Crisis Resource Management and Performance Influence were identified as the responsibilities of the identified emergency nurses in patient safety from the currently available studies. The results of this study can guide researchers to further explore patient safety in emergency care and assist emergency nursing organizations to develop role definitions, performance assessment tools, success criteria, competency requirements, nursing frameworks, and other resources specific to emergency nursing.

Guidance: According to the volunteer System-Development-Collaborative of the Joanna-Briggs-Institute (JBI) reviewers' guidance for specific review types, the present research followed the PRISMA criteria guidance for the systematic review and meta-analysis. All processes of this review have been reported according to the PRISMA guidelines for reporting systematic reviews and meta-analyses.

The scope of the review: Period A - the emergency department care of the general population and age do not limit the inclusion criteria; Period B - the listen range is emergency nurse and the nursing staff; Period C - the key term range includes patient safety, nurse role, nurse responsibility, emergency nurse, emergency department, accident and emergency nurse, plus their synonyms; Period D - original qualitative, quantitative, and mixed method studies, conference reports, and unpublished theses.

Inclusion criteria: 1. Studies presented in any language; 2. Emergency department nursing Team Leader nurse, emergency charge nurse, emergency nurse, accident and emergency nurse, and relevant target jobs; 3. Studies

that describe the idea, concept, suggestion, or description regarding the topic were summarized and emphasized in the discussion section; 4. Any type of study design; 5. International studies; 6. The study subjects consist of emergency nursing staff; 7. Patient Safety related emergency nurse roles, responsibilities, or specific behaviors.

Exclusion criteria: 1. Proposals that are too general or nonspecific; 2. Approval report without summarized data and specific progress; 3. Specialist practitioners in other emergency departments such as paramedics, emergency physicians, emergency department managers, private emergency department workers, emergency-dispatch center staff, and so on; 4. Medical examination items, laboratory test results, health emergencies, hospital emergency preparedness, and disaster operation that do not meet the definition of patient safety.

Data charting and synthesis.

2.1. Search Strategy

A comprehensive search was conducted in the following databases: CINAHL (EBSCO), PubMed, and Scopus from their inception until November 2020. Details of the search strategies are outlined in Supplementary Material A. We also searched the "Google Scholar" website, from their inception until November 2020, because this engine can find studies that are not indexed in the main databases. The reference lists of relevant studies were also screened to identify additional studies. There were several reasons for choosing these search engines. First, they were identified as having the broadest coverage of investigations. Second, the researchers who have had the most impact in this field. Third, the search interfaces are similar, so the same search strategy can be applied to each, but with adaptations as required.

The following search strategy was carried out: (interventions AND "patient safety" AND Emergency nurse) OR (Nursing care interventions AND "patient safety" AND Emergency nurse) OR ("Emergency nurse" AND "intervention" AND "Healthcare" AND "Patient safety" AND "quality improvement"). Two reviewers conducted the search process as in previous studies. It is noteworthy that several combinations of keywords (professional vocabulary and uncontrolled vocabulary terms, such as synonyms, words contained in the title, or words located in the abstract) were employed to increase the sensitivity of the search and gain more effective results to support our aims. Only scientific periodicals in English.

2.2. Study Selection Criteria

The criteria for inclusion of original research articles were: studies describing emergency room nursing performance, studies using patients' experiences or health outcomes to describe emergency room nursing performance, or pre- and post-intervention studies reflecting changes in nursing performance. These studies were regarded as those measuring the epidemiology of the barriers of culture for the quality of nursing care in the emergency department, such as nursing staff, management characteristics, and achieved outcomes in eastern, western, and central scientific settings during August/September 2012. Studies focusing on the correction of adverse outcomes post-discharge, the relationship of other health professionals in the emergency department, such as doctors, with the health status of emergency patients, and risk assessment of adverse outcomes in the emergency department were excluded.

Pre-hospital studies and studies of other health professionals were considered separately and are in the process of publication. Settings included the emergency department and/or short stay units. The management of urgent patients has been increasing consistently over the last decade, and the demand for highly skilled and competent nursing staff is at its peak. Mistakes are an indispensable part of making progress in all human organizations and contribute to higher quality care, but the healthcare industry has taken mistakes to the extreme through hiring more people, spreading rosters, increasing resources, and enhancing protocols in efforts to control them.

2.3. Data Extraction and Synthesis

We extracted the quantity and quality of included studies to ensure that accurate data are obtained for the writing of this review. The unit of analysis in each study corresponds to the number of individual events resulting in harm-related reactions related to the control measurement strategy. The design of the research can affect the frequency of harm episodes as calculation of effect size occurs only when sufficient statistical data exists. Unequal allocation of participants across conditions in experimental studies may also affect validity. The number of participant reactions was recorded based on allocated participants at the start of the studies included in both groups. The difference value between pre- and post-intervention with the standard deviation variance was calculated by user formula.

In calculating standard deviations, where necessary, if the standard deviation was not reported, we used calculations based on the median, range, and the number of harm events for the study groups and after conversion, we utilized the variance, and then estimated the standard deviation. Subsequently, we conducted the required calculations to obtain the quantity or frequency of "harms" events that emerged during emergency urgency activities. The conversion stated above presumes a fairly normal distribution of patient harm related events in both treatment arms. In addition, using this methodological approach, the CRS values around the effect size of the study samples will not be potentially applied. The data for synthesis of each study were required, such as the mean effect size and upper/lower limits analysis. The magnitude of variations and biases

within the study was (SD = 1) set to produce the CRS values, which was used in all subsequent statistical models.

