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Assessing Triage Decision-making and Contributing Factors to Emergency Room Efficiency: Basis for Training Program for Er Nurses in Private Hospital in Puerto Princesa City

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ABSTRACT

Foyo, R. G. M. **"Assessing Triage Decision-making and Contributing Factors to Emergency Room Efficiency: Basis for Training Program for ER Nurses in Private Hospitals in Puerto Princesa City"** Research Adviser: Jenifer H. Alcorano, RN, MSN, MHA, FPCHA

Emergency Departments (EDs) rely on accurate and timely triage to ensure patient safety and efficient care. This study assessed the triage knowledge and decision-making abilities of ER nurses in two private hospitals in Puerto Princesa City and identified factors that contribute to effective emergency room triaging as a basis for a training program. A descriptive-correlational design was used, involving eighteen (18) ER triage nurses from Adventist Hospital Palawan and Cooperative Hospital. Data were collected through a self-administered survey covering nurses' demographic profiles, triage decision-making abilities (cognitive skills, critical thinking, experience, and intuition), and perceived contributors to triage efficiency related to hospital environment and resources.

Findings showed that ER nurses demonstrated high to very high levels of triage knowledge and decision-making ability, particularly in areas related to experience and clinical judgment. Age, training, and years of experience were significantly associated with nurses' triage competencies. However, nurses' demographic profiles were not significantly related to their perceptions of environmental and resource-related factors. Nurses agreed that accessible supplies, functional equipment, and an organized work environment support efficient triage. Areas for improvement included specialized triage training and better integration of patient symptoms with clinical assessment.

The study highlights the need for structured and continuous professional development programs, including simulation-based training, mentorship, clinical reasoning enhancement, and standardized triage education. Strengthening both individual competencies and institutional support systems may improve triage accuracy, patient prioritization, and overall emergency care outcomes in private hospitals.

Keywords: Assessing Triage Decision-making and Contributing Factors to Emergency Room Efficiency: Basis for Training Program for ER Nurses in Private Hospitals in Puerto Princesa City

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Chapter I
INTRODUCTION

This chapter presents the foundational elements of the study, including the Background of the Study, which establishes the research context and relevance. The Statement of the Problem precisely defines the research gaps and challenges addressed, while the Significance of the Study outlines the potential academic and practical contributions. The Scope and Limitations set the boundaries of the inquiry, ensuring focused analysis, and the Definition of Terms provides clarity on key concepts for precise understanding.

Background of the Study

Emergency Departments (EDs) play a central role in the healthcare system, serving as the initial point of contact for patients requiring immediate medical attention. Whether dealing with trauma, acute cardiovascular events, respiratory failure, or other life-threatening conditions, EDs are tasked with delivering timely and accurate care under pressure. Their performance is a major determinant of overall hospital efficiency and, more importantly, patient survival and recovery. Within this high-stakes environment, the process of patient assessment upon arrival is critical in setting the direction and urgency of care delivery. This initial assessment serves not only as a clinical decision point but also as a pivotal step in managing patient flow and allocating limited resources.

In theory, emergency care is designed to function as a dynamic and responsive system, where well-trained professionals apply standardized procedures to ensure rapid and accurate assessments. In practice, the

strength of this system often relies on the competence and clinical judgment of emergency nurses, particularly in provincial and resource-limited settings. Despite challenges such as high patient volumes, staffing limitations, and infrastructure constraints, many emergency nurses demonstrate remarkable adaptability, critical thinking, and decision-making skills. Their ability to assess complex situations quickly, prioritize care effectively, and respond under pressure is essential in maintaining patient flow and ensuring timely treatment (Sutriningsih et al., 2020). With the right training and strong institutional support, these frontline professionals are well-positioned to enhance response times, streamline care delivery, and contribute significantly to safer, more effective patient outcomes, even in the most challenging environments.

These challenges are especially pronounced within the Philippine healthcare system, where both public and private hospitals face persistent operational inefficiencies. In provincial regions like Palawan, hospitals often operate with limited medical resources, insufficient numbers of skilled healthcare personnel, and facilities that are not optimally designed to manage high patient volumes. For instance, the Southern Philippines Medical Center has been reported to operate at more than twice its emergency room capacity, contributing to elevated risks of patient deterioration and compromised care (Valdez, 2010; Silva et al., 2020). While such figures highlight systemic issues on a national scale, there remains a notable lack of research focused on how these difficulties specifically affect smaller, private hospitals in provincial cities.

Beyond individual skills, the overall environment and resources available within hospitals play a crucial role in shaping the effectiveness of emergency services. While many facilities currently face challenges such as limited dedicated spaces for patient assessment, inadequate signage, insufficient documentation tools, and gaps in coordination between departments, these areas also represent valuable opportunities for improvement. Addressing these physical and organizational barriers can empower even the most skilled nurses to perform at their best, enhancing accuracy in patient evaluations and speeding up critical interventions. By identifying and overcoming these challenges, emergency departments can strengthen patient safety, improve care quality, and rebuild public confidence in emergency healthcare.

Tackling these multifaceted challenges requires a deeper understanding of how both personal and institutional factors influence emergency care performance. While numerous international and national studies have explored emergency department operations, most have focused on large urban hospitals or government institutions. In contrast, private hospitals in geographically isolated areas—such as those in Puerto Princesa City—remain underrepresented in academic research. Yet, these institutions often serve as the primary point of care for local communities and face unique constraints that deserve focused attention.

Drawing from the researcher's own experience working in an emergency department, she has observed how the knowledge and decision-making abilities of emergency nurses play a crucial role in determining the quality and timeliness of care. In high-pressure environments where every second counts, the ability to make sound clinical decisions can significantly improve patient outcomes. Nurses who are well-trained and confident in their clinical judgment contribute to faster assessments, more accurate prioritization of patients, and more efficient care delivery. On the other hand, when there are gaps in knowledge, lack of familiarity with protocols, or inconsistent decision-making practices, patients may experience slower initiation of appropriate treatment, which can impact health outcomes. These experiences have reinforced the researcher's belief in the need to enhance the competencies of emergency nurses, not just through formal education, but also through continuous professional development.

In light of these gaps, the present study seeks to evaluate the clinical decision-making abilities of nurses in two private hospitals in Puerto Princesa City, Palawan: Adventist Hospital Palawan and Cooperative Hospital. These hospitals were chosen not only for their accessibility but also for their relevance as key healthcare providers in a provincial context. They offer a valuable opportunity to examine how frontline nurses apply their expertise and judgment under resource-limited conditions, and what personal, organizational, or structural factors support or challenge their ability to deliver effective emergency care. The main objective of this research is to assess the knowledge and decision-making abilities of emergency nurses in these institutions. The study aims to identify both strengths and areas for improvement in their clinical judgment and professional competencies. By generating localized, evidence-based insights, this research intends to provide practical recommendations for targeted training programs designed to enhance nurses' skills and support their critical role in emergency care. Ultimately, the goal is to inform capacity-building initiatives that foster more confident decision-making, optimize workflow, and contribute to improved patient outcomes in similar healthcare settings.

Statement of the Problem

This study aims to assess the triage knowledge and decision-making ability of Emergency Room (ER) triage nurses in two private hospitals in Puerto Princesa City. The data presented in this study are based on the participants' self-reported perceptions and experiences concerning their triage knowledge, decision-making abilities, and perceived factors affecting emergency room triage efficiency.

The following research questions guide this study:

1. What is the socio-demographic profile of the participants in terms of:

a. Age,

b. Training, and

c. Years of experience?

2. What is the level of knowledge and triage decision-making ability of ER triage nurses in the two private hospitals in Puerto Princesa City in terms of:

a. Cognitive characteristic,
b. Critical thinking,
c. Experience, and
d. Intuition?

3. Is there a significant relationship between the respondents' profiles and the level of knowledge and triage decision-making ability of ER triage nurses in the two private hospitals in Puerto Princesa City?
4. Which factors do ER triage nurses perceive as the main contributors to the efficiency of Emergency Room triaging?

a. Hospital environment
b. Resources

5. Is there a significant relationship between the respondents' demographic profile and their perceived contributing factors to the efficiency of Emergency Room triaging?
6. Based on the results of the study, what intervention or training programs can be implemented to improve the triage efficiency in the two private hospitals in Puerto Princesa City?

Significance of the Study

This study aims to examine how nurses' knowledge and clinical decision-making influence the efficiency of emergency room operations in private hospitals in Puerto Princesa City. It investigates key contributing factors, including the level of professional competence, decision-making during triage, staffing adequacy, hospital environment, and the frequency of relevant training. The objective is to identify critical areas impacting nurse performance and to utilize these insights as the foundation for a targeted training program specifically designed for triage nurses. By addressing these factors, the study seeks to improve emergency room efficiency and promote high-quality patient care within the context of provincial private healthcare settings.

Healthcare Providers and Medical Staff. Triage nurses and emergency medical technicians (EMTs) play a vital role in the initial assessment and prioritization of patients in the emergency room. This study will provide valuable insights into how their level of knowledge, clinical decision-making skills, and frequency of training affect the overall efficiency of ER operations. By identifying specific challenges that impact triage performance, the findings will support the development of targeted training programs designed to enhance nurses' ability to make timely and accurate clinical decisions under pressure. Additionally, the study examined systemic factors such as the hospital environment and resource adequacy, enabling ER nurses to advocate for structural improvements that promote more effective care delivery, especially during high-demand periods. These insights aim to elevate the standard of emergency care in private hospitals across Puerto Princesa City.

Hospital Administrators and Policymakers. This study offers hospital administrators and health policymakers valuable insights into the primary factors influencing triage-related knowledge, decision-making capabilities, and the overall efficiency of emergency room operations in private hospitals.

The evidence supports informed decisions on staffing strategies, infrastructure investments, and protocol updates. It also offers practical recommendations for institutional reforms that align with resource-constrained settings. Policymakers can use the findings to craft responsive policies that address disparities in emergency care, especially in underserved provincial areas like Puerto Princesa City.

Nursing Students and Nursing Education. The results of this study have direct implications for nursing education and training programs. By highlighting which competencies are most associated with triage efficiency, the research will help educators refine curricula and reinforce the importance of clinical reasoning, rapid assessment, and decision-making. Nursing students will gain insight into the realities of ER practice, preparing them to perform confidently and competently in high-pressure environments. The study also underscores the need for integrating simulation-based triage training and continuous education into nursing development pathways.

Patients and the Local Community. Patients and their families are the ultimate beneficiaries of efficient triage systems. By examining the factors that influence triage decision-making and emergency room performance—such as nurse knowledge, clinical judgment, and training—this study aims to support improvements in response time, prioritization accuracy, and overall quality of emergency care. Enhanced triage efficiency contributes to better patient outcomes, reduced risk of complications, and higher levels of satisfaction. For the local community, particularly in provincial areas like Puerto Princesa City, the research reinforces public trust in private healthcare institutions and underscores the vital role of timely and effective emergency services.

Future Researchers. This study establishes a foundation for further investigation into triage decision-making and emergency room efficiency in low-resource, private hospital settings. It offers a localized

framework for examining how factors such as nurse demographics, clinical training, and institutional capacity influence the delivery of emergency care. Future researchers may build on these findings by assessing the impact of targeted triage interventions, comparing practices between public and private hospitals, or exploring the relationship between triage effectiveness and patient outcomes. Additionally, this study encourages broader inquiry into issues of healthcare access and equity within provincial healthcare systems, particularly in settings similar to Puerto Princesa City.

Scope and Delimitations of the Study

This study, titled "Assessing Triage Decision-Making and Contributing Factors to Emergency Room Efficiency: Basis for a Training Program for ER Nurses in Private Hospitals in Puerto Princesa City," focused on evaluating the triage decision-making abilities of emergency room (ER) nurses and identifying factors that influence triage efficiency in selected private hospitals in Puerto Princesa City. Specifically, the study examined four nurse-related attributes: cognitive ability, critical thinking skills, clinical experience, and intuition. It also considered selected external factors, particularly the hospital work environment and availability of resources, as these conditions directly affect how nurses perform triage during real emergency situations. Data were collected from ER nurses assigned to triage at Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC) over a three-month period from August to October 2025.

The study was limited to nurse-centered competencies and immediate workplace conditions influencing triage performance. It did not include other healthcare professionals, hospital administrators, or patients. Additionally, the research did not measure patient outcomes, length of hospital stay, mortality rates, or overall emergency department performance indicators. Comparisons between different triage systems were also excluded. These delimitations were established to maintain a focused examination of ER nurses' preparedness and the operational factors affecting their decision-making, with the goal of generating practical recommendations for training and professional development in similar private hospital emergency settings.

Definition of Terms

This section provides the definitions of key terms used in the study. Each term is defined conceptually and operationally to clarify its meaning and application within the context of this research.

Age. This refers to a period of human life, measured by years from birth, usually marks a certain stage or degree of mental or physical development, and involves legal responsibility and capacity.

Cognitive. This refers to all forms of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imagining, and problem solving.

Critical thinking. It refers to a form of directed, problem-focused thinking in which the individual tests ideas or possible solutions for errors or drawbacks. It is essential for such activities as examining the validity of a hypothesis or interpreting the meaning of research results.

Emergency Department (ED). It refers to an essential facility for providing immediate, often life-saving medical treatment and functions as a primary entry point for walk-in and urgent care within the broader healthcare system.

Emergency Room (ER). This refers to a specialized and fully equipped facility designed to provide immediate medical and surgical care to patients with severe or life-threatening conditions, aiming to stabilize their health status promptly.

Experience. It refers to the process of doing and seeing things and of having things happen to an individual; skill or knowledge that a person gets by doing something.

Hospital Environment. It refers to the physical, organizational, and interpersonal aspects of a healthcare facility that collectively influence the delivery of care and the well-being of patients and staff.

Hospitals. These refer to medical institutions with structured clinical teams, delivering in-patient care supported by diagnostic and therapeutic modalities for acute, chronic, and terminal conditions.

Intuition. This refers to the power or faculty of attaining direct knowledge or cognition without evident rational thought and inference.

Nurse Knowledge and Decision-Making. These refer to the triage nurses' understanding of triage protocols and their ability to assess, prioritize, and make accurate, timely decisions in emergency settings.

Patient Waiting Time. This refers to the duration a patient spends in the emergency room before receiving medical attention from a physician. In this study, it refers to the duration between a patient's arrival at the ER and their initial assessment by a triage nurse, measured in minutes.

Perception. It refers to the triage nurses' understanding, beliefs, and judgments regarding the factors that contribute to prolonged ER triage waiting times.

Resources. These refer to things (such as staff, equipment, time, or money) that are available and can be used to meet needs or achieve goals**.**

Training Programs for Triage Staff. These refer to training programs which are measured by identifying the frequency and type of programs attended—such as Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Triage Protocol Training (e.g., CTAS, START, SALT), Emergency Nursing Core Course (ENCC), Mass Casualty Incident (MCI) Management, and in-house triage seminars, among others. Nurses are also asked to indicate which types of training they perceive as most helpful in reducing patient waiting times.

Triage. This refers to a dynamic and high-pressure process within the emergency care setting, where nurses are tasked with rapidly assessing a patient's condition to determine the urgency of care needed and to anticipate the clinical resources required for appropriate treatment.

Chapter II
REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents a comprehensive review of existing literature that informs the investigation of prolonged patient waiting times in emergency room (ER) triage. It outlines the vital concepts of triage and its role in emergency care, followed by an examination of commonly used triage systems and the operational context of emergency departments and the challenges encountered by the ER triage nurses. The discussion extends to the critical role of nurses in triage, highlighting decision-making and training, as well as the influence of demographic variables such as age, educational background, and ER experience. Institutional dimensions, including hospital environment, resource availability, and staffing levels, are also explored. The reviewed literature is anchored on established theoretical and conceptual frameworks that support the study's analysis. The chapter concludes with a synthesis to identify knowledge gaps and guide the direction of the current research.

Related Literature

In the high-pressure environment of emergency departments (EDs), nurses serve as the first line of clinical decision-makers, with their ability to assess and prioritize patients directly impacting patient outcomes and healthcare efficiency. The process of triage requires not only clinical knowledge but also rapid critical thinking, intuition, and confidence—skills that develop over time and are influenced by a nurse's background and experience. As such, demographic characteristics such as age, educational attainment,

and length of emergency service have been recognized as key factors that shape triage decision-making ability. These variables affect not only how nurses approach clinical problems but also their capacity to synthesize information and make accurate judgments under pressure. Research highlights that while protocols guide triage procedures, the nurse's competence and experience significantly influence the quality and speed of decisions made during the triage phase (Fekonja & Pajnkihar, 2016; Reay et al., 2020; Ghazali et al., 2020; Yuliandari, 2019). Furthermore, the efficiency and accuracy of triage are essential for managing patient flow, minimizing wait times, and ensuring that critical cases are identified and treated promptly. To fully understand the scope of these influences, this section examines three interconnected themes: the role of age, educational background and length of service, and the impact of training on nurses' decision-making capacity in ER triage.

Age is widely recognized as a significant determinant of clinical decision-making in emergency department (ED) settings, especially during triage where time-critical decisions can influence patient outcomes. Research consistently demonstrates a positive correlation between age and the ability of nurses to make accurate, context-sensitive judgments under pressure (Arzani et al., 2016; Khanmoradi et al., 2020; Mohamed et al., 2020). This relationship is not merely a function of age itself but reflects the cognitive maturity and accumulated clinical experience that often accompany it. As nurses grow older, they tend to develop more sophisticated critical thinking skills, enabling them to process information holistically and respond more confidently in complex and high-stakes environments like the ED (Khanmoradi et al., 2020).

This enhanced decision-making capability becomes especially apparent in the triage process, where experienced nurses can rapidly interpret clinical cues and initiate appropriate interventions. Their familiarity with a wide range of clinical scenarios allows them to recognize patterns quickly and act decisively, often without relying solely on standard protocols (Rostamniya et al., 2014). Unlike novice nurses who may depend heavily on checklists, older nurses are more likely to draw on their clinical intuition and contextual understanding—skills refined over years of practice—resulting in more nuanced and adaptive care (Ludin, 2018).

In addition to cognitive and technical skills, age also contributes to the development of emotional intelligence and interpersonal competence. Older nurses often exhibit heightened empathy, patience, and communication skills, which are essential in triage settings where interactions with patients and colleagues must be both efficient and compassionate (Ludin, 2018). Their ability to remain composed and supportive during crises fosters a stable and collaborative triage environment, ultimately enhancing the overall quality of emergency care.

Empirical evidence underscores a consistent association between a nurse's age and triage performance. Studies by Almarzooq (2020) and Reisi et al. (2018) revealed that as nurses age, both their knowledge and accuracy in triage decision-making tend to improve—suggesting that clinical maturity enhances judgment under pressure. This trend is echoed in the findings of Saeed et al. (2017), which showed that nurses over the age of 45 demonstrated the highest levels of triage accuracy. Notably, this outcome appears to parallel levels of professional experience, as nurses with a decade or more of service were more likely to exceed the performance median compared to those with fewer years in practice. However, contrasting evidence from Aghababaeian et al. (2017) suggests this relationship is not universally observed, indicating the potential influence of other factors such as training and institutional support. More recently, Kavaklı et al. (2024) observed a weak but positive correlation between age and the cognitive and intuitive subscales of the Triage Decision-Making Inventory (TDMI). While cognitive flexibility may decline slightly with age,

these findings suggest that experience and clinical exposure help compensate by reinforcing decision-making speed and accuracy in familiar or recurring situations.

