

Assessing The Knowledge and Clinical Practice of Emergency Nurses In Managing Acute Coronary Syndrome

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ABSTRACT

The quantitative study evaluated the knowledge and practices of emergency nurses in treating patients with Acute Coronary Syndrome (ACS). The study also aimed to identify links between demographic factors and the effectiveness of nurses' practice in managing ACS. Moreover, the researchers wanted to collect data to show that emergency nursing organization can be improved. Most participants were aged 31 to 35 years (36%), male (58%), and held Bachelor of Science in Nursing diplomas (74%). Regarding their professional background, over half of the participants had 4 to 6 years of work experience and had attended at least one course or workshop on treating ACS. Regarding the results, the nurses showed a high level of understanding of the issue discussed, with an average score of 3.40. This knowledge relates to pathophysiology and ECG interpretation, among other subjects. In practice, their results were 3.34, rated as excellent. Nonetheless, consistent monitoring of key signs and ECG results produced a score of 3.12, rated as "Often," indicating a need for improvement in this area. Further analyses indicated that age was the only variable statistically related to ACS treatment effectiveness ($r = 0.283$, $p = 0.046$), while gender, level of education, experience, and number of training sessions did not significantly correlate with effectiveness. Based on these results, the study suggests a training program focused on standardized monitoring procedures, simulation training, perception guidance, and regular performance management. In summary, while emergency nurses demonstrated high proficiency in ACS treatment, continuous patient monitoring still needs improvement.

Keywords: Acute Coronary Syndrome, emergency nurses, nursing knowledge, clinical practice, emergency cardiac care

INTRODUCTION

Acute coronary syndrome (ACS) continues to be a major contributor to global morbidity and mortality, with ischemic heart disease accounting for more than 8.9 million deaths worldwide annually (World Health Organization [WHO], 2023). Low- and middle-income countries disproportionately bear this burden, where limited resources, workforce shortages, and systemic inefficiencies hinder timely access to life-saving interventions. In the Philippines, ACS remains a top cause of hospital admissions and mortality, presenting unique challenges to emergency care systems that are often overstretched and under-resourced. A local study at the University of Santo Tomas Hospital found that chest pain accounted for about 6% of emergency department (ED) consultations and over 27% of medical admissions, with about 22% ultimately diagnosed with ACS (Tarranza et al., 2022). These figures underscore the diagnostic challenges emergency nurses face in distinguishing ACS from other non-cardiac conditions in time-constrained, high-pressure clinical environments.

Globally, nurse-led care has had a significant impact on improving patient outcomes following ACS. Structured nursing interventions, including individualized patient education, post-discharge follow-up, and lifestyle modification counseling, have been shown to reduce complications and enhance long-term recovery. Nilsson et al. (2021) reported that nurse-led, telephone-based post-ACS follow-up significantly improved control of systolic blood pressure and LDL-C levels over 36 months. Similarly, Rehman et al. (2022) found that patients

receiving nurse-led counseling and education exhibited increased self-efficacy, better understanding of ACS symptoms, and improved adherence to lifestyle changes and pharmacological regimens. In acute care settings, emergency nurses are often the first point of contact and play a pivotal role in early symptom recognition, immediate triage, and administration of critical interventions.

Given these challenges, there is a critical need to evaluate the effectiveness of emergency care nurses in managing ACS in the Philippine context. This research aims to assess emergency nurses' clinical competencies, knowledge, and adherence to ACS management protocols. In doing so, the study intends to explore how systemic factors such as resource availability, institutional support, and access to ongoing professional training affect nursing performance and patient outcomes. By benchmarking local practices against international standards, the study seeks to identify gaps and propose evidence-based recommendations to strengthen emergency nursing care in ACS scenarios.

Furthermore, this research intends to contribute to policy development and curriculum refinement by providing empirical data that supports the implementation of structured clinical pathways for ACS in emergency departments. These findings are expected to inform hospital administrators, educators, and healthcare policymakers on the need to invest in nurse training, protocol development, and infrastructure improvements to support optimal ACS care. The study also aimed to contribute to the global discourse on emergency care in resource-limited settings, offering insights applicable to similar contexts in other developing countries.

The rationale for this study stems from numerous frontline observations in emergency departments, where delayed recognition and treatment of ACS have contributed to worse outcomes. Reports from healthcare institutions and anecdotal experiences across the country have consistently highlighted instances where patients presenting with chest pain failed to receive prompt ECG monitoring or early pharmacological intervention due to overcrowding, lack of triage clarity, or insufficient clinical guidance. These recurring scenarios reflect a systemic gap that requires evidence-based strategies and stronger clinical protocols. By investigating the effectiveness of emergency nurses in ACS management, this research aims to produce actionable insights that will support the professionalization of emergency care nursing and reduce preventable mortality associated with cardiovascular emergencies in the Philippines.