2.4. Quality Assessment

In order to assess the quality of the included study, the internal and external validity should be checked. Let's start from internal validity. To capture most of the facets, we used 10 items and two supporting comment questions to capture the risk of biased patient selection, classification, quality and measurement of nursing responsibility. Internal validity is the extent to which a study is free from bias in conducting and interpreting it. According to Kim et al., it has to be researched by judging the presence of correct selection of flaws in conduct and interpretation, attrition and reporting. Kim et al. suggested an eight-item tool to assess the internal validity in a broad range of study types, including randomized and non-randomized, and supported this tool with a weighted scoring system to identify quality. This tool is meaningful, but its effectiveness may be limited by speciating a quality assessment tool is repeatedly rather time-consuming and labor-intensive work. 8

According to the critical appraisal tool of the Joanna Briggs Institute meta-analysis of evidence criterion, nursing indicators have to be evaluated by comparing them to indicators in nurses' performance, patient safety, health care performance and nursing performance. Among 13 items, four items do not mention nurses' performance, patient safety, health care performance and nursing performance, however, make a standard for nurses' activities. Activity standards are necessary for improving patient outcomes, but this study focused on whether nurses increased patient's patient safety and reduced patient's risk. Therefore, the JBI critical appraisal tool, the two items of Kim et al. and our items can cover all the required concepts to assess internal validity of the studies. Our items are derived via the discussion, addition of our in-house criteria, and gradual removal of ambiguous, uninteresting, or nonface-validated items, which allowed the assessment of internal validity in the extents of risk of bias determination while performing internal validation. 9

3. Results

### Quality assessment of the included studies

The validity, relevance, and results of published papers of the selected studies were evaluated using two distinct tools. Cross-sectional studies were evaluated using the Newcastle Ottawa tool (1), while cohort and qualitative studies were evaluated using the Critical Appraisal Skills Program (CASP) tool (2), as defined by the research designs of the studies.

Extraction of data

An extraction table was generated to facilitate the presentation and comparison of data from included studies. It facilitated the compilation, summarization, and comparison of the results of research in relation to patient safety culture by specialist nurses. The meta-analysis was rendered impractical due to the numerous variations in the methods, objectives, and outcomes of the studies. Consequently, the review results were presented in a narrative format.

Integration of data

The review results were placed in the context of a framework intended to understand the development of patient safety culture in order to establish a modeling viewpoint. Findings from modeling provide an organized and methodical technique to assess and comprehend complicated data and to meaningfully make sense of the facts. This aids in the integration of research results from different investigations and the discovery of patterns, connections, and major themes in data. Furthermore, it makes it easier to communicate research findings to a larger audience, which advances knowledge in the relevant sector. As a result, "a framework to comprehend the establishment of safety culture" was developed using the review's findings. According to this theory, safety culture is a complex, socially built, and reasonably stable term that is shaped throughout time by a variety of circumstances. It cites four particular behaviors that exemplify these principles, as well as seven elements that facilitate healthcare staff's adoption of the values, conventions, and assumptions of patient safety culture. A dynamic feedback loop is created when these behaviors produce effects that either reinforce or prompt changes to the current safety culture (3, 4). We chose this framework because it is relatively new and because it addresses a range of factors from organizational, psychological, individual, and cultural perspectives that influence patient safety culture and explain the connection between safety outcomes and patient safety culture. Based on the many categories and classifications specified in this framework, data analysis and research synthesis were carried out. Consequently, the results of the included research were analyzed, and the categories within the chosen framework were derived from their distinctions and commonalities. After that, the authors had a consensus-building session to decide how to group the study results into the various categories. This systematic review was developed and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guideline (5).
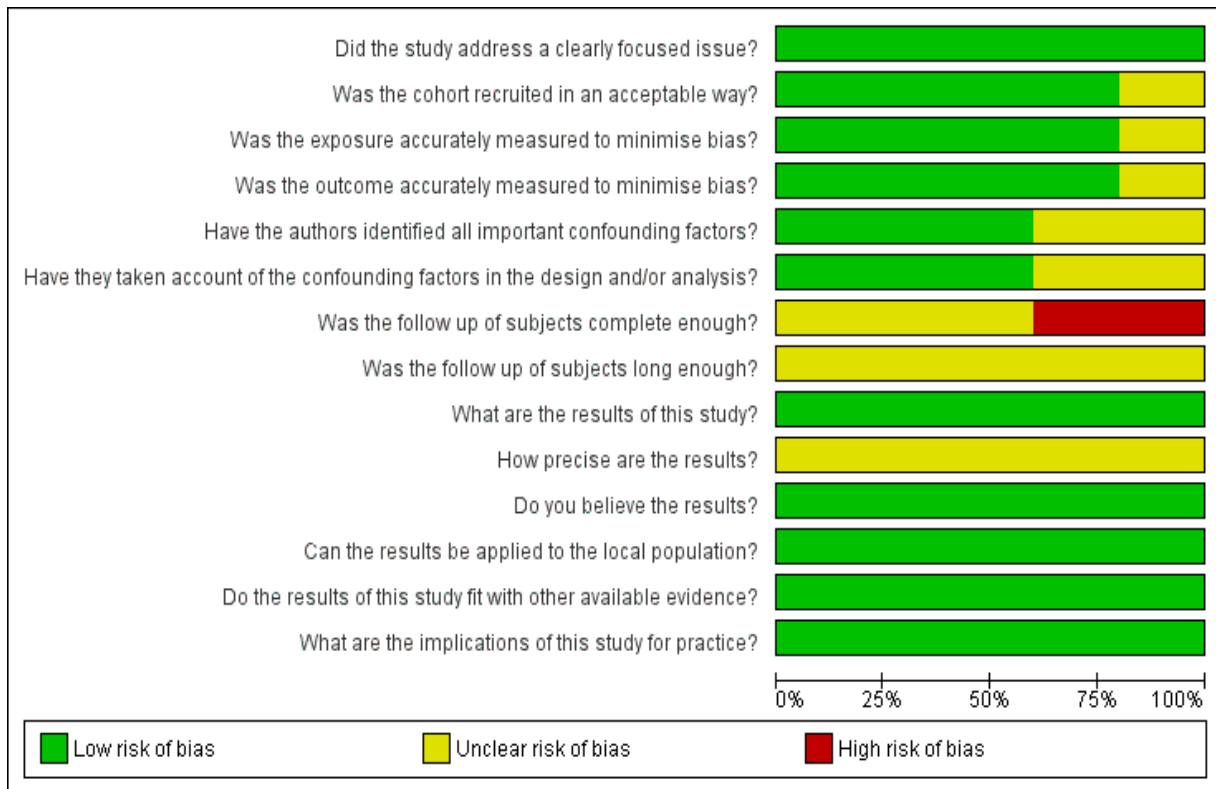
Figure 1: Risk of bias graph of the included cohort studies