Moreover, seasoned nurses often excel in balancing clinical urgency with resource constraints, integrating both evidence-based protocols and intuitive judgments to prioritize care effectively (Hwang & Shin, 2023). This ability is especially vital during periods of overcrowding or limited staffing, where swift and accurate triage decisions can be the difference between stabilization and deterioration. In contrast, younger or less experienced nurses may face greater difficulty in navigating complex prioritization tasks independently, highlighting the importance of mentorship and structured training programs to support their development (Smith et al., 2013).

While age alone does not guarantee triage competence, it often signals a maturation of clinical, cognitive, and emotional capacities that collectively enhance decision-making in emergency settings. Acknowledging and leveraging the strengths of experienced nurses not only optimizes patient care but also creates opportunities for mentorship and knowledge-sharing—essential strategies for cultivating a well-rounded, competent triage workforce.

Ensuring timely and effective patient care in emergency departments begin with the competence of triage nurses—professionals who must quickly assess and prioritize care under intense time constraints. At the core of triage effectiveness lies structured, evidence-based training. The ability to make rapid, sound clinical decisions is not solely innate but is developed through education, practice, and continued learning. Research consistently shows that training improves the cognitive flexibility and clinical judgment required for nurses to manage the complexities of emergency care (Reblora et al., 2020; Considine et al., 2007). Without access to such training, even experienced practitioners may struggle to maintain consistency in patient prioritization and decision-making (Wolf et al., 2018). Continuous training and education have also been identified as essential strategies for overcoming triage-related challenges in the emergency room (Dumrique et al., 2024).

Higher levels of training are associated with more accurate and efficient triage assessments, thereby reducing bottlenecks in patient flow (Harding et al., 2011). However, clinical experience alone does not guarantee optimal performance. As Reinhardt (2017) observed, the quality of triage decisions is closely tied to the depth of prior triage exposure, underscoring the need to complement experiential learning with formal instruction. This reinforces the call for structured training programs that blend theoretical knowledge with practical application. Nurses also recognize the importance of training modules that include clear objectives, instructional strategies, and evaluation mechanisms to ensure meaningful outcomes (Phukubye et al., 2021).

Central to this educational imperative is the well-established link between knowledge acquisition and improved outcomes. Studies such as those by Khatiban et al. (2014) and Ebrahimi et al. (2016) have shown that problem-based learning approaches in triage training significantly enhance nurse performance and reduce patient wait times. These individual improvements scale to broader departmental metrics—such as increased patient satisfaction and reduced overcrowding—when training is systematized and consistently delivered (Rahmati et al., 2013). Follow-up assessments and regular evaluations of triage competency have also been shown to support long-term improvements in triage accuracy and reliability (Wolf et al., 2018).

The methods used to train triage nurses have also evolved. Simulation-based and scenario-driven training offer immersive experiences that mimic real-life emergency conditions. These approaches sharpen nurses' ability to interpret nuanced clinical presentations and act decisively when seconds matter (Schneider,

2019; Sutriningsih et al., 2020; Pouy et al., 2019; Yaman Aktas et al., 2017). Beyond technical skills, Cone et al. (2002) highlighted that structured training bolsters nurses' self-confidence—a psychological asset that supports clear-headed decisions in high-pressure environments. Regular, repetitive training programs, including in-service hospital-based education, have been emphasized as vital to maintaining clinical readiness and upskilling both new and experienced nurses (Phukubye et al., 2021; Wolf et al., 2018).

Triage responsibilities have also expanded to reflect new healthcare demands. Modern triage nurses must be prepared to incorporate public health priorities, digital tools, and interprofessional communication into their practice. Holloway et al. (2018) and Innes et al. (2011) identified gaps in nurses' preparedness for these broader responsibilities. Sanders and Minick (2014) emphasized that adaptive, real-time decision-making now complements theoretical knowledge as a core competency. In response, Yaqin et al. (2022) identified a range of training needs, including evidence-based assessment, outbreak response, and time management—demonstrating the evolving expectations for triage nurses in contemporary healthcare systems. Various instructional platforms such as workshops, emergency drills, web-based courses, and problem-based learning have been suggested to address these expanded needs and improve self-efficacy among triage nurses (Jang et al., 2021; Phukubye et al., 2021). However, the effectiveness of these interventions depends heavily on the quality and delivery method of the training itself. Saeed et al. (2017) found no statistically significant improvement in triage performance following training, which may be attributed to the reliance on paper-based instruction among participants—an approach that appears insufficient in equipping nurses for the complexities of emergency triage. This highlights the need to reassess conventional training formats. In contrast, Rankin et al. (2013) demonstrated that a structured web-based learning program significantly enhanced triage accuracy among emergency nurses, effectively translating theoretical knowledge into clinical practice. These findings collectively support a shift toward more interactive and experiential learning modalities that not only reinforce knowledge retention but also foster real-time application in high-stakes environments.

For training to be effective, it must be sustained through institutional commitment. Bahlibi et al. (2022) noted the importance of timely in-service training to support both new and veteran nurses. Malak et al. (2022) confirmed that repeated, targeted training has a measurable impact on nurse knowledge and performance, highlighting the need for regular curricular updates in line with emergency trends. These findings align with those of Mansour et al. (2015) and Ramati et al. (2013), who reported that comprehensive training programs enhance operational efficiency and improve overall patient safety. To further institutionalize this effort, Rahmati et al. (2013) recommended incorporating both theoretical modules and practical simulations into hospital-based triage programs. Kelly (1990) supported this approach, advocating for triage education as a pillar of emergency nursing preparation due to its impact on precision, confidence, and adaptability.

Equally important is the inclusion of foundational and specialized certifications within training curricula. Courses like Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) are critical for equipping nurses to manage life-threatening situations. BLS enhances CPR proficiency, which is vital during cardiac emergencies (Roh et al., 2014), while ACLS builds advanced competencies in cardiovascular crisis management. Triage-specific protocols—including the Canadian Triage and Acuity Scale (CTAS), Simple Triage and Rapid Treatment (START), and the SALT system—further guide clinical prioritization in both routine and disaster scenarios (Iserson & Moskop, 2007). Mass Casualty Incident (MCI) training prepares nurses for large-scale emergencies where resources may be scarce and rapid decision-making is critical (Subbarao et al., 2008). In-house seminars and hospital-based triage

workshops provide avenues for continued professional growth and integration of updated frameworks like the Emergency Severity Index (ESI) and Manchester Triage System (MTS), which are essential for maintaining accuracy in triage decision-making (Gilboy et al., 2011).

Hence, training in triage nursing must be multifaceted, continuous, and context-responsive. By fostering technical competence, psychological readiness, and system-level adaptability, well-structured educational programs empower nurses to deliver timely, high-quality care—even in the most challenging emergency settings.

Nurses play a critical and independent role in the triage process, relying heavily on clinical judgment, decision-making skills, and critical thinking to assess patient needs swiftly under time-sensitive and information-limited conditions (Saberian et al., 2022; Javadi et al., 2021). Their responsibilities extend far beyond initial assessment; nurses must rapidly categorize patients based on acuity to ensure that those with life-threatening conditions receive immediate care. This decision-making must occur efficiently, despite the pressures of overcrowded emergency departments and limited resources, where each assessment directly influences patient flow and outcomes. Importantly, triage nurses serve as the gateway to emergency services, and their judgments shape the trajectory of patient management from the very first contact.

The scope of triage extends beyond hospital-based emergency departments to include emergency medical services (EMS), where paramedics and EMTs encounter similar challenges. High patient volumes, dynamic environments, and the unpredictability of critical incidents demand rapid assessments to uphold patient safety and system efficiency (Fitzgerald et al., 2010; Christ et al., 2010; Weber et al., 2011). In both settings, the triage process acts as a rapid sorting mechanism—identifying patients who need urgent intervention while balancing finite clinical resources. However, sustained high-demand conditions can compromise triage efficiency, delaying critical interventions and increasing the risk of adverse outcomes. Maintaining consistent triage standards under pressure thus becomes a vital component of patient safety management.

Given these demands, nurses involved in triage require extensive specialized training. Typically, triage nurses undergo formal education in triage protocols, complemented by skills enhancement through programs such as Basic Life Support (BLS) certifications and periodic competency refreshers. This continual professional development ensures that nurses are not only able to recognize classic emergency presentations like cardiac arrest and respiratory failure but are also equipped to respond effectively to subtler signs of clinical deterioration (Isa et al., 2022). Advanced clinical training strengthens their ability to prioritize effectively, initiate immediate care when necessary, and adapt to evolving patient conditions. In this context, Valdez et al. (2019) emphasize the importance of re-examining the competencies of ER nurses, particularly in relation to prolonged patient waiting times. They argue that identifying key areas for improvement—such as decision-making and prioritization—can significantly enhance patient flow and safety, especially when triage demands escalate.

Likewise, Stone (2019) underscores that the triage nurse's decision regarding patient acuity has multiple downstream consequences for care prioritization and placement within the emergency department. These critical judgments directly affect both the speed and appropriateness of interventions. Therefore, formal training in emergency triage is essential—not just to ensure correct classification, but to minimize errors in care delivery. Alarmingly, studies indicate that nearly one in five ED patients may be at risk for missed diagnoses, often stemming from lapses in initial triage assessment (Comia et al., 2023). This concern is amplified in settings with inadequate staffing, where nurses without sufficient training or experience may

be assigned triage responsibilities. Such scenarios increase the likelihood of patient safety errors, particularly when critical thinking skills are lacking (Yang, 2019). Findings from Comia et al. (2023) further suggest that while many triage nurses at a hospital in Lipa City develop competency through clinical experience, they still perceive their decision-making ability as moderate overall. Notably, decision-making competence appears to improve with age, although variables like sex, prior training, and duration of ER experience do not significantly affect perceived decision-making abilities. These insights highlight the complex interplay between experience, confidence, and formal training in shaping triage effectiveness.

Moreover, triage is a dynamic and cyclical process. Following initial assessment, triage nurses must continue to monitor patients in waiting areas, reassessing them periodically to detect any clinical deterioration that necessitates escalation of care. Failure to re-triage appropriately can lead to critically ill patients being overlooked if severity is not prioritized over arrival time. Research emphasizes that systems based solely on first-come, first-served approaches are inadequate in emergency care contexts. Instead, triage strategies must consistently prioritize acuity to safeguard patient outcomes, optimize workflow, and manage the growing demands placed on emergency services (McGhee et al., 2016). The evolving, responsive nature of triage practice underscores the indispensable role of nurses in maintaining patient safety across the continuum of emergency care.

Effective decision-making is the backbone of triage in emergency departments (EDs), where rapid assessments and accurate prioritization can determine patient outcomes. In high-pressure environments, triage nurses must evaluate patients swiftly, often with limited information, and make critical decisions that guide the urgency and direction of care (Schneider, 2019; Alzahrani & Al-Moteri, 2020). These decisions involve not only identifying patients in need of immediate intervention but also allocating resources efficiently while minimizing delays for all patients. Consequently, triage decision-making (TDM) is both a cognitive and clinical skill—requiring deep knowledge of emergency care protocols and sound clinical judgment.

Upon arrival at the ED, patients are typically assessed by triage nurses based on a combination of clinical presentation, medical history, vital signs, symptom duration, and overall physical appearance (Fekonja & Pajnkihar, 2016; Reay et al., 2020). The nurse's ability to synthesize these data points quickly and accurately plays a pivotal role in determining whether care is initiated promptly or delayed. Experienced triage nurses often demonstrate faster and more accurate decision-making compared to their less experienced counterparts, as their skills are honed through years of practice and repeated exposure to varied clinical scenarios (Ghazali et al., 2020; Yuliandari, 2019). These competencies are vital in high-acuity situations, where misjudgment may lead to under triage—delaying care for critically ill patients—or over triage—unnecessarily consuming scarce resources (Moon et al., 2019; Ausserhofer et al., 2021).

Despite the critical nature of these responsibilities, several studies suggest that knowledge gaps in triage protocols are common among nurses. Al-Otmy et al. (2020) reported that more than 25% of patients were incorrectly triaged in a Saudi hospital, indicating either a lack of triage knowledge or failure to detect clinical deterioration. Similar trends have been observed in Tanzania, East Java, and Ethiopia, where nurses exhibited insufficient knowledge in severity classification and time-sensitive assessment (Aloyce et al., 2014; Tilahun, 2016). These findings raise concerns about the preparedness of nurses to handle the complexity of triage decision-making and reinforce the need for continuous education and training.

The ability to make informed and accurate triage decisions is shaped by multiple factors. Clinical experience enables nurses to apply both analytical reasoning and intuitive judgment—skills essential when

dealing with incomplete or evolving patient information (Arzani et al., 2016; Smith & Cone, 2010). With increased exposure, nurses develop pattern recognition and confidence in decision-making, which improves both accuracy and speed. Conversely, novice nurses often require additional guidance and practice to reach similar levels of competence (Smith et al., 2013).

Triage is not merely a clinical act; it is an operational strategy that directly affects the flow, safety, and equity of care in emergency settings. Nurses must be capable of initiating interventions based on urgency, monitoring changes in patient condition, and reprioritizing accordingly. A well-informed triage nurse contributes to streamlined patient throughput and better resource management (Cassarino et al., 2019). Given the high-stakes nature of triage, poor judgment or delayed categorization can compromise patient outcomes, highlighting the essential role of skilled triage nurses in maintaining emergency care quality.

Supporting this need for competency assessment, the Triage Decision-Making Inventory (TDMI) developed by Cone (2000) is a validated tool widely used to measure nurses' decision-making ability in triage. Originally a 37-item instrument, it was later refined to 27 items grouped into three subscales: cognitive abilities (14 items), experience (6 items), and intuition (7 items). The TDMI is suitable for nurses across all clinical settings and has been applied in several studies examining emergency care decision-making (Ghazali et al., 2020; Alzahrani et al., 2022; Yaman Aktas et al., 2017). The tool's strong validity and reliability make it an appropriate measure for capturing the multifaceted decision-making processes required in emergency triage settings.

Triage decision-making, therefore, is not a static skill but one influenced by factors such as self-reported proficiency, age, work experience, training exposure, and clinical context (Soola et al., 2022). Effective TDM not only enables nurses to make accurate assessments but also increases adaptability in unpredictable environments. According to Soola et al. (2022), cognitive ability and intuition are positively associated with age and clinical exposure—suggesting that frequent case exposure helps develop sharper clinical insight. Additionally, proficiency in TDM is essential for ensuring patient safety, reducing delays, and improving clinical outcomes, particularly in time-constrained environments (Hardy & Calleja, 2019; Ghazali et al., 2020). Experts—compared to novices—consistently make faster, more effective decisions in emergencies by relying on both analytical and intuitive reasoning (Yuliandari, 2019; Soola et al., 2022).

Emergency room (ER) triage presents nurses with a multitude of challenges that span systemic, interpersonal, psychological, and operational domains. These include conflicting external systems, emotional burden, time constraints, unclear protocols, and threats to personal safety (Dumrique et al., 2024). In highly dynamic environments like emergency rooms, triage nurses must constantly navigate institutional pressures, limited resources, and diverse patient needs. In the Philippine context, for example, Southern Philippines Medical Center (SPMC) operates far beyond its capacity, with ER occupancy reaching over 190% and admitted patients boarding due to a lack of inpatient beds (Valdez, 2024). These conditions create an environment of high stress, limited space, and insufficient staffing—pressures that compound the already complex nature of triage work. If unaddressed, such challenges can compromise patient care quality and nurse well-being. Understanding the complexity of these issues is essential in developing effective interventions that support nurses and improve emergency care delivery (Reay et al., 2020).

The following subsections outline the major challenges that ER triage nurses encounter in the course of their work, emphasizing how these factors affect clinical decision-making, personal well-being, teamwork, and the overall quality of patient care.

Related Studies

One major barrier nurses face stem from the interplay of conflicting systems within emergency care. Triage nurses often find themselves at odds with hospital mandates and external pressures, such as ambulance services pushing for quick patient offloading. This results in dilemmas about prioritizing critical patients versus maintaining patient flow. Nurses have reported frustrations about being compelled to accommodate patients labeled urgent by EMS without consistent clinical justification, impacting the quality of their triage decisions (Reay et al., 2020). Additionally, hospital-imposed administrative tasks and flow-centered strategies divert nurses' attention from patient-centered assessment, increasing tensions and undermining optimal triage (Johnson et al., 2021).

Nurses' personal experiences and mental states also influence triage performance. Repeated exposure to violence or emotionally charged interactions leads to psychological exhaustion, feelings of resignation, and diminished motivation. Incidents of aggression from patients or their relatives, particularly during high-stress shifts, deeply affect triage execution and emotional resilience (Ferri et al., 2020). Some nurses report anxiety and second-guessing when faced with rapid triage demands, particularly in the absence of clarity around patient symptoms (Dreher-Hummel et al., 2021). These emotional burdens contribute to the general perception that triage is among the least desirable roles in emergency nursing (Innes et al., 2019).

Work-related demands further compound the stress nurses endure. Heavy patient inflows during peak hours or public health events increase the urgency to deliver fast, accurate triage decisions. The pressure to maintain pace often prevents nurses from conducting in-depth assessments, especially for patients with complex conditions like the elderly or those with communication barriers. Overwork and lack of personnel amplify the risk of burnout, which in turn hinders cognitive clarity and effective prioritization (Bijani & Khaleghi, 2019). These constraints frequently result in medical errors or delays that can significantly affect patient outcomes.

Triage accuracy is another significant concern. Variations in patient communication, hidden symptoms, or non-disclosure of relevant health details hinder appropriate assessment. The presence of inconsistent triage guideline implementation across hospital personnel leads to conflicting patient categorizations, contributing to misclassification and delayed care (Sherafat et al., 2019). During times of increased demand or emergent crises such as pandemics, the reliance on screening tools and intuitive judgment increases, but these methods lack precision when not supplemented with complete clinical data (Wolf et al., 2018).

Gaps in training and education present ongoing issues. Many triage programs are geared toward novice practitioners, leaving experienced nurses without advanced instruction to navigate complex or ambiguous cases. In the absence of formal training, nurses resort to peer guidance or habit-based practices that may not align with updated standards (Moon et al., 2021). Junior nurses also tend to err on the side of caution by over-triaging, which can strain resources and misrepresent acuity levels (Mistry et al., 2018). Moreover, there is often a lack of consistent refresher training, particularly on emerging protocols or newly adopted triage tools, which limits nurses' ability to adapt to evolving clinical demands. Bridging these training gaps is essential to ensure both accuracy and confidence in triage decision-making.

Environmental conditions within triage areas often impair judgment and workflow. The pressure of long patient queues causes nurses to expedite assessments, occasionally relying on superficial cues rather than thorough evaluation (Reay et al., 2020). Overcrowding, limited physical space, and security lapses reduce operational efficiency and raise safety concerns for both patients and staff. Seasonal surges, such as flu outbreaks or holiday-related spikes, further challenge the ED's capacity, often requiring nurses to rely on

their own discretion due to the lack of supportive tools (Bijani et al., 2019). Nursing services are also strained by the ever-expanding roles and responsibilities expected of nurses in emergency care. These role evolutions are made more difficult by the organizational culture, high turnover, and structural challenges such as understaffing, exposure to occupational hazards, and limited access to supplies and equipment (Rivaz et al., 2017; Paguio et al., 2020). These overlapping constraints raise critical questions about whether clinicians can realistically fulfill all duties expected of them under such demanding conditions (Uda & Bagolong, 2023). Without strategic institutional support, even highly trained nurses may find it difficult to meet the expectations embedded in their professional and legal mandates.

Staffing remains one of the most pressing concerns. Inadequate nurse-to-patient ratios, prolonged shifts, and insufficient skill mix result in cognitive fatigue and decreased vigilance. Nurses have shared that they often work through breaks or multiple shifts, limiting their ability to recover and maintain alertness. These burdens are exacerbated when inexperienced staff are left to manage high patient loads alone, compromising both their confidence and the safety of the patients they serve (Innes et al., 2019; Moon et al., 2021). The compounding effect of chronic understaffing not only leads to burnout but also decreases retention rates among ER nurses, creating a cycle that weakens the emergency care workforce over time.

Violence and safety threats further complicate triage work. Nurses frequently report exposure to aggression from patients or relatives, particularly during night shifts or after long wait times. These hostile interactions not only cause psychological trauma but also impede nurses' ability to remain calm and accurate in their assessments. Female nurses report higher instances of such violence, with verbal abuse being the most common form (Ferri et al., 2020). Many families expect immediate treatment and may interpret medical prioritization as neglect, especially when newer arrivals are treated first. This misalignment between expectations and clinical reality fuels tension and can disrupt the workflow.

Teamwork challenges are also prevalent. A lack of collaboration between triage nurses and physicians or paramedics undermines effective triage. Disagreements over patient urgency and poor communication can lead to resentment and decision fatigue. Power dynamics and hierarchical barriers within emergency care teams further complicate shared responsibilities and trust (Reay et al., 2020). Inconsistent expectations regarding scope of practice often lead to blurred roles, which in turn create inefficiencies and hesitation during time-sensitive situations. Effective teamwork requires clarity, mutual respect, and ongoing interdisciplinary training.

Communication difficulties during triage are often underestimated. Language barriers, cultural misunderstandings, and limited interpreter access pose major obstacles to accurate information gathering. Patients may also withhold details due to embarrassment, fear, or confusion, impeding correct assessment (Mistry et al., 2018). These gaps are particularly pronounced in diverse patient populations, where cultural norms or health beliefs may influence symptom reporting or trust in providers. Addressing these challenges through culturally competent care and accessible translation support can significantly improve triage accuracy.

Organizational deficiencies such as vague triage policies, lack of standardized protocols, and poor management practices contribute to systemic inconsistencies. Nurses report that institutional expectations are not always aligned with frontline realities, and there is often minimal oversight in ensuring consistent guideline application. In some cases, triage decisions are more reflective of administrative pressures than clinical judgment (Jang et al., 2021). Altogether, these interlocking challenges reveal the multifaceted pressures faced by triage nurses in emergency settings. Addressing them requires systemic reforms that prioritize adequate staffing, tailored training, supportive infrastructure, and collaborative care practices.

Doing so not only supports nurses' well-being but also strengthens the safety and responsiveness of emergency care systems.

The efficiency of emergency department (ED) triage is shaped not only by the clinical competencies of healthcare professionals but also by the broader hospital environment in which care takes place. While triage is inherently a clinical function requiring sound judgment and rapid assessment, its success depends greatly on the systems and structures that support it. Factors such as physical infrastructure, workflow design, staffing allocation, and the availability of essential resources all work together to influence how swiftly and accurately patients are prioritized for care.

Numerous studies emphasize the importance of optimizing the early stages of emergency care—particularly triage and diagnostic services—as these significantly impact overall patient flow and wait times (Yang et al., 2016). However, research also shows that simply increasing physical resources does not necessarily translate to better outcomes. In many cases, delays and inefficiencies are the result of systemic barriers such as fragmented workflows, outdated administrative processes, and poor interdepartmental coordination.

To better understand how these factors contribute to ED performance, Asplin et al. (2003) proposed a conceptual model that divides emergency department operations into three interrelated phases: input (patient arrival), throughput (internal clinical processes), and output (patient disposition). Among these, the throughput phase—which includes triage—is particularly vulnerable to inefficiencies. Delays during this stage are frequently linked to misaligned staffing, bottlenecks in laboratory and imaging services, or poorly coordinated workflows. These challenges can undermine triage effectiveness, even in facilities with adequate resources and staffing. In response to these issues, healthcare systems have adopted a variety of innovations aimed at improving operational efficiency and clinical responsiveness. Technologies such as computerized physician order entry systems (Innes et al., 2003), RFID-based patient tracking (Chen et al., 2008), and the establishment of short-stay units (Shim & Kumar, 2010) have demonstrated measurable success in enhancing the coordination and pace of emergency care delivery.

Adding to this body of evidence, researchers from De La Salle University in the Philippines developed a triage application compatible with both desktop and mobile platforms (Luta et al., 2018). The system featured a user-friendly graphical interface and was designed to assist nurses in performing timely, structured triage assessments. During pilot testing, registered nurses responded to simulated patient scenarios using the application and reported that it was intuitive, convenient, and significantly faster than manual triage methods. The platform also contributed to a more continuous and organized workflow, demonstrating how thoughtfully designed digital tools can directly support clinical decision-making.

Beyond technology, several process innovations have also been implemented to improve triage flow and reduce patient congestion. Strategies such as immediate bedding (Wiler et al., 2010), bedside registration (Chan et al., 2005), fast-track lanes for non-urgent cases (Hampers et al., 1999), and nurse-led triage protocols (Cooper et al., 2008) aim to accelerate the initial assessment process. The deployment of physicians at triage points has similarly been linked to faster and more accurate patient prioritization (Holroyd et al., 2007).

Physical design and spatial layout also play a crucial role in the efficiency of triage. A logically structured ED—where triage stations, registration counters, and treatment areas are strategically located—can minimize unnecessary movement and improve care transitions. Shisundi (2023) emphasized that clear signage and intentional spatial planning not only improve operational flow but also enhance patient orientation and comfort, particularly in stressful emergency settings.

Importantly, system inefficiencies can persist even in high-resource healthcare environments. For example, Karstensen et al. (2019) reported that Norwegian hospitals, despite having well-developed infrastructure and referral systems, still experienced prolonged wait times due to workflow disruptions and coordination gaps. This reinforces the notion that improving triage performance requires not just more resources, but better integration and refinement of the systems in place.

In summary, the hospital environment—encompassing both physical infrastructure and internal operations—plays a decisive role in the success of emergency triage. When supported by intentional design, efficient processes, and adaptive technologies, triage systems become more responsive, accurate, and capable of delivering patient-centered care under pressure.

Appropriate nurse staffing in emergency room triage is widely recognized as a foundation of safe, efficient, and high-quality emergency care. However, determining optimal staffing remains a persistent and complex challenge due to the unpredictable and time-sensitive nature of emergency department operations (Saaiman et al., 2021; Tabuñar et al., 2023). The capacity to match nursing resources with fluctuating patient demand is vital, yet many facilities continue to face a misalignment between staff availability and patient load. This mismatch not only burdens healthcare workers but also disrupts patient flow and the timely delivery of interventions. Consequently, staffing must be approached as both an operational and clinical priority in emergency healthcare systems.

Multiple studies have shown that under-resourced triage units lead to systemic delays and reduced quality of service. Wolf et al. (2018) and Källberg et al. (2017) reported that an imbalance between patient volumes and available triage staff significantly contributes to prolonged wait times and diminished healthcare outcomes. Bijani and Khaleghi (2019) further emphasized that such disparities compromise care responsiveness and patient safety—particularly concerning in time-critical environments where every minute can influence clinical prognosis. Thus, ensuring staffing sufficiency is essential for effective emergency service delivery. Staffing inadequacies have also been linked to broader patient behavior and trust. As Sprivilus et al. (2006) and Berg et al. (2019) noted, prolonged waiting times caused by limited personnel can erode public confidence in emergency care services. This diminished trust may discourage individuals from seeking timely care during future emergencies, increasing their risk of complications, morbidity, and mortality. Therefore, staffing is not only a determinant of immediate clinical outcomes but also a driver of long-term health-seeking behaviors.

Strategic and evidence-informed staffing planning is critical. Saaiman et al. (2021) highlighted that inadequate staffing contributes to overcrowding, nurse burnout, and elevated operational costs. The American Nurses Association (Wolf et al., 2017) emphasizes the importance of appropriate nurse-to-patient ratios as a key metric for determining staffing adequacy across care settings. Staffing decisions must consider not only the number of patients but also the intensity and complexity of care required. Without addressing both quantitative and qualitative factors, staffing policies risk being reactive rather than preventative. To guide effective workforce planning, various staffing models have been developed. For instance, Rising et al. (2015) noted that some institutions rely on historical data to forecast staffing needs, while others adopt real-time, flexible adjustments. The BEST model, developed by Shen and Wang (2015), calculates staffing requirements based on patient dependency rather than acuity alone. Similarly, the NICE guidelines provide a structured framework for estimating nursing hours, skill mixes, and task distributions (Whetzel et al., 2013). These models help managers anticipate demand, reduce inefficiencies, and maintain optimal care levels.

Contextual factors such as seasonality, hospital capacity, and staff availability must also be considered.

Morphet et al. (2016) stressed the importance of aligning staffing strategies with institutional resources and staff competencies. In the Philippines, for instance, ER visits often surge during the rainy season. Jimenez et al. (2018), supported by national climate data (DOST, 2020), observed increased patient loads from August through November, underscoring the need for predictive, responsive staffing systems that prevent service breakdowns during peak periods.

A critical consequence of nurse staffing shortages is the tendency to delegate triage responsibilities to personnel who may not possess the specialized knowledge, training, or experience required for effective triage decision-making. Yang (2019) emphasized that patient safety incidents have been directly linked to deficits in nurses' critical thinking abilities—an essential skill in high-stakes emergency environments. Inadequate preparation among triage nurses not only compromises the accuracy of patient assessments but also heightens the risk of misclassification and treatment delays. Delegating triage to inexperienced staff due to shortages may increase liability and decrease public confidence in emergency care systems. It highlights the importance of ensuring that triage assignments are matched with staff expertise.

The broader healthcare context in the Philippines presents unique challenges that exacerbate staffing issues in emergency settings. The country continues to grapple with persistent human resource problems, including an overall shortage of healthcare personnel, uneven distribution across regions, and a concentration of professionals in urban centers, leaving rural communities critically understaffed (Human Resources for Health in 2030 Philippines, 2019). Many healthcare workers are employed on short-term or contractual bases—either through government initiatives or development partners—leading to high turnover rates, weak workforce retention, and care delivery focused narrowly on select disease programs (Human Resources for Health in 2030 Philippines, 2019).

Further complicating the situation is the fragile state of the national health system. Seposo (2019) described the Philippines' healthcare infrastructure as constrained by limited resources, unequal access to services, and vulnerability to recurring natural disasters. These factors demand that staffing strategies not only accommodate day-to-day service needs but also integrate contingency planning for emergencies such as typhoons, floods, or pandemics. Effective staffing, therefore, must incorporate flexibility and resilience in deployment protocols. To establish a baseline for care standards, the Department of Health (DOH), in partnership with the Department of Budget and Management (DBM), has outlined formal staffing guidelines. According to the Revised Organizational Structure and Staffing Standards for Level III General Government Hospitals, the recommended nurse-to-patient ratio is one staff nurse per 12 beds, one head nurse per 15 staff nurses, and one supervising nurse per 50 staff nurses (DBM, 2013). Additionally, the DOH's National Objectives for Health 2017–2022 prescribes a broader national target of one nurse per 10,000 population to enhance access to care services across both urban and rural communities (DOH, 2017). These targets also apply to primary care facilities, for which the DOH has set minimum staffing requirements to support operational consistency (Aytona et al., 2022).

Staffing quality must also include thoughtful shift design. Reay et al. (2020) found that shift duration, frequency, and consecutive assignments significantly impact nurses' cognitive functioning and patient interactions. Prolonged or poorly structured shifts can reduce clinical performance and foster patient dissatisfaction. In response, McMahon et al. (2017) recommend limiting triage shifts to four hours, while Wolf et al. (2018) suggest even shorter rotations of two hours to maintain judgment and focus under pressure. These recommendations align with the broader principle that staff well-being is directly tied to patient safety and operational success.

The consequences of under-resourced triage units are not confined to patient outcomes alone. Fernandez-

Parsons et al. (2013) linked sufficient staffing with reduced mortality rates, shorter hospital stays, fewer complications, and greater patient satisfaction. Additionally, they noted that well-staffed environments enhance teamwork, autonomy, and job fulfillment among nurses. On the contrary, Whetzel et al. (2013) observed that insufficient staffing correlates with legal risks, overcrowding, and diminished quality of care. Nurse satisfaction and institutional effectiveness are interdependent, and investments in staffing reap benefits for both.

These findings collectively suggest that triage staffing is a multifaceted issue requiring more than just headcount adjustments. By leveraging predictive models, accommodating seasonal and contextual realities, and ensuring continuous professional development, emergency departments can build staffing systems that are not only efficient but resilient. A robust staffing framework must address clinical expertise, workload sustainability, and patient-centered care. The capacity to adapt to both daily variability and systemic pressures is critical in sustaining high-quality emergency care. Institutions that prioritize this adaptability position themselves to deliver more consistent, equitable, and lifesaving services.

Triage plays a vital role in emergency medical care by ensuring that patients are prioritized according to the severity of their condition and the availability of resources (Chauhan et al., 2025). It enables emergency department staff to make rapid, informed decisions that ensure those in critical condition are attended to first (Comia et al., 2023). This approach is particularly crucial in high-pressure environments where patient demand frequently exceeds available capacity. The term “triage” originates from the French word “trier”, meaning “to sort,” and was first formalized in military medicine by Baron Dominique Jean Larrey, a surgeon under Napoleon Bonaparte, who developed a method for classifying the wounded based on clinical urgency rather than rank (Dong & Bullard, 2009; Yancey et al., 2023; Robertson-Steel, 2006; Crumplin, 2002; Iserson et al., 2007). Over time, this practice has become an essential part of civilian emergency care, allowing healthcare providers to respond effectively and equitably in managing diverse medical emergencies.

In current clinical practice, triage is a structured, time-sensitive process that occurs across three phases: in the prehospital setting, upon arrival at the ED, and throughout the patient’s progression within the hospital system (Fitzgerald et al., 2010; Christ et al., 2010). It serves not only as a diagnostic filter but also as a crucial operational mechanism for managing patient flow and resource allocation. While its core objective is to expedite care for those most in need, triage systems can inadvertently become sources of delay, especially in overcrowded or resource-limited environments (Weber et al., 2011). Within EDs, triage areas are often strained by unpredictable caseloads and logistical interruptions, which can hinder timely assessments and compromise care delivery (Fekonja et al., 2023). Metrics such as “door-to-triage time”—the interval from a patient’s arrival to their initial assessment—have emerged as key indicators of system efficiency. Shortening this interval has been associated with quicker identification of critical conditions and improved overall patient throughput (Chauhan et al., 2025).

Beyond clinical prioritization, triage plays an essential role in reducing patient waiting times and mitigating the effects of ED overcrowding (Ajani et al., 2012). The process ensures that individuals are assessed promptly, assigned to appropriate care pathways, and treated in accordance with the severity of their condition. Effective triage depends not only on protocols but also on the clinical expertise of emergency nurses, whose specialized training enables them to make rapid, high-stakes decisions under pressure (Fitzgerald et al., 2010). Therefore, triage supports the efficient use of healthcare resources by facilitating early recognition of patients in critical need and ensuring equitable access to care (Lambe et al., 2003; Christ et al., 2010). Although the methods and systems may vary globally—from simple field-

based protocols to advanced hospital algorithms—the shared objective remains: to deliver prioritized, timely, and life-saving care in the most effective manner possible.

Triage systems serve as critical tools in emergency departments (EDs), enabling healthcare providers to prioritize patients according to the urgency of their medical needs. These systems not only streamline patient flow but also ensure that limited resources are allocated efficiently to those in greatest need (Robertson-Steel, 2006; Fitgerald et al., 2010). Among the most widely adopted models globally is the Emergency Severity Index (ESI), a five-level triage algorithm developed in the United States. What sets ESI apart is its dual focus: it categorizes patients by clinical urgency while also anticipating the number of resources required for diagnosis and treatment (Gilboy et al., 2011). The initial step involves determining whether the patient requires immediate life-saving intervention. If not, nurses assess factors such as pain level, mental status, and physiological indicators to estimate resource utilization. This combined approach facilitates swift yet precise decision-making, particularly in high-volume EDs, where delays can critically affect outcomes. Clinical experience plays an important role in ESI application, as nurses must recognize atypical symptom presentations and interpret borderline vital signs when distinguishing between levels—especially Level 2 and Level 3 (Robertson-Steel, 2006).

In situations involving large-scale emergencies or mass casualties, field-based triage systems such as START (Simple Triage and Rapid Transport) and SALT (Sort, Assess, Lifesaving Interventions, Treatment/Transport) are employed. START relies on rapid assessments using criteria like respiratory rate, circulation, and consciousness to sort victims into four color-coded priority groups. SALT expands on this by incorporating ethical considerations regarding the likelihood of survival and the availability of resources, enhancing clinical flexibility in high-pressure disaster contexts (Crumplin, 2002).

Several structured triage systems are also in place within hospital settings across various countries. The Australasian Triage Scale (ATS), developed in Australia, is a five-tiered system that assigns patients to time-sensitive categories based on presenting symptoms, appearance, and physiological status (Australasian College for Emergency Medicine, 2018). Each level corresponds to a maximum wait time before reassessment or physician consultation. Derived from the ATS, the Canadian Triage and Acuity Scale (CTAS) incorporates additional clinical modifiers such as vital signs, pain intensity, and level of consciousness to further refine triage accuracy (Bullard et al., 2016). This enhances the system's responsiveness to changing patient conditions and ensures alignment with real-time acuity assessments. The Manchester Triage System (MTS), primarily used in the United Kingdom and parts of Europe, employs 52 flowcharts tailored to specific presenting complaints (Mackway-Jones et al., 2013). These are accompanied by discriminators—clinical features used to determine the severity of each case—which guide nurses in assigning one of five urgency levels. Waiting time recommendations range from "immediate" (0 minutes) to "non-urgent" (up to 240 minutes). To ensure accuracy and uniformity in decision-making, nurses undergo specialized training on how to apply these structured algorithms effectively (Brouns et al., 2019; Zachariasse et al., 2017). In China, the Four-Level and Three District Triage Standard (CHT) categorizes patients into four acuity levels and directs them to one of three designated treatment zones. Category 1 patients—those in critical condition—are sent to the red zone for immediate care, while Category 2 patients, whose conditions could worsen without timely treatment, are placed in a rescue room. Categories 3 and 4 include less urgent cases, managed in yellow and green zones, respectively. This system combines acuity-based categorization with spatial organization to streamline care delivery within the ED setting.