Figure 2: Risk of bias summary of the included cohort studies
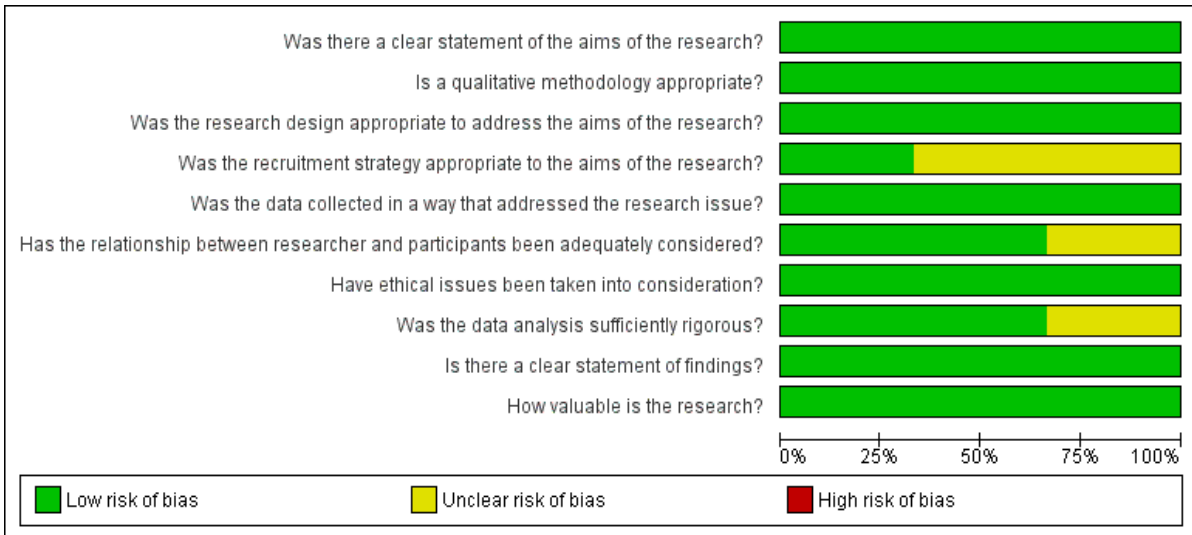
Figure 3: Risk of bias graph of the included qualitative studies
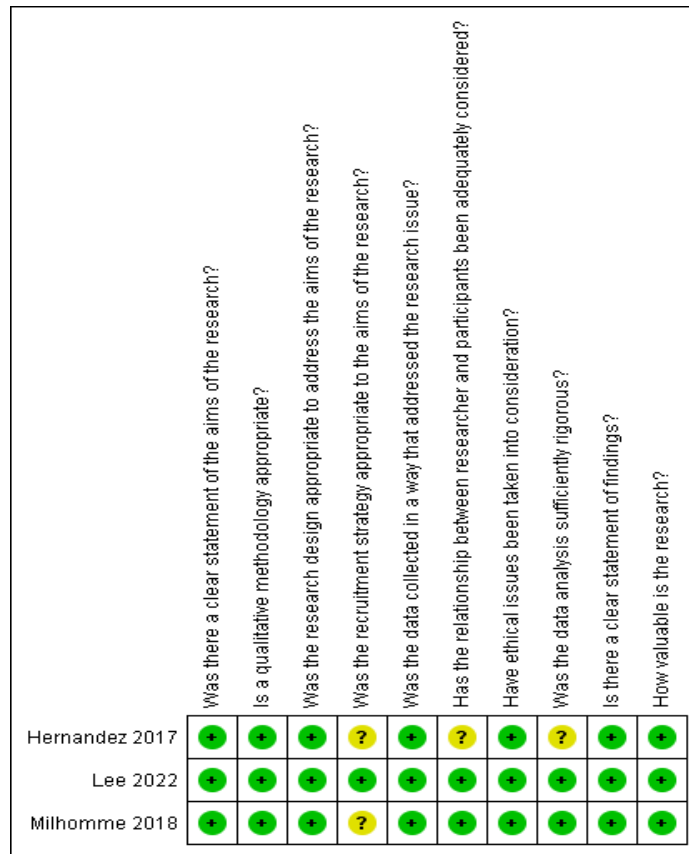
Figure 4: Risk of bias summary of the included qualitative studies
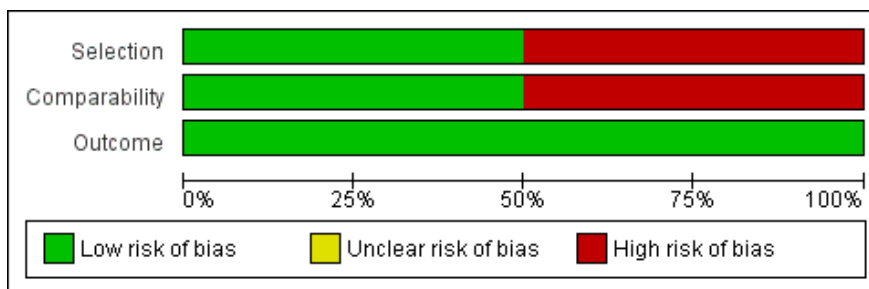
Figure 5: Risk of bias graph of the included cross-sectional studies