In the Philippine context, an innovative triage model known as Fast Assessment and Triaging by ER Doc-

tor (FASTER) was implemented at St. Luke's Medical Center to improve patient flow and reduce emergency department congestion. Unlike the traditional nurse-led triage approach, FASTER involves one emergency medicine consultant working with two nurses and a ward clerk to manage the triage area daily from 12:00 noon to 10:00 PM. During its implementation, patients were assessed earlier by a triage doctor rather than waiting for nurse triage. Findings showed that the model significantly improved throughput: phase 1 patients experienced a 16% reduction in average length of stay, from 140 to 117 minutes, while door-to-provider time decreased by 53%—from 15 minutes to 7 minutes. In phase 2, the same metric dropped by 30%. Additionally, more patients in phase 1 were discharged within the recommended 150-minute window compared to the standard nurse triage period (76% vs. 64%), suggesting FASTER's potential in expediting care without compromising quality (Cruz et al., 2020).

Despite differences in design, a common thread among these triage systems is their objective: to prioritize patients accurately and efficiently based on urgency, available resources, and expected clinical interventions (Saeed et al., 2017). Whether in routine emergencies or disaster response, these models form the backbone of emergency medical decision-making, improving care quality, patient safety, and system responsiveness across varied healthcare settings.

Synthesis

The reviewed literature consistently affirms that efficient emergency room (ER) triage is fundamental to timely and equitable emergency care. Both global and local studies highlight that delays in triage are frequently associated with overcrowding, insufficient nurse staffing, outdated infrastructure, and inconsistent training—factors that negatively impact patient flow and disrupt overall emergency department operations. Triage models such as the Emergency Severity Index (ESI), START, SALT, the Canadian Triage and Acuity Scale (CTAS), and the Manchester Triage System (MTS) have been shown to effectively classify acuity levels and guide care prioritization. However, their success is largely dependent on the institution's operational capacity and the clinical competence of the triage personnel implementing them.

A recurring theme in the literature is the centrality of nurses in the triage process. Nurses are tasked not only with rapid clinical assessments but also with the cognitive burden of making real-time decisions under pressure. Their decision-making ability is shaped by a combination of theoretical knowledge, hands-on experience, intuition, and perceived confidence. Tools like the Triage Decision-Making Inventory (TDMI) have provided insight into these competencies, highlighting how factors such as age, length of service, and exposure to structured training influence performance. While experience enhances clinical instincts, the literature underscores that it must be complemented by formal, scenario-based education to maintain consistency in triage outcomes.

Equally significant are institutional and environmental conditions. In resource-limited settings—such as provincial cities like Puerto Princesa—triage nurses often operate without sufficient manpower, functional equipment, or protocol-specific training. Queuing theory-based models reveal how limited staff and fluctuating patient volumes generate bottlenecks, reducing service efficiency. Meanwhile, the Theory of Planned Behavior (TPB) emphasizes the role of intention in nursing practice, suggesting that attitudes, perceived behavioral control, and institutional norms all affect the willingness and ability of nurses to adopt time-sensitive best practices. When viewed through Donabedian's framework, these behavioral and structural elements interact in ways that influence the triage process and shape patient outcomes, particularly in relation to waiting time and care quality.

While existing literature offers valuable insights, significant gaps are still evident. There is a lack of empirical studies that specifically examine how nurse-related demographics—such as age, prior training, and length of ER experience—interact with institutional conditions to impact triage decision-making and the efficiency of emergency room services, especially in private hospitals situated in provincial areas of the Philippines. Additionally, limited research has captured the perspectives of triage nurses regarding which factors they believe most hinder efficiency or which training approaches they find most beneficial to their role.

This research seeks to fill these gaps by exploring the connections among ER nurses' demographic characteristics, their level of triage knowledge and decision-making skills (guided by the TDMI framework), and the institutional and environmental factors they perceive as influential. The study, conducted in two private hospitals in Puerto Princesa City, aims to provide data-driven insights that can guide the creation of a focused training program for ER nurses. Ultimately, the goal is to support improved triage performance and enhance emergency department operations within settings that face resource limitations.

Theoretical Framework

A comprehensive understanding of the factors contributing to prolonged patient waiting times in emergency room (ER) triage requires a multidimensional theoretical foundation. Given the complexity of emergency care delivery—where clinical judgment, structural efficiency, and patient flow intersect—this study draws on three well-established frameworks: : Imogene King's Theory of Goal Attainment, Betty Neuman's Systems Model, and Dorothea Orem's Self-Care Deficit Nursing Theory. These theories collectively enable a holistic investigation by connecting systemic infrastructure, individual nurse behaviors, and logistical dynamics that influence triage efficiency. Through this integration, the study not only explores the operational mechanics of ER staffing and triage decision-making but also accounts for human behavior and institutional structures that shape emergency care outcomes. The synthesis of these models forms the conceptual basis for identifying key barriers and crafting evidence-based recommendations to improve triage performance and reduce ER wait times.

Imogene King's Theory of Goal Attainment (1981) centers on the dynamic interaction between nurses and patients, wherein mutual goal-setting, communication, and role clarification are key to achieving optimal health outcomes. Within the emergency department, especially during triage, the nurse must quickly establish rapport with the patient to assess symptoms, prioritize urgency, and initiate care. King emphasized that effective nursing care depends on clear communication and the establishment of shared objectives. When nurses are well-trained, they can confidently engage with patients and other healthcare providers to ensure that the triage process is streamlined and responsive (King, 1981). Inadequate training, however, can hinder nurses' ability to perform these critical interactions, resulting in miscommunication, inefficiencies, and extended waiting times. King's theory helps illuminate how the absence of continuous professional development negatively affects the nurse's ability to make decisions and set appropriate goals. Moreover, the theory supports the argument that when nurses feel competent and empowered through training, they are more effective in navigating complex and time-sensitive clinical scenarios such as triage. Thus, King's model reinforces the significance of aligning institutional training programs with frontline nurses' communication and clinical decision-making needs.

Based on **Betty Neuman's Systems Model** (Neuman & Fawcett, 2011) provides a systemic view of the individual as a dynamic entity interacting with a constantly changing environment. The model introduces the concept of stressors—classified as intrapersonal, interpersonal, and extrapersonal—that can destabilize

a person's system. In the high-pressure environment of the ER, nurses are frequently exposed to multiple stressors, including emotional exhaustion, patient surges, and administrative constraints. When these stressors are not managed effectively, they can compromise the nurse's decision-making ability and result in delayed triage times. Neuman's theory highlights that interventions such as staff training, stress reduction strategies, and institutional support can act as buffers, preserving the nurse's functional capacity. This theory is particularly valuable in examining how nurses' performance can fluctuate based on their resilience and the support provided by the healthcare system. Inadequate staffing, absence of updated protocols, and a lack of continuous learning opportunities can erode nurses' "lines of defense," making them vulnerable to burnout and decreased efficiency. Neuman's Systems Model thus advocates for organizational strategies that reinforce nurse preparedness and adaptability. In the context of this study, the model provides a rationale for exploring how systemic stressors influence triage delays and why training programs should also focus on stress management and coping mechanisms, not just technical competencies.

Dorothea Orem's Self-Care Deficit Nursing Theory (Orem, 2001) emphasizes that nursing becomes necessary when an individual is unable to meet their own self-care needs. Although originally conceptualized in the context of patient care, this theory can be adapted to understand nurses' professional development and support needs. In ER settings, where nurses are expected to make rapid, life-impacting decisions, a lack of training or institutional guidance can create a form of "professional self-care deficit." This occurs when nurses are not equipped with the tools, knowledge, or emotional support needed to fulfill their roles, especially in high-stress environments like triage.

From Orem's perspective, institutions have a responsibility to recognize and address these deficits through appropriate interventions, such as continuing education, triage simulations, mentorship programs, and workload management. When these self-care deficits are unaddressed, they lead to fatigue, clinical errors, and prolonged patient wait times. Orem's theory aligns with the study's objective of identifying gaps in nursing practice caused by insufficient training. By framing these deficiencies as care needs, the theory reframes nurse education not as an optional support, but as an ethical obligation of healthcare systems to maintain safe, efficient emergency services.

This model is especially applicable to emergency nursing, as nurses are directly involved in all three dimensions. Their expertise, developed through formal education, training, and real-time decision-making, shapes the structure and delivery of triage care. Moreover, their ability to coordinate under pressure, manage prioritization frameworks, and engage in rapid assessment directly influences process quality. Ultimately, the timeliness and appropriateness of their actions affect patient safety, trust, and satisfaction—central components of outcome.

This study also adopts the Donabedian Model of Healthcare Quality as its guiding theoretical framework to examine the factors contributing to prolonged patient waiting times in emergency room (ER) triage. Developed by Avedis Donabedian in 1966, the model has long served as a foundational structure for assessing healthcare quality across diverse clinical settings. Donabedian, a physician and public health researcher, introduced this model to create a systematic way of evaluating medical care delivery—emphasizing that improvements in healthcare quality stem from an integrated understanding of its structure, processes, and outcomes (Moore et al., 2015).

In its most basic form, the Donabedian model is composed of three interconnected elements: structure, process, and outcome. Structure refers to the physical and organizational infrastructure of healthcare—such as staffing, facilities, and equipment. In the context of this study, structure encompasses ER nurse

staffing levels, triage facilities, availability of triage training programs, and access to digital systems. The process represents the actual delivery of care, which in triage involves the initial patient assessments, prioritization procedures, communication strategies, and clinical decision-making by nurses. Lastly, outcome pertains to the results of care, including patient waiting time, satisfaction, and health outcomes.
This model is especially applicable to emergency nursing, as nurses are directly involved in all three dimensions. Their expertise, developed through formal education, training, and real-time decision-making, shapes the structure and delivery of triage care. Moreover, their ability to coordinate under pressure, manage prioritization frameworks, and engage in rapid assessment directly influences process quality. Ultimately, the timeliness and appropriateness of their actions affect patient safety, trust, and satisfaction—central components of outcome.
Together, all these frameworks offer a comprehensive theoretical foundation. Their integration allows for a multidimensional exploration of ER triage delays—acknowledging the interplay of systems, behaviors, and logistics. By combining these perspectives, the study is positioned to offer evidence-based insights that are both human-centered and system-driven.

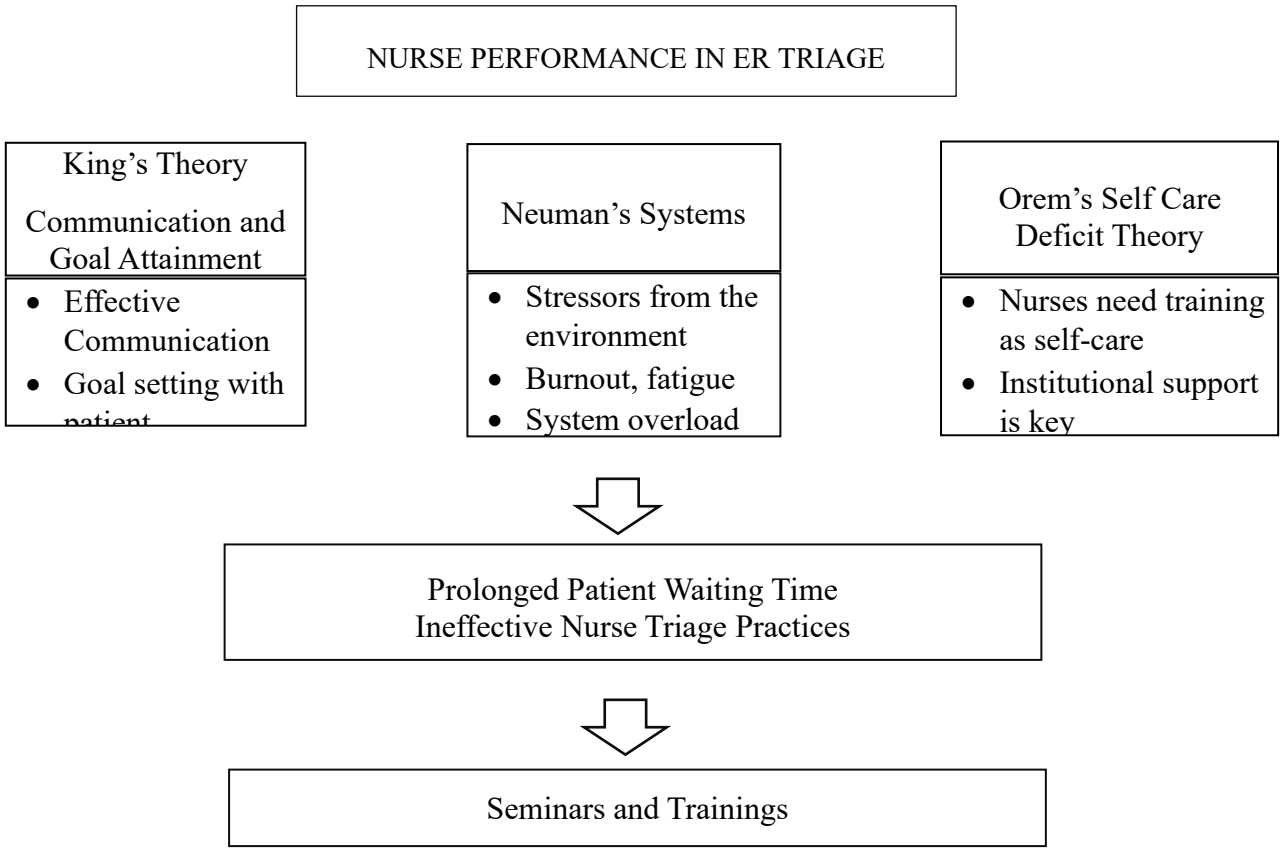

Figure 1 The Theoretical Framework

This diagram illustrates the key factors contributing to prolonged triage waiting times, including nurse-related, patient-related, hospital-related, environmental, and training-related dimensions. The three grand nursing theories—Goal Attainment Theory, Neuman's Systems Model, and Self-Care Deficit Theory—were used to guide the analysis of these factors and their impact on emergency care. King's theory emphasizes effective communication and interaction in achieving timely triage decisions. Neuman's model highlights how stressors from the work environment affect the nurse's performance. Orem's theory focuses on the need for continuous nurse development and training to improve decision-making and triage

outcomes.

Conceptual Framework

In the context of emergency care, the effectiveness and efficiency of triage play a pivotal role in ensuring timely and appropriate treatment. Prolonged waiting times in the triage area can lead to adverse patient outcomes, decreased satisfaction, and increased workload stress for healthcare professionals. This study explores the contributing factors to triage efficiency and identifies the training needs of ER nurses to improve service delivery in selected private hospitals in Puerto Princesa City.

This study is anchored in the integration of three grand nursing theories—King's Theory of Goal Attainment, Neuman's Systems Model, and Orem's Self-Care Deficit Nursing Theory. Together, these frameworks provide a comprehensive lens to understand the individual, environmental, and organizational factors that influence the efficiency of ER triage services.

From King's perspective, communication and goal alignment between the nurse and patient are essential in achieving desired outcomes. Miscommunication or lack of effective interaction during the triage process can cause assessment delays and improper prioritization. Neuman's Systems Model frames the triage nurse as a system affected by internal (e.g., fatigue, emotional stress) and external stressors (e.g., patient load, environmental noise). These stressors can compromise the nurse's ability to perform under pressure, resulting in prolonged triage times. Meanwhile, Orem's Self-Care Deficit Theory emphasizes that when nurses lack sufficient training or institutional support, their capacity to deliver competent care diminishes. This leads to professional self-care deficits that directly impact triage effectiveness.

The conceptual framework posits that organizational factors (e.g., training availability, staffing levels), nurse-related factors (e.g., knowledge, communication skills, stress management), and environmental conditions (e.g., ER congestion, resource availability) contribute to delays in triage. In turn, these factors highlight the need for targeted training interventions to enhance nurse competency and reduce triage inefficiencies.

Therefore, this study seeks to analyze the interplay of these variables by examining existing challenges in the triage process and assessing the perceived and actual training needs of ER nurses. By aligning theoretical insights with empirical data, the research aims to recommend evidence-based training programs that can strengthen nurse preparedness and improve patient flow in emergency settings.

Together, these elements form a dynamic system in which personal competencies and institutional conditions interact to determine triage efficiency.

Research Paradigm

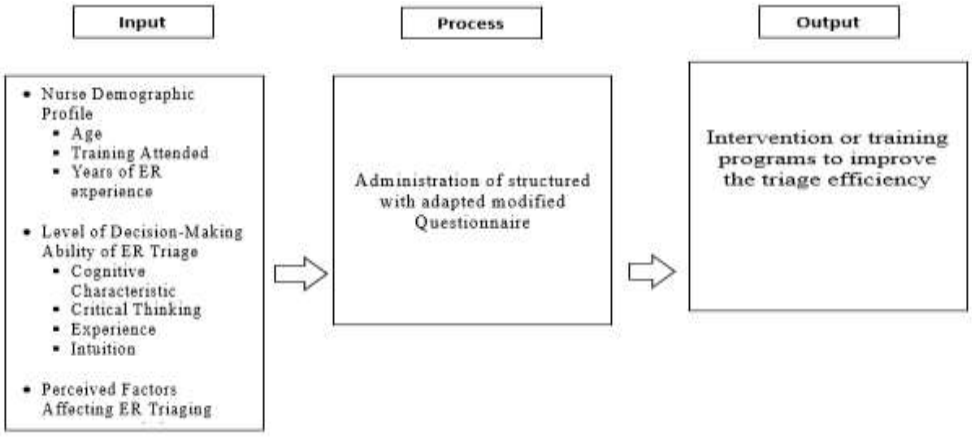

Figure 2: Research Paradigm Based on the Input-Process-Output (IPO) Model

This study is structured using the **Input–Process–Output (IPO) model**, which illustrates the interaction between nurse characteristics, institutional conditions, and emergency room (ER) efficiency. The model serves as a framework for analyzing how both individual-level and system-level factors contribute to triage effectiveness in private hospitals in Puerto Princesa City. The IPO model is further supported by relevant theoretical underpinnings, including Donabedian's Structure–Process–Outcome Model, which emphasizes the relationship between healthcare inputs, actions, and results, as well as Queuing Theory, which provides insight into ER flow, waiting times, and resource allocation.

The Input stage consists of data from the demographic profile of ER nurses, including age, years of experience, and types of training attended (e.g., BLS, ACLS, triage protocol courses). It also includes institutional factors gathered from the questionnaire, such as hospital layout, availability of equipment, staffing, and accessibility of triage-specific training programs. These inputs reflect both personal competencies and environmental supports that influence the triage process and are consistent with Donabedian's structural components and Queuing Theory's consideration of service capacity and resource availability.

The Process encompasses how nurses apply their triage knowledge, decision-making ability, and clinical judgment, as measured by the adapted Triage Decision-Making Inventory (TDMI) included in the second part of the questionnaire. It reflects how nurses organize information, make rapid assessments, and prioritize care during high-pressure situations. Additionally, it considers perceptions of how institutional resources and training influence decision-making under time constraints. The Output is the identification of key training needs and operational gaps, with the goal of proposing a targeted training program to enhance triage skills and improve ER efficiency. This outcome aligns with Donabedian's "outcome" domain and emphasizes both improved nurse competency and better patient flow through the emergency care system.

Chapter III
RESEARCH METHODOLOGY

This chapter outlines the methodological framework guiding this study. It details the Research Design chosen to effectively address the research objectives and the Study Area where data collection was conducted. The Data Collection Strategy and Sampling Approach are specified to ensure the reliability and representativeness of the findings. A Research Flowchart provides a visual overview of the procedural steps, while the Target Respondents and Questionnaire Design sections describe the participant selection and instrument development. Ethical Consideration ensures adherence to research standards, followed by the Procedure outlining the step-by-step data collection process. Finally, Data Cleaning and Statistical Treatment are discussed to highlight the methods used for accurate analysis and interpretation.

Research Design

This study employed a quantitative descriptive correlational research approach in assessing triage decision-making and in identifying factors influencing emergency room (ER) efficiency among nurses in selected private hospitals in Puerto Princesa City. By focusing on Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC), the study aims to generate data-driven insights that can guide the development of a responsive training program for ER nurses. The quantitative approach is suitable for analyzing measurable patterns in nurses' knowledge, decision-making abilities, and workplace conditions.

The descriptive aspect was used to describe and analyze the participants' demographic characteristics, their level of triage knowledge and decision-making abilities, and their perceptions of hospital-related factors that may influence triage efficiency. These components correspond to Statement of the Problem (SOP) numbers 1, 2, and 4.

The correlational aspect of the design examined the relationships between selected independent variables—such as age, years of emergency room experience, training attended, and perceived hospital environment and resource availability—and the outcome variable, triage efficiency. This portion of the study addresses SOP numbers 3 and 5, which seek to determine whether significant relationships exist between the respondents' profiles and their triage knowledge, decision-making abilities, and perceived contributing factors. This research design is suitable for identifying patterns of association among variables without manipulating conditions in the emergency room setting. It allowed the researcher to determine which personal and institutional factors are linked to effective triage practices.

To gather the necessary data, the study utilized a structured questionnaire composed of adapted and modified items from validated tools, including the Triage Decision-Making Inventory (TDMI). The instrument is divided into three parts: (1) demographic profile, (2) triage knowledge and decision-making abilities, and (3) perceived hospital-related factors affecting triage performance. The structured format combines standardized questions with adaptive elements, allowing for both consistent quantitative analysis and flexibility in capturing nurses' specific experiences and training backgrounds.

Study Area/Locale of the Study

This study was conducted in Puerto Princesa City, the capital of Palawan, a province known for its natural beauty and tourism industry. Despite its growth, Puerto Princesa faces challenges in delivering efficient healthcare, particularly in the emergency room (ER) triage process, where prolonged waiting times often arise due to high patient demand and limited resources. The study focused on two private hospitals in the city: Adventist Hospital Palawan (AHP) and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC).

Adventist Hospital Palawan (AHP), commonly referred to as #AHealingPlace, is a prominent healthcare provider and a non-stock, non-profit institution managed by the Seventh-day Adventist Church under the North Philippine Union Conference. Since its establishment in 1988, AHP has been serving the people of Palawan by providing comprehensive medical services, including emergency care. Located at a key intersection in Puerto Princesa, AHP has become a well-known landmark and is recognized for offering excellent medical services. Beyond its medical care, AHP also offers emotional and spiritual support, making it a place of comfort for many locals. It is often considered the preferred choice for healthcare in the province, valued for its compassionate approach and strong community presence (Adventist Health, n.d.; Encyclopedia Adventista, 2021).

Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC), now known as Coop Hospital, is a cooperative hospital owned and managed by its members with the aim of offering affordable healthcare services to both members and the community. This cooperative model allows for greater community involvement, focusing on accessible healthcare through hospitals, clinics, and diagnostic centers. Though smaller than the other two major hospitals in the city—Adventist Hospital Palawan and Ospital ng Palawan—Coop Hospital plays an essential role in the healthcare system of Puerto Princesa. It provides important services, including emergency care, but like other healthcare providers in the region, it faces operational challenges that may affect the triage process, especially during times of high patient demand (PMMGMPC, n.d.).

Target Respondents

The target respondents for this study are eighteen (18) registered nurses currently assigned at the emergency room (ER) triage units of two private hospitals in Puerto Princesa City: ten (10) from Adventist Hospital Palawan and eight (8) from Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC). These nurses were purposively selected based on their direct involvement in the triage process, ensuring that they possess relevant experience and knowledge essential for addressing the study's objectives. Their roles in frontline patient assessment make them well-positioned to provide both quantitative data on operational factors. This focused sample allows for the collection of meaningful and context-specific data within a manageable scope, while still capturing perspectives from two distinct private healthcare institutions.

Statistical Design

Quantitative data collected through the structured, adapted questionnaire was analyzed using a combination of descriptive and inferential statistical methods to address the research objectives. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the demographic characteristics of ER nurses—including their age, years of emergency room experience, and training background. These measures also described their self-assessed triage knowledge, decision-making abilities based on the Triage Decision-Making Inventory (TDMI), and perceptions of hospital environment and resource availability.

For inferential analysis, Pearson's Product-Moment Correlation Coefficient was utilized to determine the relationships between continuous variables, such as age and years of ER experience, and outcome measures like triage knowledge, decision-making ability, and training frequency. This statistical test is appropriate for examining the strength and direction of linear associations between normally distributed interval or ratio variables, providing insights into how individual nurse characteristics may influence triage effectiveness in private hospital settings.

Additionally, to identify which operational and environmental factors are most frequently perceived as contributing to delays or inefficiencies in triage processes, mean ranking was applied to responses related to ER layout, equipment availability, staffing adequacy, and training support. These variables, assessed through Likert-type scales in the questionnaire, helped prioritize key areas for intervention. All statistical procedures were performed using SPSS version 28, with a significance level set at 0.05. Incomplete responses were managed through listwise deletion to maintain data integrity, especially given the focused sample size from the selected private hospitals in Puerto Princesa City.

Sampling Approach

The sampling approach for this study utilized a non-probability purposive sampling method, specifically chosen to ensure that the participants have direct experience in the ER triage process. This method is ideal for targeting specific groups that are most knowledgeable about the research topic, which in this case is the triage process in private hospitals in Puerto Princesa City, Palawan. The purpose of using this sampling approach is to gather data from healthcare providers who are involved in decision-making and operational aspects of ER triage, providing valuable insights into the factors that influence emergency room efficiency. The sample consists of eighteen (18) nurses working in the ER triage process at two private hospitals in Puerto Princesa City: Adventist Hospital Palawan and PMMGMPC. The selected hospitals are representative of the private healthcare sector in Puerto Princesa and provide a cross-section of ER triage operations in a provincial setting. By focusing on these hospitals, the study aims to explore how various

factors—such as nurse knowledge and decision-making, hospital resources, staffing levels, and training programs—affect emergency room efficiency.

This purposive approach is particularly suited for the study's objectives because it ensures that the data is coming from participants who have direct, relevant experience in ER triage, allowing for an in-depth exploration of the key factors affecting emergency room efficiency. While non-probability purposive sampling is efficient for targeting the most relevant participants, it is important to note that the findings may not be fully generalizable to other settings, such as public hospitals or hospitals in urban centers with different patient volumes and resources. However, this approach is ideal for understanding the specific challenges and dynamics in private hospitals within a provincial context.

Questionnaire Design

To effectively address the objectives of this study, the primary research instrument consisted of structured questionnaire incorporating adapted and modified components. This tool was carefully designed to combine standardized items with flexible elements, enabling the collection of both quantitative data and context-specific insights relevant to triage decision-making and emergency room efficiency.

Part I captures the demographic profile of the respondents, including their age, emergency-related training background, and years of clinical experience in the ER. These demographic variables are essential in identifying patterns or correlations between nurse characteristics and their decision-making competence. It also provides a contextual understanding of the workforce currently engaged in triage responsibilities in the selected hospitals.

Part II measures triage knowledge and clinical decision-making ability using an adapted version of the Triage Decision-Making Inventory (TDMI) developed by Cone (2000). For this study, the original tool was modified to include 27 items that reflect four key domains: Cognitive Characteristics, Critical Thinking, Experience, and Intuition. Respondents rate each item using a 4-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This adaptation ensures contextual relevance while retaining the original tool's intent to evaluate how nurses apply clinical reasoning and judgment in high-pressure triage scenarios. The use of the TDMI provides a validated structure for measuring nurses' decision-making capabilities, which are crucial determinants of triage efficiency.

Part III investigates the perceived systemic and environmental factors that influence emergency room (ER) triage performance. It consists of structured items designed to assess key elements such as the physical layout of the ER, availability and functionality of essential triage resources, and the overall institutional environment that supports or hinders efficient triage operations. These factors are considered critical in determining the speed, accuracy, and effectiveness of triage decision-making, ultimately affecting ER efficiency and patient care outcomes.

To ensure content validity, the instrument underwent expert review by professionals in emergency nursing and healthcare research. A pilot test was conducted with a small group of ER nurses who were not part of the main study sample to evaluate the clarity, reliability, and relevance of the items. Revisions were made based on feedback before final deployment. The questionnaire was administered in either paper-based or digital format depending on the logistics and preferences of participating institutions. Data gathered was instrumental in identifying specific training needs and operational barriers, ultimately guiding the development of a structured training program aimed at enhancing triage efficiency in private hospital settings.

Data Collection Strategy

This study used quantitative data from nurses involved in the ER triage process at two private hospitals in Puerto Princesa City, Palawan: Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC). This study employed a structured self-administered survey strategy as the primary method for data collection. A researcher-constructed questionnaire served as the main data collection tool, composed of closed-ended items for quantitative measurement.

The target respondents were the ER triage nurses from two selected private hospitals in Puerto Princesa City. The researcher personally coordinated with hospital administrators to facilitate distribution and collection of the questionnaires. Surveys were administered either in printed form or electronically (e.g., via email or secured digital platform), depending on institutional preference and respondent availability.

Quantitative data was gathered through sections measuring: nurse demographics; 118-item triage knowledge using a CTAS-informed test and Decision-making ability using the validated 27-item Triage Decision-Making Inventory (TDMI) and Perceived Factors Contributing to the Decision-Making Ability of ER Triage (hospital environment and resources).

Data Procedure

Before Data Collection

Prior to initiating data collection, the researcher secured formal approval from the administrations of the two participating private hospitals in Puerto Princesa City: Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC). This step ensured institutional support and access to triage nurses working in the Emergency Department (ED). Ethical clearance was also sought from the University Ethics Review Committee to confirm that the study upholds ethical standards, including the protection of participant confidentiality, voluntary participation, and data security.

The research instrument—a researcher-constructed questionnaire—was finalized based on the study's objectives. It is designed to collect quantitative data and includes four key sections: (1) demographic profile of triage nurses; (2) knowledge and decision-making ability using the Triage Decision-Making Inventory (TDMI) and a triage knowledge test adapted from CTAS (3) Likert-scale items evaluating**:** Perceived Factors Contributing to the Decision-Making Ability of ER Triage (hospital environment and resources).

To establish content validity, the instrument was reviewed by experts in emergency nursing and healthcare research. A pilot test involving ER nurses not included in the main sample was conducted to assess clarity, relevance, and internal consistency. Based on pilot feedback, necessary revisions were be made. Informed consent forms were prepared and distributed, clearly explaining the study's purpose, procedures, risks, and benefits, and the voluntary nature of participation. Participants were informed of their right to withdraw at any point without penalty.

During Data Collection

Upon receiving ethical and administrative approvals, the researcher proceeded with data collection. The finalized questionnaire was administered to 18 triage nurses—ten (10) from Adventist Hospital Palawan and eight (8) from Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC). The survey was then distributed either in print or digital format, depending on hospital protocols and respondent availability. The researcher coordinated with hospital staff to ensure participation during shifts that allowed for undisturbed response time.

All participants were triaging nurses currently assigned in the ER. The researcher was available to clarify any concerns or questions during administration and checked submissions for completeness while

preserving confidentiality. Responses were stored securely, and no personally identifiable information was collected.

After Data Collection

Once data collection concluded, the responses were organized and analyzed in two parts:

Quantitative data was processed using descriptive statistics (frequency, percentage, mean, and standard deviation) to summarize demographic profiles and factor ratings. Inferential statistics such as Pearson's correlation and the chi-square test were used to assess relationships between demographic variables and triage knowledge, decision-making, and training frequency. Mean ranking was used to determine the most perceived contributors to ER triage delays.

All findings were synthesized into a comprehensive report. To maintain institutional and participant anonymity, no hospital-specific or individual identifiers were disclosed in publications or reports. The conclusions helped in offering practical recommendations, particularly regarding training and process improvements, to help reduce waiting times and optimize triage efficiency in private hospital ER settings.

Data Cleaning

Data cleaning is a crucial step in ensuring the accuracy, consistency, and integrity of the data collected for this study. Once the data collection process had been completed, the researcher began the data cleaning process by thoroughly reviewing all the responses collected from the participants. The goal was to identify and correct any errors, inconsistencies, or missing values that may impact the analysis.

The first step in the data cleaning process involved checking for incomplete or missing responses. When any of the questionnaire has missing data, the researcher reviewed whether the missing information could be logically inferred or if the questionnaire should be excluded from the analysis. In cases where a small number of questions were missing, the researcher used imputation methods to fill in the gaps, ensuring the integrity of the dataset while maintaining its accuracy. However, any questionnaire with a significant number of missing responses were discarded to maintain the quality of the data. Next, the researcher verified that all the data entered matches the intended measurement scales. For instance, numeric fields, like age, were checked for logical consistency (e.g., no negative numbers or unreasonable values), while categorical data such as educational attainment and sex were cross-checked for consistency and alignment with the predefined categories. The researcher also ensured that duplicate entries were identified and removed. This may have occurred when participants accidentally filled out more than one questionnaire or if responses were inadvertently recorded more than once. Any duplicate entries were carefully examined to retain only one complete and accurate dataset for each participant. Additionally, the researcher performed a validation check to ensure that all data entries adhered to the specific response formats, such as valid dates or numeric ranges. This is especially important for data points like wait times or staffing levels, which must align with the established criteria for the study. Once the data has been cleaned, the researcher created a final, refined dataset that is anonymized to protect participants' confidentiality. All identifiable information was removed, ensuring that the data can only be traced back to the participant in aggregate form. The cleaned dataset was stored in a secure, password-protected file to maintain privacy and prevent unauthorized access.

Research Flowchart

The research flow for this study is designed to systematically assess Triage Decision-making and Contributing Factors to Emergency Room Efficiency of two private hospitals in Puerto Princesa City—Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC). The process began with identifying the research problem and defining the study's aim and

six specific objectives, which included examining the demographic profiles of ER triage nurses; identifying which operational factors are most perceived as the main contributors to the efficiency of Emergency room triaging; and analyzing the relationship between demographics, knowledge, decision-making, and training frequency. The literature review phase followed, focusing on global and local studies related to ER triage efficiency, nurse competencies, hospital infrastructure, staffing, and continuing education. Insights from the literature would inform the development of a conceptual framework and a researcher-constructed questionnaire that integrated both closed and open-ended questions.

The study adopted a quantitative component using a descriptive correlational approach to analyze the relationship between demographic variables (such as age, sex, educational attainment, and ER experience) and key factors such as nurse knowledge, decision-making, and type and frequency of training program attendance. It also determined which among the identified factors—hospital infrastructure and resources, staffing levels, training availability, and nurse decision-making—is most perceived to contribute to Emergency Room efficiency, embedded in the same instrument, explored the specific challenges nurses face under time pressure and their perspectives on the most effective training interventions. Data was gathered from ER triage nurses currently working in the selected hospitals. Ethical approval was obtained from the hospital management, and informed consent was secured from all participants.

Quantitative data was analyzed using descriptive statistics, mean ranking, and correlation analysis to determine significant patterns and relationships. Thematic analysis was employed to analyze qualitative responses, allowing for the identification of recurring themes regarding operational challenges and training needs. Findings from both data strands were integrated to provide a comprehensive understanding of the issue. The study concluded by presenting evidence-based recommendations for training or intervention programs to enhance triage efficiency, reduce waiting times, and improve the overall quality of emergency care in similar hospital settings. The results will also inform future research directions in ER operational improvement.

Ethical Considerations

Ethical considerations are central to ensuring that this study is conducted with integrity, transparency, and respect for all involved. Before data collection began, the researcher obtained formal approval from the University Research Ethics Committee (UREC) of Palawan State University. This certified that the study complied with ethical guidelines concerning the protection of human participants, data privacy, and responsible research conduct. Furthermore, written consents were secured from the administrators of the participating hospitals—Adventist Hospital Palawan and Palawan Medical Mission Group Multipurpose Cooperative (PMMGMPC)—to conduct the study in their respective emergency departments.

Participation in the study was entirely voluntary. All ER triage nurses involved were given an informed consent form explaining the study's purpose, procedures, potential risks and benefits, and their right to withdraw at any time without penalty. The consent form emphasized that participation does not affect their professional standing or employment in any way. Participants were also informed that their responses would remain anonymous and would be reported in aggregate form only. To maintain confidentiality and privacy, all collected data was anonymized—no personally identifiable information was attached to the responses. Data was stored securely in password-protected digital files, accessible only to the researcher. Any sensitive information disclosed during the study was treated with strict confidentiality and used solely for academic analysis and reporting.

In accordance with academic integrity standards, the final research manuscript was screened using Turnitin to ensure a similarity index below 15%. Additionally, artificial intelligence (AI) tools were used

exclusively for grammar checking, formatting, and citation management. The researcher affirms that no AI-generated content was used to create or analyze the study's findings; all critical writing, interpretation, and conclusions remained the sole responsibility of the researcher.

Once the study has been completed, findings were shared with the participating hospitals in generalized form to protect institutional anonymity. This provided them with practical insights while preserving confidentiality. Any challenges encountered during data collection—such as inconsistencies, participant concerns, or logistical delays—were addressed transparently and documented in the final report. This study was guided by the principles of respect for persons, beneficence, and justice, and complied with the Data Privacy Act of 2012 and the ethical standards of the Philippine Health Research Ethics Board (PHREB).