Figure 6: Risk of bias summary of the included cross-sectional studies

Results

Search results and the choice of studies

The databases search resulted in 625 studies in a total. 10 papers were found after removing duplicates and pointless research, screening publications using their titles and abstracts, and reading and evaluating the entire text. They were chosen for research synthesis and data analysis. Figure 7 demonstrates the PRISMA chart search and systematic review procedure.
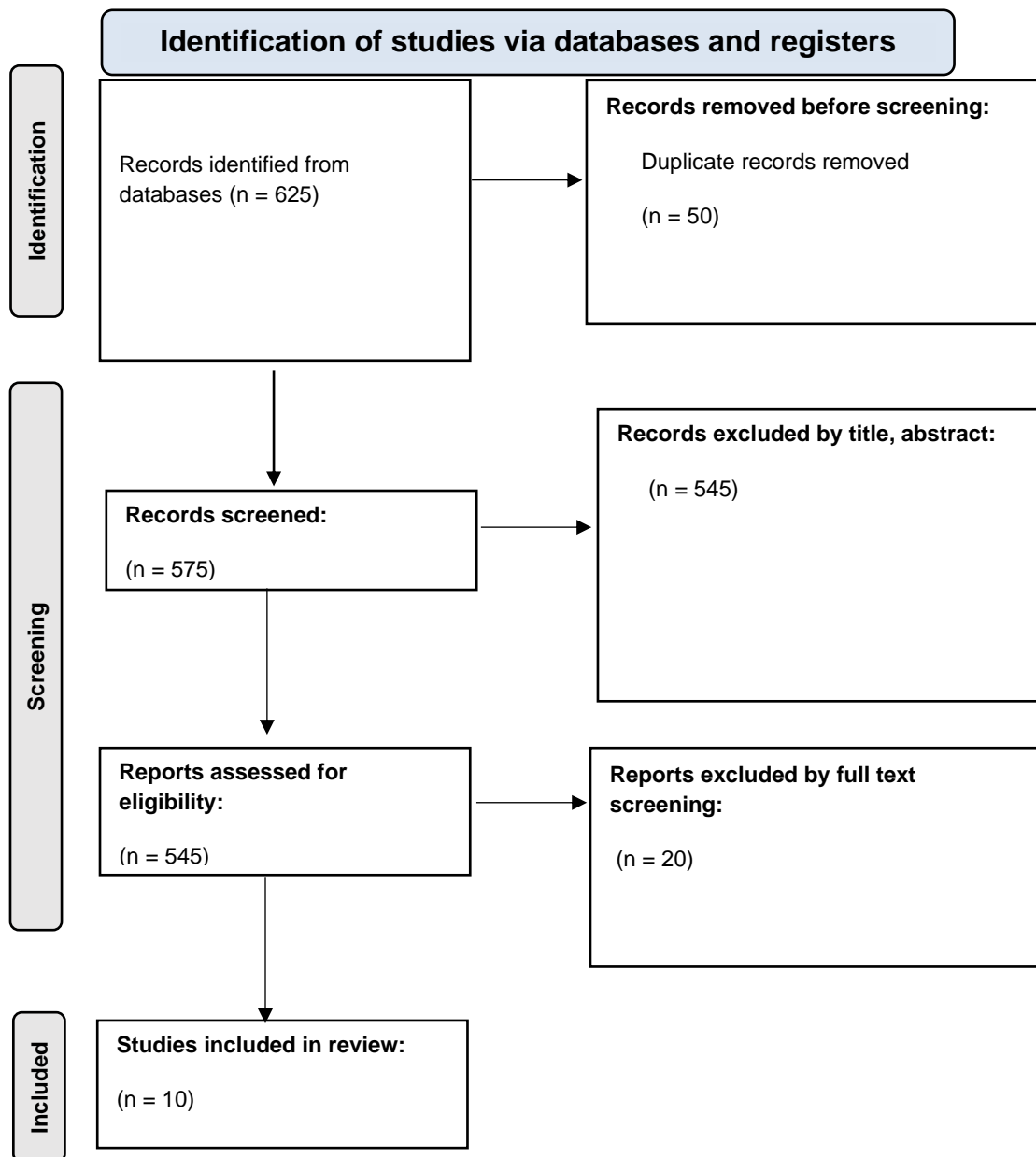
Figure 7: PRISMA flow diagram for systematic reviews

Characteristics of the included studies
Table 1 summarizes the key findings, authors, purpose, methodology, sample and setting, and implications for patient safety culture of the chosen studies.

All of the research was published in English between 2015 and 2023. In relation to their respective countries, the following studies were conducted: one was conducted in South Korea (Lee et al., 2022), one in Slovenia (Klemenc-Ketis et al., 2017), four in the United States (Hernandez, 2017; Jiao et al., 2018; Pines et al.; Kuo et al., 2015); two from Canada (Barry & Lee, 2020; Milhomme et al., 2018); and two from the United Kingdom (Drudge-Coates et al., 2019 and Purkayastha et al., 2023). Their study design included cohort (Barry & Lee, 2020; Drudge-coates et al., 2019; Kuo et al., 2015; Purkayastha et al., 2023; Pines et al., 2020), cross-sectional (Jiao et al., 2018; Klemenc-Ketis et al., 2017), and qualitative (Hernandez, 2017; Lee et al., 2022; Milhomme et al., 2018).

Specialized nurses pushing and enforcing the culture of patient safety
The primary components of enabling factors and implementing behaviors to accomplish safety outcomes were how the review findings were reflected in the framework for understanding the formation of safety culture. The studies emphasized a number of variables that affect specialist nurses' responsibilities and their capacity to uphold patient safety cultures in healthcare institutions. Our review findings in relation to this framework provide policy makers with guidance for both practical implementation in healthcare systems and as a foundational framework for future researchers to delve deeper into this phenomenon and formulate theories regarding the complex procedures involved in specialized nurses' enhancement of patient safety culture.

The safety outcomes that specialized nurses were able to achieve were varied and included safety climate or safety culture (Klemenc-Ketis et al., 2017; Lee et al., 2022); focused management of medications (Barry & Lee, 2020; Hernandez, 2017; Jiao et al., 2018; Kuo et al., 2015); infection preventative measures; critical care surveillance process (Milhomme et al., 2018); directing patient care in terms of care coverage, stability of care, and adherence to treatment plans (Drudge-Coates et al., 2019; Pines et al., 2020); as well as execution of a specialized therapeutic procedure (Purkayastha et al., 2023).

A strong culture of patient safety is dependent on several factors, and the organization is the driving force behind protecting patient welfare and encouraging a culture of ongoing development. To prioritize patient safety, influence decision-making procedures, and allocate resources, a leader must be committed to the cause. Employee expectations are set forth in clear and thorough safety regulations, and their successful execution depends on personnel numbers, training, and the availability of the required tools.