Chapter IV
PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents the analysis of the statistical data collected to address the research questions outlined in the study. It includes the presentation, analysis, and interpretation of the data, aimed at clarifying the findings. Furthermore, the results of the statistical tests performed to assess the hypotheses are examined, providing insights into their significance and relevance to the overall research objectives.

Socio-Demographic Profile of the Respondents

The following tables show the distribution of the socio-demographic profiles of the selected ER triage nurses in private hospitals in Puerto Princesa City. The data encompass essential variables, including the respondents' age, trainings attended, and length of experience as triage nurses. Descriptive statistics such as frequency distributions, percentages, and rankings have been employed to effectively convey the collected statistical information.

Table 4.1

ER Triage Nurses' Profiles in terms of Age

Age		Frequency (f)	Percentage (%)
	20 – 25 years old	1	5.56
	26 – 30 years old	4	22.22
	31 – 35 years old	7	38.89
	36 – 40 years old	6	33.33
TOTAL		**18**	**100.00**

The data from Table 4.1 reveals a significant variation in the age distributions of the ER triage nurses who served as the respondents of this study. It can be gleaned that the majority (7) or 38.89% of the respondents aged 31 to 35 years old. Notably, this statistic is followed by six respondents or 33.33% whose ages belong to 36–40 years old. Meanwhile, the data also depicts that four or 22.22% of the nurses are within the 26–30 years old range, whereas 5.56% are 20–25 years old, representing the youngest group among the respondents.

Furthermore, the age distribution indicates that most ER triage nurses in the selected private hospitals of Puerto Princesa City are in their early to mid-thirties, suggesting that they are in the prime years of their

professional practice. Nurses within this age range are often considered to be at the peak of their competence, capable of handling the complex and high-stress nature of triage work efficiently.

The predominance of nurses aged 31–35 implies that the ER triage workforce composed mainly of experienced and well-established practitioners, which may lead to higher accuracy in patient assessment, faster decision-making, and improved quality of emergency care. Further, the data depict that their extensive exposure to clinical situations enhances their ability to prioritize patients effectively and manage emergencies with confidence. Moreover, this demographic pattern implies that private hospitals benefit from a stable and reliable nursing workforce, with professionals who have likely developed strong leadership and mentoring skills, further contributing to the overall efficiency of emergency department operations.

The aforementioned findings coincide with Kim et al. (2022) and Putra et al. (2021) whose findings reveal that most triage nurses are mid-career professionals. Likewise, these studies support the findings of this study that ER triage nurses tend to be in their thirties—an age range typically associated with clinical proficiency, decision-making maturity, and resilience under pressure.

It implies that the majority of ER triage nurses are in their early to mid-thirties, indicating a workforce with substantial professional experience. This age distribution suggests that nurses are likely confident and skilled in assessing patients, making rapid triage decisions, and managing emergencies. Their experience contributes to accurate prioritization of care and efficient patient flow, ultimately enhancing patient safety and quality of emergency care. Additionally, the presence of well-established nurses can provide mentorship to less experienced staff, strengthening the overall competency of the triage team.

Table 4.2

ER Triage Nurses' Profiles in terms of Training Attended

Training Attended	Frequency (f)	Percentage (%)
Basic Life Support	18	100.00
Advanced Cardiac Life Support	18	100.00
Triage Protocol Training	0	0
Emergency Nursing Core Course	0	0
Mass Casualty Incident Management	0	0
In-House Hospital Triage Seminar	0	0

Table 4.2 presents the distribution of ER triage nurses according to the trainings they have attended. Based on the analysis, the data show that all (100%) of the respondents have attended Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) trainings, while none have participated in Triage Protocol Training, Emergency Nursing Core Course, Mass Casualty Incident Management, or In-House Hospital Triage Seminar.

This finding indicates that while all ER triage nurses are well-equipped with fundamental life-saving and resuscitation skills, there appears to be a notable absence of specialized training directly related to triage systems and emergency department management. Interestingly, the ER triage nurses' attendance in BLS and ACLS underscores that they possess essential knowledge and skills for immediate patient care and resuscitation. However, the lack of participation in more advanced or specialized triage-related courses

highlights a potential gap in continuing professional development specific to triage assessment, prioritization, and decision-making processes.

The findings of this study underscore the need for hospitals to institutionalize regular and specialized triage training programs to enhance nurses' competencies in patient prioritization, improve coordination during emergencies, and ensure adherence to national or international triage standards. Similarly, strengthening this area through continuous professional development and simulation-based training can significantly improve the overall quality and efficiency of emergency care services.

Furthermore, the results of this study are parallel with the findings of Zagalioti et al. (2023), who echoed that triage training significantly improved triage performance among emergency nurses. This also coincides with the notion that the absence of triage-specific training among ER triage nurses may represent a gap in performance or quality.

It implies that even without formal, triage-specific training, nurses can demonstrate strong confidence when managing emergencies. This confidence is often grounded in their solid educational foundation, broad clinical exposure, and prior emergency care training, which equip them to apply core patient assessment and prioritization in real-life settings. Their background in emergency response and hands-on experience enable them to function effectively in triage environments, showing adaptability and sound clinical judgment under pressure.

The result of the study also highlights a valuable strength among ER triage nurses in the selected private hospitals: their competence in both basic and advanced life support, which forms a critical backbone of safe and responsive emergency care. At the same time, the results point to an opportunity for further professional growth in triage training and protocols. Enhancing knowledge and skills in these specific areas would not only build upon their existing competencies but also further improve the efficiency, consistency, and accuracy of triage decision-making, particularly in high-volume situations or mass-casualty incidents where rapid and precise patient prioritization is essential.

Table 4.3

ER Triage Nurses' Profiles in terms of Years of Experience

Years of Experience	Frequency (f)	Percentage (%)
Less than one year	8	44.44
1 – 3 years	5	27.78
4 – 6 years	1	5.56
7 – 10 years	4	22.22
TOTAL	**18**	**100.00**

Table 4.3 illustrates the distribution of ER triage nurses according to their years of experience. The data reveal that the largest group of respondents, representing 44.44% (8), have less than one year of experience as ER triage nurses. This statistic is followed by five or 27.78% with 1–3 years of experience and 22.22% (4) with 7–10 years of experience. Notably, only 5.56% of the respondents have been served as ER triage nurses for 4–6 years.

This distribution indicates that a considerable proportion of ER triage nurses in the selected private hospitals of Puerto Princesa City are relatively new in the field, with less than three years of triage

experience. This statistical trend stresses a young and developing workforce within the emergency department triage. Additionally, the dominance of nurses with limited experience highlights the need for continuous capacity-building and structured mentorship programs to strengthen triage competencies. This implies that newer nurses may have the theoretical foundation but might still lack the clinical judgment and rapid decision-making skills that are honed through years of hands-on practice in emergency settings. The result of this study is parallel with Comia et al. (2023), who highlighted that decision-making competence among triage nurses is significantly associated with both experience and training exposure, underscoring the importance of guided clinical practice.

This implies that a large portion of ER triage nurses are relatively new, with less than three years of experience, which may limit their clinical judgment and rapid decision-making in emergency situations. This highlights the need for continuous mentoring, hands-on training, and structured capacity-building programs to strengthen their triage competencies and ensure safe, efficient, and high-quality nursing care.

Respondents' Level of Triage Knowledge and Decision-Making Ability

The following tables present the level of triage knowledge and triage decision-making ability of the selected ER triage nurses from private hospitals in Puerto Princesa City, measured in terms of the following dimensions: (a) cognitive characteristics, (b) critical thinking, (c) experience, and (d) intuition. To determine the overall assessment for each indicator, the mean was utilized as the statistical tool for analysis.

Table 4.4

Respondents' Level of Triage Knowledge and Decision-Making Ability
In terms of Cognitive Characteristics

Statement	Mean	Descriptor
1. I can effectively prioritize patient care to meet time-sensitive needs.	3.44	Very High
2. I feel confident when making nursing decisions during triage.	3.22	High
3. I trust my clinical judgment to improve patient outcomes.	3.17	High
4. I have sufficient knowledge across various clinical areas relevant to triage.	2.94	High
5. I remain organized and focused under pressure.	2.89	High
Overall Mean Rating	**3.13**	**High**

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.4 presents the respondents' level of triage knowledge and decision-making ability in terms of cognitive characteristics. It can be gleaned in the analysis that the statistics show that the highest-rated statement, *"I can effectively prioritize patient care to meet time-sensitive needs,"* received a mean of 3.44, with a qualitative descriptor of very high. This high mean rating suggests that the ER triage nurses have strong cognitive skills in prioritizing patients based on urgency. Likewise, they are confident in identifying which patients require immediate attention, which is critical in emergency settings.

Furthermore, this statistic was followed by the statement "*I feel confident when making nursing decisions during triage"* with a mean rating of 3.22. This data highlights that nurses generally feel confident in their decision-making during triage, though slightly lower than their confidence in prioritizing patient care. This further suggests a high level of self-assurance, but there may still be some hesitation in certain complex or high-pressure scenarios.

On the other hand, the lowest mean rating of 2.89 was obtained by the statement "*I remain organized and focused under pressure".* This data indicates that nurses feel may only moderately capable of maintaining organization and focus during high-pressure situations. This underscores that stress and workload may affect their performance more than other cognitive skills, such as prioritizing care.

Moreover, the overall mean rating for cognitive characteristics is 3.13, which falls within the high range. This stresses that the selected ER triage nurses in the private hospitals of Puerto Princesa City generally possess strong cognitive skills necessary for effective triage decision-making. They demonstrate confidence in prioritizing patient care, applying clinical judgment, and maintaining focus under stressful conditions, which are critical competencies in emergency settings. However, the slightly lower ratings in knowledge across clinical areas and organizations under pressure indicate areas where additional training or continuous professional development could further enhance their cognitive capacity. Similarly, the variation in mean ratings suggests a need for ongoing education and skills reinforcement to strengthen weaker areas. Enhancing these competencies through workshops, simulation exercises, or scenario-based training can help ensure that triage nurses maintain consistent accuracy and efficiency in decision-making under pressure.

The results of this study are consistent with Tiongson and Julian (2020), who identified critical thinking, intuition, and structured clinical reasoning as essential attributes for accurate triage decisions. Moreover, the findings also validate the study of Thompson et al. (2022), who emphasized that expert triage nurses rely on traits such as organization under pressure, confidence in clinical judgment, and intuitive assessment to make timely and effective decisions. Collectively, these studies corroborate the current findings, suggesting that the nurses' strong cognitive characteristics are fundamental to safe, efficient, and accurate triage performance in emergency settings.

It implies that ER triage nurses generally have strong cognitive skills, including patient prioritization and timely decision-making. These abilities support effective and safe care. However, slightly lower ratings in organization under pressure and breadth of clinical knowledge suggest potential gaps that could affect care consistency during emergencies. Enhancing cognitive skills through targeted training, scenario-based exercises, and simulation practice can improve nurses' assessment accuracy, critical thinking, and patient outcomes.

Table 4.5

Respondents' Level of Triage Knowledge and Decision-Making Ability
In terms of Critical Thinking

Statement	Mean	Descriptor
1. I take full responsibility for patients in the triage process.	3.66	Very High
2. I communicate effectively with patients during triage.	3.33	Very High
3. I received positive feedback on my triage decision.	3.22	High

4. I can quickly identify key information needed to triage accurately.	3.00	High
5. I effectively connect patient symptoms with my clinical assessments.	2.89	High
Overall Mean Rating	**3.21**	**High**

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.5 shows the respondents' level of triage knowledge and decision-making ability in terms of critical thinking. Among the five identified statements, the highest-rated statement was *"I take full responsibility for patients in the triage process",* which received a mean of 3.66 (Very High). This mean rating indicates that the nurses exhibit strong accountability and ownership over patient care during triage. In addition, this result reflects a good professional attitude among nurses, suggesting that they understand the critical nature of their role in the triage process and are motivated to uphold standards of care.

Additionally, the second-highest statement, "*I communicate effectively with patients during triage",* had a mean of 3.33 (Very High), reflecting a high level of competence in exchanging information clearly and ensuring patient understanding. This very high rating indicates that nurses are competent in explaining procedures, assessing patient needs, and ensuring patients understand their care plan.

In contrast, the lowest-rated statement was *"I effectively connect patient symptoms with my clinical assessments",* with a mean of 2.89 (High), suggesting that integrating patient-reported symptoms with clinical evaluation may be an area where some nurses could further improve. While still rated as high, this is the lowest among the cognitive characteristics, indicating that some nurses may experience challenges in synthesizing patient-reported symptoms with clinical observations. This finding suggests a potential need for targeted training in clinical reasoning, diagnostic thinking, and assessment skills to help nurses better interpret and connect patient information with clinical findings.

Interestingly, the overall mean rating for critical thinking was 3.21 (High), indicating that the ER triage nurses generally demonstrate strong critical thinking skills necessary for accurate and timely triage decisions. These findings imply that while accountability and communication skills are particular strengths, enhancing the ability to synthesize patient symptoms with clinical assessments could further improve the quality and precision of triage decision-making in emergency care.

The results of this study support Chang et al. (2024), who underscored critical thinking as a key mediator of triage competency among emergency nurses, stressing the vital role of critical thinking in triage decision-making. Similarly, Madayag et al. (2024) demonstrated how nurses' clinical judgment and critical thinking could be enhanced through targeted pedagogical interventions.

It implies that ER triage nurses demonstrate strong critical thinking skills, particularly in taking responsibility for patient care and communicating effectively. However, the slightly lower ability to connect patient-reported symptoms with clinical assessments suggests a potential risk of misprioritizing patients or missing critical cues during triage. Targeted training in clinical reasoning, diagnostic thinking, and assessment skills is needed to strengthen this competency, ensuring accurate, timely, and safe triage decision-making in emergency care.

Table 4.6
Respondents' Level of Triage Knowledge and Decision-Making Ability
In terms of Experience

Statement	Mean	Descriptor
1. I am confident in asking the right questions when assessing patients.	3.67	Very High
2. I rely on my clinical skills and judgment in triage.	3.50	Very High
3. I can differentiate critical from non-critical patients with ease.	3.44	Very High
4. My previous experiences help me make faster and better triage decisions.	3.39	Very High
5. I feel assured in my ability to triage patients correctly.	3.28	Very High
Overall Mean Rating	**3.46**	**Very High**

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.6 examines the ER triage nurses' level of triage knowledge and decision-making ability in terms of experience. Notably, all five identified statements garnered very high mean ratings based on the assessment of the respondents. The analysis depicts that the highest-rated statement was *"I am confident in asking the right questions when assessing patients,"* with a mean of 3.67 (Very High). This data pinpoints that the nurses are highly confident in their ability to gather accurate patient information, which is a critical skill developed through experience. Auxiliary to this statistic, the second-highest statement, *"I rely on my clinical skills and judgment in triage",* received a mean of 3.50 (Very High), reflecting strong reliance on accumulated knowledge and practical expertise when making triage decisions.

On the other hand, the lowest-rated statement was *"I feel assured in my ability to triage patients correctly"*, with a mean of 3.28 (Very High), suggesting that while overall confidence is very high, some nurses may still experience minor uncertainty despite their experience. Despite the high confidence, the fact that it is the lowest-rated statement among others suggests that some nurses may still experience occasional doubt, especially when faced with complex or ambiguous cases.

Meanwhile, the overall mean rating for experience was 3.46 (Very High), demonstrating that ER triage nurses in the selected private hospitals of Puerto Princesa City largely depend on their prior clinical experiences to make accurate, timely, and confident triage decisions. This finding emphasizes the value of practical exposure and accumulated experience in enhancing triage competency. This implies that nurses with extensive hands-on experience can more effectively recognize critical patient conditions, apply clinical judgment, and prioritize care, which contributes to improved patient outcomes and safety in emergency settings.

The results of this study align with Suamchaiyaphum et al. (2023), who demonstrated that years of experience among triage nurses were positively associated with decision-making competence. Their findings further reinforce the notion that hands-on experience is a vital contributor to accurate, timely, and confident triage decisions in emergency settings.

It implies that ER triage nurses depend on their clinical experience to make accurate and timely decisions during patient assessment. However, some nurses may still face uncertainty in complex or unclear cases,

which could result in slower triage, delayed interventions, or improper prioritization, potentially compromising patient safety and outcomes. Enhancing experiential learning through mentorship and scenario-based practice can help nurses confidently identify critical conditions, prioritize care, and ensure the delivery of high-quality emergency nursing care.

Table 4.7
Respondents' Level of Triage Knowledge and Decision-Making Ability
In terms of Intuition

Statement	Mean	Descriptor
1. I often recognize the severity of a patient's condition just by observing her/him.	3.22	High
2. I can tell when a situation is emergent even without complete information.	3.00	High
3. I trust my instincts when identifying a critically ill patient.	2.89	High
4. I sense deterioration even when clinical signs appear stable.	2.89	High
5. I rely on intuition when deciding triage priority.	2.56	High
Overall Mean Rating	**2.91**	**High**

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.7 highlights the self-reported levels of intuitive ability among the ER triage nurses in the selected private hospitals of Puerto Princesa City. Based on the analysis, it can be gleaned that the highest-rated statement *was "I often recognize the severity of a patient's condition just by observing her/him",* with a mean of 3.22 (High). This statistic indicates that the nurses are generally able to detect serious patient conditions through observation and pattern recognition. Furthermore, the second-highest statement, "*I can tell when a situation is emergent even without complete information",* received a mean of 3.00 (High), reflecting a high reliance on intuitive judgment when rapid decisions are required. Interestingly, this data indicates that nurses perceive themselves as capable of making rapid intuitive judgments in settings of uncertainty.

Contrarily, the lowest-rated statement was "*I rely on intuition when deciding triage priority"*, with a mean of 2.56 (High), suggesting that while intuition plays a role, nurses predominantly depend on knowledge, protocols, and prior experience rather than solely on instinct when prioritizing patients.

The overall mean rating for intuition was 2.91 (High), indicating that ER triage nurses in the selected private hospitals of Puerto Princesa City use intuition as a supplementary tool in decision-making, rather than as the primary basis for triage decisions. This highlights the complementary role of intuition, particularly in situations where clinical data may be incomplete or ambiguous.

The above findings validate the study by Comia et al. (2023), who found that decision-making competence among triage nurses is significantly influenced by years of experience and age, with intuitive judgment emerging as a component of overall competence. Similarly, Westerdahl et al. (2023) emphasized that clinical judgment, which underlies intuitive decision-making, develops through structured learning, pattern recognition, and practical exposure.

It implies that ER triage nurses use intuition as a supportive tool to identify critically ill patients and recognize emergent situations, particularly when information is incomplete. However, reliance on intuition is limited, and nurses primarily depend on knowledge, protocols, and experience. Insufficient intuitive judgment in complex or ambiguous cases could delay recognition of patient deterioration or affect prioritization, potentially impacting patient safety. Strengthening clinical exposure, reflective practice, and scenario-based training can help nurses develop more confident and accurate intuitive assessment, enhancing timely and effective emergency nursing care.