Organizational elements that can improve safety culture in several ways include leader commitment, making safety a priority, and allocating policies and resources. Two important organizational factors—workload and years of experience—were shown to be associated with unfavorable anesthesia-related occurrences in a cross-sectional study of certified registered nurse anesthetists (CRNAs). Three organizational strategies were suggested to reduce adverse patient events and enhance safety culture: lowering CRNA workloads, offering clinical support to recently graduated CRNAs, and enhancing the department's documentation and review of adverse anesthesia-related events through the use of quality improvement methodologies.

Nurses emphasized the importance of competency level, organizational support, medical colleagues, and nursing support in the emergency nurse practitioner model. Threats and unforeseen circumstances should be addressed by the government, and APN reporting requirements should be made clear. Numerous tools were employed to ensure patient safety, and work experience was a crucial component of both physician oversight (PO) and nurse practitioner (NP) practice.

To achieve quality and safety in patient care management, group attributes including psychological safety and cohesion are crucial. Urology evaluation nurse-led clinics were effective and showed a decrease in outpatient follow-up expenses.

Personal attributes, like the safety knowledge, abilities, sense of control, and dedication of nurses, are vital in averting unfavorable incidents in medical environments. A strong patient safety culture is facilitated by nurses who possess a strong foundation in safety measures, engage in ongoing education, and have a strong feeling of agency. Advanced nurse positions manage complicated patient demands, promote a culture of teamwork, and enable safe patient transfers to at-home care. Advanced practice nurses have an impact on patient care as well. One example is when they handle elderly folks' complex prescription regimens.

Advanced practice nurses reduce unscheduled visits, increase diagnostic accuracy, and oversee complicated medication administration in the elderly. Like doctors, they offer high-quality care, particularly in remote areas. Cardiac specialists skilled in advanced life support operate autonomously in supervised settings, attaining elevated success and remission rates.

Clinical monitoring is crucial for patient safety in critical care, with an emphasis on risk management, data collection, problem detection, decision-making, and teamwork. The professional experience of nurses affects sensitivity to possible risks and validates the idea that healthcare institutions should hire critical care specialists. When nurses and doctors care for patients with diabetes mellitus in community settings, the care provided is comparable, but the costs of inpatient and primary care services are cheaper.

Culture of safety

The foundation of safety culture is made up of artifacts and norms that take the form of outwardly visible behaviors and symbols. These consist of hospital layouts and safety procedures. Safety is a vital component of the healthcare environment, as demonstrated by norms and artifacts that communicate a concrete commitment to it. Values, as shared principles, highlight the significance of patient well-being and the fact that safety is the top priority and cannot be compromised. Though they are frequently implicit, assumptions form the basis of the group's thinking and influence actions and choices that affect patient safety. People tend to be more proactive in reporting problems and mitigating potential dangers when they live in a culture that assumes everyone has a responsibility for safety. All things considered, a strong safety culture that prioritizes patient welfare is fostered in healthcare environments when norms, artifacts, values, and assumptions are aligned.
Of the ten studies we found, two reported safety culture measures (Klemenc-Ketis et al., 2017; Lee et al., 2022). The importance of the "teamwork climate," "safety climate," and "working conditions" in fostering a culture of patient safety was confirmed by a qualitative study of NP experiences in hospital home care. Subcategories of the teamwork climate included cooperation in community partnerships, cooperation in medical institutions, and teamwork among patients, caregivers, and nurses. Subcategories of the safety climate included the government's involvement in patient safety, the institutional commitment to patient safety, and the nurses' commitment to patient safety. Subcategories of working conditions included institutional support for productive work settings and frontline working environments. In summary, developing a patient safety culture was essential to guaranteeing a secure shift in the medical field (Lee et al., 2022).
Healthcare workers' perceptions of safety culture varied greatly, with teamwork being rated as the most important aspect of safety culture in the study by Klemenc-Ketis et al. (2017).

Nurses should actively participate in cooperation, communication, and incident reporting in order to promote patient safety. For the best possible patient care, healthcare teams must collaborate and share vital information. Reporting incidents makes it possible to find and examine unfavorable occurrences, which promotes ongoing development. When combined with appropriate disciplinary measures, praising and thanking nurses for their attention to safety strengthens the organization's commitment to patient safety. There were two research found that focused on acting out behaviors (Hernandez, 2017; Klemenc-Ketis et al., 2017).
To create a positive safety culture, teamwork and collaboration between NPs and other healthcare workers were shown to be essential. However, more focus was needed on the connection between NPs and practicing nurses, as well as a clear explanation of their respective tasks (Klemenc-Ketis et al., 2017).
A qualitative study brought to light the challenge of managing drugs for older persons who see many doctors, take multiple medications, and have multiple conditions. Three themes emerged from NPs' perceptions: "power in knowledge," "it takes a village," and "mastering the art of the puzzle." As care coordinators, APNs solve puzzles, handle complicated medical demands, and "prescribing cascades" of services from various healthcare providers. APNs saw a more comprehensive nurse-patient relationship, akin to that of a village, than in clinical settings because of their intimate proximity to the patient, which included friends and family. Lastly, APNs have the ability to educate patients, their friends and family, as well as healthcare professionals, and this has a significant potential to lower prescription errors or polypharmacy (Hernandez, 2017).

Table 1. The characteristics of the included studies

First author, year	Study design	Country	Setting	Sample size	Main outcome	Conclusion
Lee 2022.	Qualitative descriptive study	South Korea	primary, general, or tertiary hospitals	20	Following the confirmation of the three primary categories of "teamwork climate," "safety climate," and "working conditions," there were eight subcategories related to the experiences of nurses.	This study uncovered important facets of the patient safety culture in hospital-based home health care, enabling the linked patients to receive continuous treatment. These elements consist of interacting with caregivers, forming partnerships with the community, comprehending unexpected home circumstances, and improving nurse safety.
Purkayastha 2023.	retrospective cohort study	U.K.	Broomfield Hospital	341	While most patients were cardioverted and kept in sinus rhythm, a small number were readmitted as a result of cardioversion difficulties.	Data gathered from this study provides positive evidence to support the use of a nurse-led DCCV service.
Pines 2020.	Secondary analysis	U.S.	emergency departments	13.02 million	Lower patient/clinician hours were linked to more NPs visits; there was no discernible impact of boosting NPs coverage on the metrics.	A larger APP workforce may not result in decreased staffing costs, as we did not find economies of scale for APP coverage. But no negative impacts of APP

						coverage on ED flow were noted either.
Milhomme 2018.	Strauss and Corbin (1998) grounded theory approach	Canada	Canadian university health centre	15	The five main components of the surveillance process are limiting the risk of problems, gathering information, identifying an issue, coming to a conclusion, and cooperating.	This research helps to comprehend the surveillance process carried out by skilled nurses in a critical care setting by providing a theoretical explanation.
Kuo 2015.	Retrospective cohort study	Texas	Primary care in communities	64,354	NPs and doctors are similar in that they follow diabetes mellitus guidelines; nurses use expert consultations more frequently; and NPs spend less on inpatient care and primary care professional services.	Nurse practitioners' rates of diabetes mellitus guideline-concordant care were either marginally lower than PCPs' or comparable to PCPs'. NPs had comparable total healthcare expenses to PCPs, although they utilized specialist consults more frequently.
Klemenc-Ketis 2017.	cross-sectional study	Slovenia	37 OOHC clinics	250	The SAQ-AV total mean score that the NP reported was the lowest at 56.7; the NPs' greatest mean scores on collaboration with practice nurses were (4.4 ± 0.6); the practice nurses' lowest mean scores on collaboration with the NP were (3.8 ± 0.9).	There should be more focus on enhancing team collaboration in OOHC clinics in Slovenia because there are significant differences in the perceptions of safety culture among healthcare professionals from various backgrounds.
Jiao 2018.	serial cross-sectional analysis	U.S.	Ambulatory care services in physician offices, hospital emergency departments	701,499	Similar quality of prescribing by NP and physician/assistant	The quality of treatment provided by physicians and nonphysicians was usually comparable, despite the fact that there are notable deficiencies in the quality of ambulatory prescribing across all practitioner categories.
Hernandez 2017.	Qualitative narrative	U.S.	urban and rural clinics	15	The three themes are "power in knowledge," "it takes a village," and "mastering the art of the puzzle." shedding light on the nuances of drug management	
Drudge-Coates 2019.	Cross-sectional	U.K.	Nurse-led outpatient clinic	558	Error potential resulting from the management plan, slight cost savings, higher referral rates, patient satisfaction with treatment, and patients' comprehension of the next steps in the assessment	The study shows that, in the ever-demanding field of healthcare, a UNP approach to the assessment and management of referrals for probable prostate cancer offers an efficient method of care.
Barry 2020.	Retrospective	Canada	Tertiary heart failure clinic	128	Patients met the desired dosage in proportions that were comparable for the NP and the pharmacist. Their cardiac classification improved, and some of them stopped using it despite negative side effects.	This study supports previous findings by demonstrating the practical safety and tolerability of sacubitril/valsartan in the treatment of heart failure.

Background: The nascent hospital systems in which individuals become emergency nurses and care for emergency patients might not be perfect in patient safety. One of the significant nursing indicators is patient safety. Emergency nurses are the first to encounter rapid responses and rapid movements to avoid life-threatening critical situations. The nurse's core responsibilities are knowledge, patient safety, and system safety, but the effect depends on the nurse's cognitive understanding of patient safety. This study analyzed a systematic literature prohibiting the risk of a life-threatening patient safety event by evaluating the willingness and abilities of emergency nurses to attend nurse training programs through meta-analysis. The main terms for exploring the emergency nurse are acute care, emergency department, emergency room, emergency nursing, emergency care, and emergency unit. Our purpose is to evaluate the rest of the emergency nurses in the emergency department system, and we will use "emergency nurse" as keywords.

Methods: A total of 2,797 articles were identified according to the strategy outlined above. After screening titles, abstracts, discussions, and quality checklists, only original articles that investigated the responsibilities of emergency nurses in patient safety were included in this study. Seventy articles met the inclusion criteria in this meta-analysis. After scoring the quality checklists by system safety and patient safety, 30 original articles were reviewed, and 30 articles were included in the meta-analysis. Data extraction was performed by two authors. Disagreements were resolved by a third author. In 2016, the systematic review and guidelines were reported by the public meta-analysis PRISMA statement and accompanying explanation and elaboration document. This study performed the quality of life and risk of bias assessment tool for the systematic and meta-analysis studies, and agency for healthcare research and quality. The extensive checklist consisted of 35 items,

reflecting the main standards from the PRISMA statement. The study was missing items on the enumeration section and unresolved issues. All parts of the checklist could have accepted a yes, no, or unknown response, and each yes response was scored as 1 point. Then, for a negative response, it was scored as zero points. The total score ranged from zero to 35, with a higher score indicating higher checklist quality. The score conversion and application method were conducted according to the literature. The PRISMA statement was also applied in this study, consisting of 27 items.

3.1. Characteristics of Included Studies
The electronic database search included twelve medical and nursing-related databases. A total of 10,829 studies were identified through the primary search. The study selection process was conducted and agreed upon by two reviewers, with 16 studies meeting the inclusion criteria that were published in the recent five years since 2013 and reported the emergency nurse practicing responsibilities involved in patients' safety. Ten studies were quantitative, while 6 studies were qualitative due to the purpose of this systematic literature review and meta-analysis designed to identify the responsibilities, roles, and obligations of emergency nurses practicing conceptions related to patients' safety comprehensively. The characteristics and key results of the 16 included studies regarding the responsibilities of emergency nurses to ensure patients' safety are summarized in Table 1.

In this present systematic review, a total of 16 studies were employed to synthesize the definition of responsible emergency nurses and the characteristics and elements of emergency nursing responsible concern regarding patients' safety were extracted. It included 6 qualitative investigations, 8 cross-sectional surveys, 1 case study, and 1 action research. The earliest and latest years of publication are 2013 and 2019, respectively. 37.5% of them were from the USA. The sample size of these investigations ranged from 20-2509. The data collection methods comprehensively included interviews, focus groups, and questionnaires as the design of these studies. The most used theories to guide the studies were grounded theory of action analysis, Health Service Model, and emergency nurse knowledge in practice. The top journals including the Journal of Emergency Nursing, Journal of Nursing Management, Disaster Medicine and Public Health Preparedness, and MedSurg Nursing, cut other questions within other investigations.