Relationship between the Respondents' Profiles and their Level of Triage Knowledge and Decision-Making Ability

The following tables examine the relationship between the profiles and the level of knowledge and triage decision-making ability of ER triage nurses in the two private hospitals in Puerto Princesa City. To test the relationship, chi-square test of independence was employed, tested at 0.05 level of significance.

Table 4.8

Relationship between ER Triage Nurses' Demographic Profiles and their Level of Triage Knowledge and Decision-Making Ability in terms of Cognitive Characteristics

Demographic Profiles	p-value	Interpretation
Age	0.0012**	Significant
Training	0.0094**	Significant
Years of Experience	0.0001**	Significant

Legend: ***Significant at 0.05 level of significance*

Table 4.8 shows the relationship between ER triage nurses' demographic profiles and their level of triage knowledge and decision-making ability in terms of cognitive characteristics. The table shows that all three demographic variables—age ($p = 0.0012$), training attended ($p = 0.0094$), and years of experience ($p = 0.0001$)—are statistically significant at the 0.05 threshold. This indicates that these demographic factors have a substantial association with how ER triage nurses perform in cognitive aspects of triage, such as prioritizing patient care, organizing tasks under pressure, and applying knowledge across clinical areas.

Specifically, the significant p-value for age suggests that older or more mature nurses may have stronger cognitive skills in triage, potentially due to greater life and professional experience. Moreover, the significance of training implies that nurses who have attended formal certifications, such as Basic Life Support or Advanced Cardiac Life Support, are better able to apply cognitive processes in clinical decision-making. In addition, the significance of length of experience highlights that nurses who have spent more years in the emergency department are likely to have more developed cognitive abilities, which enable them to make faster, more accurate, and structured triage decisions.

The results of the analyses suggest that cognitive competence in triage is influenced not only by formal education and training but also by professional maturity and practical experience. This finding supports the notion that hospital administrators and nurse managers should therefore consider continuous professional development programs, structured training, and mentorship opportunities to further enhance cognitive skills among ER triage nurses.

These findings are supported by the study of Comia et al. (2023), who noted that decision-making competence among triage nurses increased significantly with age and years of experience. This finding also corroborates with Seo et al. (2024) reporting that longer clinical experience improved triage classification accuracy, and Soola et al. (2022) demonstrating that both work experience and completion of triage training significantly enhanced nurses' decision-making ability. These literatures underscore the importance of experience, formal training, and professional maturity in developing cognitive competence among triage nurses.

It implies that age, training, and years of experience significantly influence ER triage nurses' cognitive abilities, including prioritizing patient care, organizing tasks under pressure, and applying knowledge across clinical areas. Experienced nurses and those with formal certifications demonstrate stronger cognitive skills, which support faster, more accurate, and structured triage decisions. This highlights the need for ongoing professional development, structured training, and mentorship programs to help less experienced or younger nurses strengthen their cognitive competence, ensuring safe, efficient, and high-quality patient care in emergency settings.

Table 4.9

Relationship between ER Triage Nurses' Demographic Profiles and their Level of Triage Knowledge and Decision-Making Ability in terms of Critical Thinking

Demographic Profiles	p-value	Interpretation
Age	0.0193**	Significant
Training	0.0003**	Significant
Years of Experience	0.0105**	Significant

Legend: ***Significant at 0.05 level of significance*

The results of Table 4.9 indicate that ER triage nurses' demographic profiles—age ($p = 0.0193$), training attended ($p = 0.0003$), and years of experience ($p = 0.0105$)—are significantly related to their level of triage knowledge and decision-making ability in terms of critical thinking. This suggests that older or more mature nurses tend to possess stronger critical thinking skills, likely due to accumulated personal and professional experience, while nurses who have completed formal training, such as Basic Life Support or Advanced Cardiac Life Support, demonstrate enhanced critical thinking as a result of structured education and exposure to clinical decision-making frameworks. Similarly, longer years of experience in the emergency department strengthen nurses' ability to analyze situations, evaluate patient conditions, and make sound decisions under time-sensitive circumstances.

These findings are supported by Song and Park (2025), who reported that decision-making competence, including critical thinking, increases significantly with age and professional experience. Furthermore, this was also validated by Seo et al. (2024), who underscored that longer clinical experience improves triage classification accuracy, while Futami et al. (2019) highlighted that completion of formal training enhances critical thinking and judgment among emergency nurses.

The results of this study highlights that hospitals should implement continuous professional development, structured training, and mentorship programs to allow less experienced nurses to learn from seasoned practitioners. Further, providing exposure to diverse clinical scenarios and promoting reflective practice

can further strengthen critical thinking, improve the accuracy and efficiency of triage decision-making, and ultimately enhance patient safety and quality of care.

It implies that age, training, and experience significantly affect ER triage nurses' critical thinking, with experienced and formally trained nurses showing stronger skills in assessing situations and making timely decisions. Providing ongoing training, mentorship, and exposure to diverse clinical scenarios can help less experienced nurses improve critical thinking, ensuring accurate and safe triage.

Table 4.10

Relationship between ER Triage Nurses' Demographic Profiles and their Level of Triage Knowledge and Decision-Making Ability in terms of Experience

Demographic Profiles	p-value	Interpretation
Age	0.0007**	Significant
Training	0.0019**	Significant
Years of Experience	0.0001**	Significant

Legend: ***Significant at 0.05 level of significance*

The results presented in Table 4.10 reveal that the demographic profiles of ER triage nurses—specifically age ($p = 0.0007$), training ($p = 0.0019$), and years of experience ($p = 0.0001$)—are all significantly related to their level of triage knowledge and decision-making ability in terms of experience. These findings indicate that older nurses tend to demonstrate higher levels of competence and confidence in managing triage situations, likely because professional maturity enhances their ability to integrate past clinical experiences into effective decision-making.

Meanwhile, the significant effect of training further suggests that nurses who have undergone specialized emergency or life support training possess a stronger foundation for making sound, experience-based clinical judgments. Moreover, the highly significant relationship between years of experience and triage ability underscores that consistent exposure to real-life emergency scenarios helps refine clinical intuition, situational awareness, and decision-making efficiency.

These results align with Kaya et al. (2025) who noted that triage decision-making levels were significantly associated with nurses' age, clinical experience, and post-graduate training. Similarly, this was also validated by Lee et al. (2024) who showed that nurses with longer clinical experience demonstrated superior triage accuracy and faster assessment times.

The implications of these findings highlight the importance of fostering an environment that values continuous professional growth and experience-based learning. Hence, hospitals should invest in structured training programs, mentorship systems, and simulation-based learning to enhance experiential learning among novice nurses. By complementing both formal training and experiential learning, healthcare institutions can ensure more consistent, accurate, and efficient triage processes, ultimately improving patient safety and outcomes in emergency care.

It implies that age, training, and years of experience significantly influence ER triage nurses' ability to make effective, experience-based decisions. Experienced and trained nurses demonstrate higher competence and confidence in managing triage, while ongoing mentorship, structured training, and

simulation-based learning can help less experienced nurses develop practical skills, improve decision-making, and ensure safe, efficient patient care in emergency settings.

Table 4.11

Relationship between ER Triage Nurses' Demographic Profiles and their Level of Triage Knowledge and Decision-Making Ability in terms of Intuition

Demographic Profiles	p-value	Interpretation
Age	0.0014**	Significant
Training	0.0137**	Significant
Years of Experience	0.0028**	Significant

Legend: ***Significant at 0.05 level of significance*

The findings in Table 4.11 reveal that there is a significant relationship between ER triage nurses' demographic profiles—specifically age (p = 0.0014), training (p = 0.0137), and years of experience (p = 0.0028)—and their level of triage knowledge and decision-making ability in terms of intuition. This indicates that as nurses advance in age and gain more years of professional practice, their intuitive capacity in assessing patient conditions becomes more refined and reliable. Intuition, often described as the nurse's "gut feeling" or subconscious clinical insight, develops through repeated exposure to diverse clinical situations where pattern recognition and rapid judgment are essential. The significance of training further suggests that formal learning experiences, such as emergency response and life-support courses, not only enhance technical competencies but also strengthen a nurse's intuitive confidence by reinforcing the knowledge base from which intuition draws. Thus, both experience and structured training play complementary roles in fostering sound intuitive decision-making among ER triage nurses.

These findings are aligned with Lyneham et al. (2018) who found that professional maturity, combined with continuous training, improves nurses' intuitive decision-making and situational awareness during triage. Similarly, this also coincides with Sutriningsih et al. (2020) who reported that nurses with longer clinical exposure demonstrated more accurate and confident patient assessments, attributing this to intuitive judgment developed through experience. Seo et al. (2023) also highlighted that clinical judgment and intuition are enhanced through years of practice and structured learning. They further affirmed that intuition is not merely instinctual but an advanced cognitive skill cultivated through accumulated experience and reinforced by formal training.

This study implies that hospital administrators should acknowledge the importance of intuition as a valuable component of triage decision-making. To nurture this skill, institutions should provide opportunities for experiential learning, such as case-based simulations, reflective debriefings, and mentorship programs where novice nurses can learn from the experiential wisdom of senior triage nurses. Encouraging participation in continuing education and certification programs can further sharpen intuitive assessment and decision-making abilities.

It implies that age, training, and years of experience significantly affect ER triage nurses' intuitive decision-making. Experienced and formally trained nurses demonstrate stronger intuition, allowing them to recognize patient deterioration and emergent conditions even with limited information. Developing intuition in less experienced nurses through mentorship, case-based simulations, reflective practice, and

continuing education can enhance rapid, accurate triage decisions, ultimately improving patient safety and quality of emergency care.

Respondents' Perceptions on the Main Contributors to the Efficiency of the Emergency Room Triaging

The following tables analyze the ER nurses' perceptions on the main contributors to the efficiency of the emergency room triaging in terms of the hospital environment and resources. To ascertain the respondents' evaluations, descriptive statistics such as mean ratings was utilized.

Table 4.12

Respondents' Perceptions on the Main Contributors to the Emergency Room Triaging
In terms of Hospital Environment

Statement	Mean	Descriptor
1. The physical layout of the ER allows for smooth and efficient triage operations.	3.00	Agree
2. Clear signage and pathways in the ER facilitate patient flow from entry to triage and treatment.	2.98	Agree
3. The ER environment is organized in a way that supports rapid and effective triage decision-making.	2.96	Agree
4. The availability of designated triage space allows nurses to assess patients without interruption.	2.94	Agree
5. The design of the triage area helps reduce patient confusion and movement delays.	2.72	Agree
Overall Mean Rating	**2.92**	**Agree**

Legend for the Mean Rating: *Strongly Disagree: 1.00 – 1.74; Disagree: 1.75 – 2.49; Agree: 2.50 – 3.24; Strongly Agree: 3.25 – 4.00*

The data presented in Table 4.12 show that ER triage nurses generally agree that the hospital environment plays an important role in supporting effective triage operations, with an overall mean rating of 2.92. This indicates that, while the current emergency room (ER) setup is viewed as generally conducive to triage efficiency, there remains room for improvement in optimizing physical layout and workflow design.

Among the specific statements, the highest mean score of 3.00 corresponds to the view that *"the physical layout of the ER allows for smooth and efficient triage operations,"* suggesting that nurses recognize the existing structure as adequate for basic triage processes. This is closely followed by statements on clear signage (mean = 2.98) and an organized environment that supports decision-making (mean = 2.96), both of which emphasize that environmental clarity and organization contribute significantly to nurses' ability to make timely triage decisions. The lowest-rated item (mean = 2.72) refers to the *"design of the triage area helping reduce patient confusion and movement delays,"* indicating that although triage spaces are functional, patient flow and spatial efficiency may still be hindered by crowding or limited visibility.

These findings are consistent with previous research showing that the hospital environment is a key determinant of triage effectiveness and nurse performance. For instance, Khankeh et al. (2022) found that spatial organization and ergonomic design in the ER directly influence triage speed and accuracy by

minimizing physical barriers and distractions. Similarly, Abbas et al. (2021) emphasized that well-planned triage areas—with clear signage, sufficient space, and appropriate lighting—facilitate smoother patient flow and reduce cognitive overload among nurses during peak hours. In the Philippine context, Ramos et al. (2023) highlighted that inadequate infrastructure and overcrowded ER setups often hinder the efficiency of triage operations in private and government hospitals alike

The implications of these findings suggest that hospital administrators should prioritize environmental and structural improvements within the ER to enhance triage performance. This includes ensuring adequate triage space, proper signage, designated patient flow pathways, and ergonomic workstation layouts that reduce fatigue and distractions for nurses. Investing in such environmental enhancements not only improves the efficiency and accuracy of triage decisions but also promotes patient safety, satisfaction, and overall quality of emergency care.

Table 4.13

Respondents' Perceptions on the Main Contributors to the Emergency Room Triaging In terms of Resources

Statement	Mean	Descriptor
1. Essential supplies (e.g., oxygen, diagnostic tools, gloves) are readily accessible during triage.	3.33	Agree
2. Maintenance of triage equipment and supplies is conducted regularly to avoid delays.	3.11	Agree
3. Medical equipment needed for triage assessments is consistently available and functional.	3.06	Agree
4. Triage processes are supported by an up-to-date electronic health record (EHR) system or similar technology.	3.00	Agree
5. The hospital consistently allocates adequate physical and material resources for triage operations.	2.72	Agree
Overall Mean Rating	**3.04**	**Agree**

Legend for the Mean Rating: *Strongly Disagree: 1.00 – 1.74; Disagree: 1.75 – 2.49; Agree: 2.50 – 3.24; Strongly Agree: 3.25 – 4.00*

The results presented in Table 4.13 indicate that ER triage nurses agree that the availability and management of resources play a crucial role in effective triage operations, with an overall mean rating of 3.04. This suggests that respondents generally perceive their hospital's material and technological support as adequate in facilitating efficient triage, though not without areas for improvement.

Among the five identified statements, the analysis depicts that the highest-rated statement, *"Essential supplies (e.g., oxygen, diagnostic tools, gloves) are readily accessible during triage,"* obtained a mean of 3.33, indicating that nurses strongly agree that the availability of basic medical supplies supports their ability to perform timely and accurate assessments. The next highest statements—regular maintenance of triage equipment (mean = 3.11) and consistent availability of functional medical equipment (mean = 3.06)—show that respondents recognize the importance of equipment reliability and upkeep in ensuring uninterrupted triage operations.

On the other hand, the lowest-rated item, *"The hospital consistently allocates adequate physical and material resources for triage operations"* (mean = 2.72), implies that while essential supplies are available, the broader allocation and sustainability of resources remain inconsistent, possibly due to budget constraints or administrative priorities.

These findings are supported by Oluwatosin et al. (2022), who emphasized the link between resource adequacy and triage performance. They further posited that sufficient material resources and equipment availability are critical for reducing triage delays and ensuring accurate patient prioritization, especially in emergency settings. Adegoke and Smith (2023) also noted that when emergency departments lack proper resource management systems, nurses experience increased stress and reduced efficiency, which can compromise patient safety. In the Philippine context, De Guzman et al. (2024) reported that private hospitals in urban centers like Puerto Princesa often face fluctuating resource allocation, affecting the consistency of triage procedures and contributing to workload strain among ER staff.

The implications of these findings underscore the need for hospital administrators to establish sustainable resource management systems to ensure the constant availability and maintenance of essential triage tools and technologies. Regular audits of triage supplies, investment in modern equipment such as digital triage systems or EHR integration, and adequate budget allocation are vital to maintaining operational efficiency. Hence, by prioritizing resource adequacy and technological readiness, hospitals can strengthen the capacity of ER nurses to perform accurate and timely triage decisions—ultimately improving patient outcomes and enhancing the overall quality of emergency care delivery.

It implies that the availability and proper management of resources directly affect nurses' ability to perform efficient and accurate triage. When supplies and equipment are readily accessible and functional, nurses can assess patients promptly and make timely decisions, reducing delays in care. Inconsistent resource allocation, however, may hinder their performance, potentially affecting patient safety and outcomes. Ensuring reliable access to essential tools, maintaining equipment, and integrating supportive technologies like EHRs enable nurses to provide faster, more precise, and safer emergency care.

Relationship between the Respondents' Profiles and their Perceptions on the Main Contributors to the Efficiency of the Emergency Room Triaging

The following tables present the relationship between the respondents' demographic profile and their perceived contributing factors to the efficiency of Emergency room triaging. To test the relationship, chi-square test of independence was employed with a threshold of 0.05 level of significance.

Table 4.14

Relationship between ER Triage Nurses' Demographic Profiles and their Perceived Contributors to the Efficiency of ER Triaging in terms of Hospital Environment

Demographic Profiles	p-value	Interpretation
Age	0.081	Not Significant
Training	0.106	Not Significant
Years of Experience	0.093	Not Significant

Legend: ***Significant at 0.05 level of significance*

Table 4.14 shows that the relationship between ER triage nurses' demographic profiles—age, training, and years of experience—and their perceived contributors to the efficiency of ER triaging in terms of the hospital environment is not statistically significant. All p-values (age = 0.081, training = 0.106, years of experience = 0.093) exceed the 0.05 level of significance, indicating that differences in demographic characteristics do not influence how nurses perceive the environmental factors that affect triage efficiency. This statistic suggests that nurses, regardless of age, level of training, or length of experience, share similar views on the hospital environment's role in supporting or hindering triage processes. The consistency in their perceptions implies that the environmental facilitators or barriers in the ER are experienced uniformly across groups, pointing to systemic conditions rather than individual differences. The findings highlight the need for hospital administrators to focus on organizational improvements—such as enhancing the physical layout, ensuring equipment accessibility, and optimizing workflow systems—since these environmental issues impact nurses equally.

Furthermore, the findings imply that improvements in ER triage efficiency should focus on organizational and environmental factors rather than on the demographic characteristics of nurses, since age, training, and years of experience do not significantly influence their perceptions of the hospital environment. This suggests that all triage nurses, regardless of background, encounter similar environmental conditions, highlighting the need for hospital administrators to address system-wide issues such as physical layout, equipment accessibility, workspace design, and workflow support.

The results of this study support the findings of Mihdawi (2020), who reported that nurses' demographic profiles were not significantly associated with nurses' perceptions of patient safety culture, indicating that workplace perceptions tend to be shared across demographic groups. This also aligned with Peeler (2015), who echoed that there is no significant relationship between demographic factors and perceptions of work environment conditions. These studies support the present finding that demographic characteristics do not significantly influence how ER triage nurses perceive environmental contributors to triage efficiency.

It implies that nurses, regardless of age, training, or experience, perceive the hospital environment similarly in influencing ER triage efficiency. This suggests that systemic factors—such as the physical layout, accessibility of equipment, and workflow design—affect all nurses equally. An optimized environment allows nurses to assess and prioritize patients more effectively, reducing delays and minimizing the risk of errors. Conversely, poorly designed spaces or limited accessibility can hinder nurses' performance, potentially compromising patient safety and care outcomes. Therefore, improving ER infrastructure, streamlining workflow, and ensuring easy access to essential equipment are crucial to support nurses in delivering timely, accurate, and safe emergency care.