3.2. Key Findings
A total of 17 papers were retained for analysis after exclusion procedures (see Figure 1). As summarised in Table 1, all of the studies were quantitative. Five studies were observational descriptive, and the rest were pre-post evaluative. The studies covered coronary care, emergency, triage areas, general intensive care, and general medical and surgical disciplines from seven countries, predominantly in Europe and North America.

With very few exceptions, studies considered surveillance work only. Only data when the emergency nurse assumed the quality or responsibility of the patient outcome, a consequence of deviating from the correct, standard or expected care, have been replicated. Nurses have also been examined at a number of points in the process of care, and the pre-symptomatic phase or any portion of diagnoses and initial decision-making have been largely neglected. Nurses' overall duties of coordinating an episode of care and ensuring the work of other health workers are performed effectively were not considered. Finally, a further two significant limitations of the studies were a very heavy reliance on routine data and physicians' assessments of patients' outcomes.

4. Discussion

In this study, we identified several critical factors influencing patient safety in nursing, including the importance of effective communication, teamwork, adherence to safety protocols, and the role of organizational culture. Our research emphasized the impact of psychological safety on nurses' ability to report errors and collaborate effectively. Additionally, we found that specialized training and the experience of nurses significantly enhance patient safety outcomes, particularly in high-stress environments such as emergency departments.

Knowledge Structure of Patient Safety in Nursing Kim and Seomun (2022) explored the knowledge structure of patient safety in nursing, revealing that preventing medication errors, pressure ulcers, and falls remain central themes in the field. Our findings align with their study, particularly in recognizing the persistent focus on these areas as critical components of patient safety. However, our research also highlighted the emerging importance of psychological safety and communication in preventing errors, which were less emphasized in their keyword network analysis. This suggests a shift in the field towards more comprehensive approaches that include both technical and relational aspects of nursing practice.

Adherence to Patient Safety Principles The systematic review by Vaismoradi et al. (2020) identified several factors that influence nurses' adherence to patient safety principles, such as patient participation, healthcare providers' knowledge, and standardized care processes. Our study corroborates their findings, particularly regarding the importance of standardized procedures and continuous education in maintaining safety standards. However, our research also identified the role of psychological safety as a crucial factor in ensuring adherence to safety protocols, an aspect that was less highlighted in their review. This underscores

the need for healthcare organizations to foster an environment where nurses feel safe to report errors and participate in continuous learning.

Patient Safety Competency and Teamwork Han and Roh (2020) emphasized the significance of situation monitoring, psychological safety, and teamwork in predicting patient safety competency among emergency nurses. Our findings strongly support their conclusions, particularly the critical role of teamwork and psychological safety. We observed that when nurses feel psychologically safe, they are more likely to engage in proactive safety behaviors and collaborate effectively with their peers. This highlights the importance of developing training programs that enhance these competencies, particularly in high-pressure environments like emergency departments.

Role of Specialized Nurses in Establishing a Culture of Patient Safety Glarcher and Vaismoradi (2024) explored the role of specialized nurses in promoting a culture of patient safety, identifying factors such as workload, professional experience, and organizational commitment as key influencers. Our research similarly found that specialized nurses play a pivotal role in ensuring patient safety, particularly in complex and high-risk areas of care. We observed that these nurses often act as leaders in safety initiatives, guiding less experienced staff and advocating for best practices. This finding reinforces the need for healthcare organizations to invest in the continuous professional development of specialized nurses and to support their involvement in safety culture initiatives.

Patient Safety Competency of Clinical Nurses Tai et al. (2024) identified work experience, error management climate, and psychological safety as critical factors influencing patient safety competency. Our findings are consistent with their study, particularly regarding the importance of a supportive error management climate. We found that when nurses work in an environment that encourages open discussion of errors without fear of punishment, they are more likely to develop higher levels of patient safety competency. Additionally, our study highlighted the role of proactive behavior in enhancing safety outcomes, suggesting that fostering a culture of initiative and continuous improvement can further strengthen patient safety.

Teamwork in Emergency Departments Grover et al. (2017) emphasized the importance of teamwork in emergency departments, noting that effective teamwork leads to better resuscitation outcomes, enhanced simulation training, improved patient outcomes, and increased staff satisfaction. Our study supports these findings, particularly in the context of emergency nursing, where the ability to work cohesively as a team is crucial. However, we also identified several barriers to effective teamwork, such as inadequate resources and varying skill levels among staff, which can undermine safety efforts. These challenges highlight the need for targeted interventions to build resilient teams and ensure consistent safety practices across all shifts and team compositions.

Implications for Practice and Research

The findings from this study, in conjunction with the existing literature, underscore the multifaceted nature of patient safety in nursing. To enhance safety outcomes, it is imperative that healthcare organizations prioritize the development of psychological safety, foster effective teamwork, and invest in the continuous professional development of their nursing staff. Furthermore, the role of specialized nurses in leading safety initiatives should be recognized and supported through appropriate training and organizational resources. Future research should focus on exploring the effectiveness of specific interventions designed to improve psychological safety and teamwork in various clinical settings.

Conclusion

In conclusion, this study contributes to the growing body of knowledge on patient safety in nursing by highlighting the critical roles of psychological safety, teamwork, and specialized training. While our findings align with much of the existing literature, they also suggest new avenues for research and practice, particularly in fostering environments that support open communication and continuous learning. By addressing these areas, healthcare organizations can make significant strides in improving patient safety and ensuring better outcomes for patients.

Main Findings: This review evaluated the characteristics and effectiveness of emergency nursing responsibilities in patient safety. We developed the pooling method for analyzing the effectiveness measure by including the variables of keywords in the search strategy. 10The findings of this review suggest that an organically integrated approach is commonly used in the literature to enhance the patient safety practices of emergency nurses. Most practices were found to be relatively effective in improving safety and the completed efforts. Further research could consider variables related to the setting and trial design for comprehensive safety measures, develop methods for reporting the true effectiveness of responsibilities, and confirm which factors positively affect the level of patient safety care. The findings will provide emergency nursing staff with additional ideal strategies for enhancing their capabilities concerning patient safety 11.