Table 4.15

Relationship between ER Triage Nurses' Demographic Profiles and their Perceived Contributors to the Efficiency of ER Triaging in terms of Resources

Demographic Profiles	p-value	Interpretation
Age	0.104	Not Significant
Training	0.418	Not Significant
Years of Experience	0.082	Not Significant

Legend: ***Significant at 0.05 level of significance*

Table 4.15 presents the relationship between ER triage nurses' demographic profiles—age, training, and years of experience—and their perceived contributors to the efficiency of ER triaging in terms of available resources. The results show that all p-values exceed the 0.05 level of significance (age = 0.104, training = 0.418, years of experience = 0.082), indicating that none of the demographic variables have a statistically significant relationship with nurses' perceptions of resource-related contributors to triage efficiency. This means that differences in age, level of training, and length of work experience do not influence how nurses perceive the availability, adequacy, or accessibility of resources, such as supplies, equipment, or tools used during triage. This implies that regardless of their background, the nurses share similar assessments of how resources support or hinder the efficiency of triage operations. This corroborates with Mihdawi (2020), who echoed that the demographic characteristics of nurses do not significantly influence their perceptions of the impact of resources on the efficiency of ER triaging.

It implies that nurses, regardless of age, training, or experience, perceive the availability and adequacy of ER resources similarly. This suggests that essential supplies, functional equipment, and tools are experienced uniformly across staff, highlighting that systemic resource management rather than individual differences influences triage efficiency. Adequate and readily accessible resources enable nurses to perform timely patient assessments, make accurate prioritization decisions, and reduce delays in emergency care. Conversely, resource shortages or poor organization can impede triage performance, increasing the risk of delayed interventions and compromising patient safety. Therefore, hospitals should ensure consistent allocation, maintenance, and accessibility of triage resources to support nurses in delivering efficient, safe, and high-quality emergency care.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions drawn from the study, recommendations for future research and discussion plan for dissemination.

This study aims to examine the level of knowledge and triage decision-making ability of ER triage nurses, as well as their perceptions of the key factors that influence the efficiency of triage processes in the emergency department. By exploring both competence and perception, the research provides a comprehensive understanding of how nurses assess and perform during the critical task of triaging patients. Specifically, the study seeks to determine whether demographic characteristics—such as age, training attended, and length of professional experience—significantly influence nurses' knowledge of triage protocols and their ability to make accurate and timely triage decisions. Through this investigation, the study intends to identify whether these demographic variables function as meaningful predictors of competence or whether triage proficiency is shaped more by organizational, environmental, or systemic factors within the emergency room setting.

The analysis is based on responses from 18 purposefully selected ER triage nurses from two private hospitals in Puerto Princesa City, Palawan. Data collection was carried out using a semi-structured with adapted modified questionnaire, which was systematically organized into four sections to capture comprehensive insights. The first section gathered demographic information about the respondents. Meanwhile, the second component is a 5-point Likert scale that ascertains the respondents' triage knowledge and decision-making ability in terms of cognitive characteristics, critical thinking, experience, and intuition. Further, the third component encompasses a Likert scale to determine the respondents' perceptions on the contribution of hospital environment and resources to the efficiency of the ER triaging.

To effectively address the research questions, descriptive statistics—including frequency counts, percentages, and rankings—were utilized to illustrate the demographic profiles of nurse respondents. Additionally, the mean was calculated to evaluate the nurse respondents' triage knowledge and decision-making ability. For a more in-depth exploration of the relationships between nurses' demographic profiles and their level of knowledge and decision-making ability, inferential statistics were employed. Specifically, the chi-square test of independence was used to analyze correlations between these variables, revealing significant trends that can inform healthcare management practices and policies.

Summary of Findings.

Nurses' Demographic Profiles

- **Age Distribution of Nurses**. The data on age reveal that the majority of ER triage nurses are between 31 and 35 years old, representing 38.89% of the respondents, followed by those aged 36 to 40 years old at 33.33%. Nurses aged 26 to 30 comprise 22.22%, while the youngest group, 20 to 25 years old, accounts for only 5.56%. This distribution indicates that most ER triage nurses in the selected private hospitals are in their early to mid-thirties, suggesting that they are in the prime of their professional practice. Being in this age range likely reflects a workforce with substantial clinical competence, capable of handling the complex and high-stress demands of triage work efficiently. The predominance of mid-career nurses also suggests a stable and reliable workforce that can contribute to accurate patient assessments, faster decision-making, and overall improvement in emergency care operations.
- **Training Attended by Nurses**. Analysis of the trainings attended shows that all respondents have completed Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) training, while none have participated in Triage Protocol Training, Emergency Nursing Core Course, Mass Casualty Incident Management, or in-house hospital triage seminars. This indicates that although ER triage nurses possess essential life-saving and resuscitation skills, there is a notable lack of specialized training directly related to triage systems and emergency department management. The absence of these trainings may limit their competencies in patient prioritization and rapid decision-making during high-volume or complex emergency situations. The findings highlight the need for hospitals to implement regular, specialized triage training programs to enhance nurses' skills and improve the efficiency and quality of triage processes.
- **Years of Experience of Nurses**. The distribution of years of experience reveals that the largest group of respondents, 44.44%, have less than one year of experience as ER triage nurses. Nurses with 1 to 3 years of experience account for 27.78%, those with 7 to 10 years comprise 22.22%, and only 5.56% have 4 to 6 years of experience. This suggests that a considerable portion of the ER triage workforce is relatively new to the role, indicating a developing and young workforce within the emergency department. The high proportion of less experienced nurses underscores the importance of continuous training, mentorship, and structured professional development to strengthen clinical judgment and rapid decision-making skills, ensuring that nurses are adequately prepared to manage the demands of triage effectively.

Respondents' Level of Triage Knowledge and Decision-Making Ability

- **Cognitive Characteristics.** The assessment of cognitive characteristics shows that ER triage nurses generally possess strong cognitive skills necessary for effective triage decision-making. They demonstrate high competence in prioritizing patient care and applying clinical judgment, which enables them to respond efficiently to urgent situations. However, some areas, such as maintaining

organization under pressure and broadening knowledge across various clinical domains, were slightly lower, suggesting potential areas for improvement. These findings indicate that while nurses have a solid cognitive foundation, targeted training and continuous professional development could further enhance their performance, particularly in high-stress or complex scenarios.

- **Critical Thinking.** In terms of critical thinking, the nurses exhibit high levels of competence, reflecting strong accountability, sound reasoning, and effective communication during the triage process. They are proactive in taking responsibility for patient care and demonstrate the ability to make logical and timely decisions. Despite these strengths, integrating patient-reported information with clinical assessments appears to be a relative area of weakness, indicating that nurses could benefit from additional training in analytical reasoning and clinical synthesis. Overall, these results highlight the importance of further strengthening critical thinking skills to enhance accuracy and efficiency in triage decision-making.
- **Experience.** The evaluation of experience as a factor in decision-making reveals that nurses rely heavily on accumulated hands-on exposure, which significantly enhances their triage competency, confidence, and decision-making efficiency. Practical experience allows nurses to differentiate critical from non-critical patients effectively, apply clinical skills with confidence, and make timely decisions. While occasional uncertainty may still occur in complex cases, the findings emphasize the crucial role of experience in building proficiency, suggesting that structured mentorship, guided practice, and exposure to varied clinical scenarios are essential for developing less experienced nurses.
- **Intuition.** Regarding intuition, nurses were found to use intuitive judgment as a supplementary tool to support decision-making rather than as the primary basis for triage decisions. They are generally able to recognize critical patient conditions through observation and pattern recognition, particularly in situations where information may be incomplete or ambiguous. Nevertheless, nurses rely predominantly on knowledge, protocols, and prior experience when prioritizing patients. These findings underscore that intuition complements, rather than replaces, structured clinical reasoning, and that developing intuitive skills through practical exposure and scenario-based training could further enhance nurses' overall triage competency.

Respondents' Perceptions on the Main Contributors to the Efficiency of the Emergency Room Triaging

- **Hospital Environment.** The findings show that ER triage nurses generally agree that the hospital environment plays a significant role in supporting efficient triage operations, with an overall mean rating of 2.92. Nurses recognize that the physical layout, clear signage, and overall organization of the ER contribute positively to smooth workflow and timely decision-making. However, areas such as the design of triage spaces to reduce patient confusion and movement delays were rated slightly lower, suggesting that patient flow and spatial efficiency could still be optimized. These results indicate that while the current ER setup is adequate for basic triage functions, improvements in environmental layout and workflow design could further enhance efficiency, reduce nurse workload, and support more accurate and rapid triage decisions.
- **Resources.** In terms of resources, ER triage nurses perceive the availability and management of materials, equipment, and technology as important contributors to effective triage, with an overall mean rating of 3.04. Respondents particularly agree that essential supplies and the maintenance of triage equipment are adequate, which facilitates timely and accurate patient assessments. Conversely, the allocation of broader physical and material resources received a lower rating, suggesting inconsistencies in resource provision that could affect sustained triage efficiency. These findings imply

that while hospitals generally provide the necessary tools for triage, continuous monitoring, investment in technology, and consistent resource management are needed to ensure uninterrupted and efficient emergency operations. Strengthening resource availability and reliability can improve nurse performance, reduce delays, and enhance overall patient care in the ER.

Conclusions

To shed light on the foregoing findings in this investigation, the following conclusion was inferred:

- **Relationship between the Respondents' Profiles and their Level of Triage Knowledge and Decision-Making Ability.**

A. **Cognitive Characteristics:** The analysis shows that age, training attended, and years of experience of ER triage nurses are all significantly associated with their cognitive characteristics in triage, indicating that older and more experienced nurses, as well as those with formal emergency or life-support training, demonstrate higher competence in prioritizing patient care, organizing tasks under pressure, and applying clinical knowledge across various domains. This suggests that professional maturity, structured training, and practical experience collectively strengthen nurses' cognitive abilities, enabling more accurate, timely, and structured triage decision-making.

B. **Critical Thinking:** The results indicate that age, formal training, and years of experience are all significant determinants of critical thinking skills among ER triage nurses. More mature and experienced nurses, as well as those who have completed formal certifications, show greater ability to analyze patient conditions, evaluate clinical situations, and make sound decisions under time-sensitive circumstances. These findings highlight the value of continuous professional development, structured training, and mentorship to enhance critical thinking and ensure consistent, high-quality triage performance.

C. **Experience:** The findings reveal that demographic factors—age, training, and years of experience—are significantly related to nurses' decision-making ability in terms of experience. Nurses with longer clinical exposure and formal training are better able to integrate prior experiences into real-time decision-making, demonstrating higher competence, confidence, and efficiency in patient assessment and prioritization. This underscores the importance of practical, hands-on experience in building triage proficiency and the need for structured experiential learning programs in emergency care settings.

D. **Intuition:** The study shows that age, training, and years of experience significantly influence nurses' intuitive abilities in triage decision-making. Experienced and professionally mature nurses, reinforced by formal training, exhibit more refined and reliable intuition, allowing them to recognize critical patient conditions and make rapid judgments even in ambiguous situations. This finding emphasizes that intuition develops through a combination of practical exposure and structured learning, and hospitals should provide opportunities for case-based simulations, reflective practice, and mentorship to cultivate and strengthen intuitive decision-making skills among ER triage nurses.

- **Relationship between the Respondents' Profiles and their Perceptions on the Main Contributors to the Efficiency of the Emergency Room Triaging**

A. **Hospital Environment:** The analysis reveals that age, training, and years of experience of ER triage nurses are not significantly related to their perceptions of the hospital environment as a contributor to triage efficiency. All p-values exceed the 0.05 threshold, indicating that demographic differences do not influence how nurses view environmental factors such as physical layout, signage, triage space, or workflow organization. This suggests that nurses, regardless of their background or professional experience, share similar perspectives on the role of the hospital environment in facilitating or

hindering triage processes. The consistency in perceptions implies that environmental conditions in the ER are experienced uniformly across all staff, highlighting the need for hospital administrators to focus on systemic and organizational improvements to optimize triage efficiency.

B. Resources: The results show that age, training, and years of experience do not have a statistically significant relationship with nurses' perceptions of resources as contributors to triage efficiency. The p-values for all demographic variables exceed 0.05, suggesting that nurses' assessments of the availability, adequacy, and accessibility of essential supplies, equipment, and technological tools are consistent across demographic groups. This indicates that perceptions regarding resource support in the ER are largely shared, regardless of nurses' professional background. The findings underscore the importance of ensuring sufficient, well-maintained resources to enhance triage performance, as all nurses, irrespective of experience or training, encounter similar challenges or advantages related to resource availability.

Recommendations

After examination of the findings and conclusion of the study, the following are strongly recommended for the utilization of the results of this study.

1. ER triage nurses are encouraged to engage in continuous professional development and participate in simulation-based training. These activities can help strengthen their decision-making skills, improve their ability to remain organized under pressure, and enhance clinical reasoning capabilities, ultimately leading to more accurate and efficient triage performance.
2. Physicians and allied health professionals should maintain clear and effective communication with triage nurses and actively collaborate during emergency care. Such teamwork supports accurate and timely patient assessments, reduces errors, and ensures smooth patient flow within the emergency department.
3. Hospital administrators are recommended to invest in infrastructure improvements, optimize workflow, ensure the consistent availability of essential resources, and implement mentorship and structured training programs. These initiatives can enhance the overall efficiency of triage operations and strengthen the competence of ER triage nurses.
4. Healthcare providers should establish and implement standardized triage protocols and integrate decision-support tools. These measures can improve patient prioritization, reduce variability in triage decisions, and maintain consistency in the quality of care provided in emergency settings.
5. Policy makers are encouraged to develop regulations that mandate specialized triage training for ER nurses, ensure adequate resource allocation, and set national standards for emergency care. Such policies can promote uniformity in triage practices and enhance patient safety across healthcare institutions.
6. Nursing educators should incorporate triage-specific training, critical thinking exercises, and simulation-based scenarios into both pre-service nursing curricula and continuing education programs. This approach prepares nurses to handle emergency situations with confidence and supports lifelong learning in clinical decision-making.
7. Patients are advised to provide accurate information about their symptoms and cooperate with ER triage procedures. Their active participation helps ensure timely assessment, appropriate prioritization, and effective management of their care in emergency settings.
8. The researcher may propose a comprehensive triage training program grounded in the findings of this study. This initiative can serve as the basis for a subsequent phase of research aimed at evaluating the

effectiveness of the training in enhancing triage knowledge, clinical decision-making skills, and emergency care outcomes.

9. Future researchers should investigate the long-term effects of training, clinical experience, environmental factors, and intuitive skills on triage performance and patient outcomes. Such studies can provide valuable insights for improving triage protocols, nurse training programs, and emergency care practices.

Structured Triage Competency Enhancement Program for ER Nurses

General Objective: To strengthen ER nurses' triage knowledge, clinical reasoning, and decision-making skills to improve patient prioritization and emergency room efficiency.

Module	Responsible Person	Training Focus (SOP-Based)	Participants	Key Topics	Learning Activities	Expected Competency Outcome
Module 1: Foundations of Emergency Triage and Protocols	1. Nurse Educator; 2.ER Head Nurse; 3. Hospital Policy Officer	Cognitive Ability	1. All ER Nurses assigned to triage, 2.Newly hired ER Nurses	1. Principles and goals of triage; 2. Standardized triage protocols (ESI or hospital-based system); 3. Triage categories and levels of urgency; 4. Patient prioritization principles; 5. Primary survey (ABCDE); Identification of red-flag symptoms	1. Case sorting exercises using triage levels; 2. Rapid assessment drills; 3. Protocol application workshop	Improved ability to follow triage protocols and assign correct priority levels based on patient condition
Module 2: Clinical Reasoning, Critical Thinking,	1. Senior ER Nurse; 2. ER Physician	Critical Thinking Skills	1.ER Triage Nurses, 2.ER Nurses	1. Symptom analysis and clinical cues; 2. Linking assessment	1. Simulation scenarios; 2. Case study	Enhanced analytical thinking and more accurate

and Prioritization			with less than 2 years ER experience	findings to the appropriate triage category; 3. Avoiding under-triage and over-triage; 4. Decision-making under pressure; 5. Prioritization during high patient volume	prioritization exercises; 3. Guided debriefings	patient prioritization decisions
Module 3: Trauma, FAST/SFAST & High-Risk Patient Identification	1.ER Physician; 2. Senior or Trauma Nurse or Critical Care Nurse Educator	Experience & Intuition	1.ER Triage Nurses, 2.Trauma-designated ER Nurses	1. Trauma triage principles; 2.FAST/SFAST awareness; 3.Recognition of stroke, MI, sepsis, and shock; 4. Identifying high-risk patients requiring immediate prioritization	1. Trauma simulations; 2.Vital sign trend interpretation; 3.Critical cue drills	Stronger clinical judgment and faster prioritization of life-threatening cases
Module 4: Mass Casualty & Disaster Triage Protocols	1.DOH Emergency Preparedness & Response Staff; 2.Hospital Disaster Committee; 3. ER Nurse Head	Decision-Making Under Pressure	1. All ER Nurses, 2.Hospital Disaster Response Team Members, Selected Allied	1. Mass casualty triage protocols (e.g., START); 2. Color-coded disaster triage tagging; 3. Patient prioritization when	1. Simulation drill; 2. Triage tagging exercise; 3. Team response scenarios	Ability to apply disaster triage protocols and prioritize patients effectively during mass

			Health Staff	resources are limited; 4. Resource allocation in surge events; Team coordination during disasters		casualty incidents
Module 5: Communication, Workflow, and Triage Documentation	1. ER Head Nurse; 2.Hospital Quality Assurance Officer; 3.Health Information/Records Officer	Environmental & System Factors	1. All ER Triage and staff Nurses, 2. Charge Nurses, 3. ER Document staff	1. SBAR communication; 2.Interprofessional teamwork; 3. Accurate triage documentation aligned with protocol; 4. ER workflow and patient flow management; 5. Resource utilization during peak hours	1. Role-playing communication drills; 2. Charting workshop; 3. Workflow simulation	Improved teamwork, correct protocol-based documentation, and smoother patient flow during triage

Training Evaluation Plan	
Evaluation Tool	**Purpose**
Pre-test and Post-test	Measure improvement in triage knowledge
Simulation Performance Checklist	Assess decision-making and prioritization skills
Drill Evaluation	Evaluate disaster triage competency
Case Study Analysis	Measure critical thinking ability
Participant Feedback	Identify strengths and areas for program improvement
Expected Overall Outcomes	

Area	Expected Improvement
Triage Knowledge	More accurate use of triage systems and protocols
Decision-Making	Faster and safer patient prioritization
Clinical Reasoning	Better recognition of subtle and critical cases
Team Communication	Clearer coordination within the ER team
Disaster Readiness	Effective performance during mass casualty events

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