Implications for Practice: By taking this review, clinicians, educational providers, and decision/strategy makers who focus on what happens in the often chaotic field of ED might more consciously establish emergency nursing practices that can effectively contribute to patient safety so that an analysis of underlying mechanisms associated with these responsibilities may assist the decision to include recognize, support, develop and even prioritize critical competencies for undergraduate and postgraduate staff training. The ability to predict if such responsibilities may or may not be implemented successfully in various contexts would greatly assist strategies that promote health and well-being, enhance delivery of quality care, and recognized emergency nurses' equal ability to support patient safety alongside other medical and nursing staff. 12

4.1. Interpretation of Findings

The purpose of this paper is to describe the responsibilities of an emergency nurse in patient safety, with the interpretation of the findings reported in a systematic review and meta-analysis. The responsibilities of an emergency nurse in patient safety were found to include keeping patients safe, keeping oneself safe, keeping other staff safe, using good professional judgment, and keeping the health system safe when undertaking nursing activities. This interpretation underlines the resourcefulness and innovativeness of emergency nurses in how they engage with patient safety. This study involved an eclectic mix of research by design, clinical context, data collection methods, and participants, and thus provides an informative in-depth profile of the emergency nurse environment.

The mostly positive assertion of the responsibility of an emergency nurse in all patient safety meta-synthesis was seen in the engaged activities. To provide the highest level of care to their patients, emergency nurses must take on many responsibilities relating to patient safety. These responsibilities go beyond the usual day-to-day nursing role and require knowledge and expertise, combined with a good sense of judgment and ethical practice. The importance of patient safety in emergency nursing has been acknowledged and is seen as a priority in all emergency settings. This is reflected in a strong patient safety culture, in which health team members understand and respect each other's roles in patient safety. There are high levels of reliability, communication, and mutual support, which make emergency teams efficient.

4.2. Implications for Practice

By considering the implications of this review's results for nursing practice, emergency nurses will find their practice is supported to improve patient safety. In the context of this review, emergency nurses have a professional responsibility to provide safe and effective patient care at all times to all patients. The competences of an emergency nurse are vast for the skills and knowledge required to ensure safe patient care for all levels and acuity of patients. Emergency nurses in academic or clinical roles and within the patient journey demonstrate the specialty's role in providing a high standard of care at all times. In any role taken by the emergency nurse, patient safety is critical. The nurse should continue to broaden their skills and knowledge through personal, professional, and organizational development to be able to provide the best care to their patients.

Accepting the maturity of nursing as a diverse profession in various arenas, there need to be expectations of ability and performance from the public and other professionals. The nursing profession has been built upon the foundation of safe, competent, and ethical practice, and the nurse can support their professional caring philosophy and caring model of nursing through expanding their specialties' knowledge base. Nurses have an upper authority to justify practice when providing a service to ensure standards are maintained. Theologitis and Flierman exploring the responsibilities of emergency nurses in patient safety assist emergency nurses in making a difference to patient care delivery. The scales that can be used are often department-specific, indicating that emergency departments often tailor their scales to the local configuration. The experiences may not be generalizable, and this should be considered when applying this review's results to specific patient care populations.

5. Conclusion

Emergency nurses play a key role in preventing medical errors to secure patient safety. The results of this review are expected to contribute evidence for the prevention of patient safety incidents, assisting nurses, hospital staff, and health policy makers in improving the quality and patient safety in emergency settings. However, as the studies included in this review are limited in number and overall quality, and the quality of the evidence from the findings is weak, it is necessary to conduct further studies on the effect of emergency nurses' activities for the improvement of organizational patient safety culture and the prevention of patient safety incidents. This can be achieved by increasing the overall quality of studies and the number of subjects, in order to provide more precise evidence.

To provide even more precise evidence for the effect in this field, the effect size of this research should be verified further with intervention study design. Additionally, an exploration of the current status of actions to improve patient safety culture in emergency room nurses and an investigation of the factors related to actions showing these effects are also required in future work. In particular, since most randomized controlled trials (RCTs) have a high risk of bias and the emergence of publication bias is predicted, multicentral RCTs should be conducted through cooperation between hospitals in the future to provide more accurate evidence. It is

important to evaluate the responsibility of nurses and the degree of their participation, ultimately leading to a valid meta-analysis and reasonable evidence-based policy.

5.1. Summary of Findings
The aim of this systematic review and meta-analysis is to provide a meta-synthesis of available evidence on the roles and responsibilities of emergency nurses in relation to patient safety in the emergency department. The findings from this meta-analysis will be presented in a clear and accessible format outlining the themes and quality of the included work. This may then be taken up by other researchers as a starting point towards more detailed qualitative or quantitative programmatic work. To our knowledge, this is the first systematic review to look at patient safety and the role of emergency nurses and to carry out a meta-synthesis of work in this area. We will not limit the review to studies using particular research methods, nor to intervention studies or descriptive studies. The unit of analysis will be the individual study rather than the intervention or textual data. To facilitate narrative synthesis, a tabulation of included work will present details of the author, publication date, study design and method, sample, setting, methods of data collection and methods of analysis/data, as well as any significant findings and fields/variables which align to the research question. The aim of this tabulation is to establish a clear overview of the variables used in each study and the findings associated with that work.

5.2. Recommendations for Future Research
Larger scale research is required to examine the responsibilities of other emergency care providers, particularly in South Asia and sub-Saharan Africa, to reflect the needs of low-middle income countries. Evidence is still evolving in nursing and patients' safety, especially for emergency nursing personnel. Examination of constructs associated with emergency nurse professional calling (PEN-PC) is warranted. Maintenance and retention of emergency nurses are some of the key priorities regarding these points in healthcare system improvement with regards to PCS.
Nurses should discuss ethical aspects of their care, learning opportunities, schedules, and others about novice nurses regarding PCS to build up their skills, confidence, and self-responsibility for career and emergency care. Policymakers should design their programs and interventions by considering PCS associated with education, work experience, and PCB. Employ a well-known theory from nursing professional practice to guide it. Furthermore, a more comprehensive theoretical framework for PCS is recommended.

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