Statement of the Problem

This study aims to investigate the effectiveness of emergency nurses' knowledge and clinical practice in managing Acute Coronary Syndrome.

Specifically, it seeks to determine nurses' knowledge level regarding ACS, assess their adherence to clinical practice standards, and explore the relationship between knowledge and practice effectiveness in emergency settings.

1. What is the demographic profile of the respondents in terms of?
 - 1.1. Age
 - 1.2. Gender
 - 1.3. Highest Educational Attainment
 - 1.4. Length of Clinical Experience
 - 1.5. Trainings Attended
2. What is the level of effectiveness of nurses in managing patients with Acute Coronary Syndrome in terms of?
 - 2.1. Knowledge
 - 2.2. Clinical Practice
3. Is there significant relationship in the level of effectiveness nurses in managing patients with Acute Coronary Syndrome when grouped according to their demographic profile?

4. Based on the findings of the study, what action plan can be proposed?

Scope and Delimitations

This study aimed to evaluate the effectiveness of emergency nurses' knowledge and clinical practice in managing Acute Coronary Syndrome (ACS). Specifically, it assessed the level of knowledge and clinical performance of emergency nurses, analyzed how their demographic profiles relate to their effectiveness, and proposed an action plan based on the findings. The research was conducted among emergency nurses working in one hospital in Metro Manila from November to December 2025.

Review of Related Literature

Management Of Acute Coronary Syndrome

Emergency nurses' management of Acute Coronary Syndrome (ACS) has been a focus of various global studies. Knowledge and competence in early symptom recognition, ECG interpretation, and appropriate triage significantly affect patient outcomes. Lakew et al. (2023) reported that only 52% of emergency nurses in Addis Ababa demonstrated adequate ACS knowledge, and only 44% exhibited appropriate clinical practices. Higher education levels, guideline availability, and in-service training were associated with better outcomes. Similarly, Mohammadi et al. (2023) found that a structured triage education program significantly improved nurses' ability to assess and manage ACS patients, with improvements in patient triage performance, monitoring, and adherence to evidence-based protocols.

Simulation-based interventions have been shown to enhance nurses' clinical competencies. Silva et al. (2021) observed a statistically significant improvement in Brazilian nurses' confidence and clinical accuracy after undergoing ACS simulation training. Meanwhile, Saputro (2023) emphasized that accurate ECG interpretation skills strongly correlate with better decision-making and faster intervention, a finding echoed across emergency departments globally. Emergency nurses' attitudes and experience levels also influenced the effectiveness of these interventions. In the U.S., a study by the Emergency Nurses Association (2023) highlighted that while nurses recognized ACS symptoms well, gender bias occasionally affected triage accuracy, suggesting the need for regular competency-based assessments and bias-reduction training.

Across healthcare systems worldwide, emergency nurses' roles in ACS care are evolving to include more advanced responsibilities, such as initiating protocols, interpreting ECGs, and administering thrombolytics. These expanded roles require high competence and ongoing professional development. International guidelines, such as those from the American College of Cardiology (ACC) and American Heart Association (AHA), have become foundational in shaping nurses' practices. However, translating guidelines into real-world practice remains inconsistent without adequate institutional support, training, and nurse empowerment (Silva et al., 2021; Lakew et al., 2023).

In the Philippine context, a limited but growing body of literature focuses on the role of emergency nurses in ACS management. The UST Hospital (2022) developed a Chest Pain Pathway that outlines a multidisciplinary approach to ACS, including early triage, risk stratification, and protocol-driven interventions. While the model emphasizes physician responsibilities, it also acknowledges nurses' crucial role in early symptom recognition and initial management. Discussions within Filipino nurse communities emphasize the importance of certifications like ACLS and BLS, practical experience, and regular drills in improving emergency nurses' readiness for ACS cases (Reddit, 2025). However, empirical studies examining the effectiveness of emergency nurses' knowledge and practices remain scarce, underscoring the need for further local research in this domain.

Theoretical Framework

Patricia Benner's Novice to Expert theory (1984) describes the progression of nursing proficiency through five stages: novice, advanced beginner, competent, proficient, and expert. The theory is grounded in the Dreyfus Model of Skill Acquisition and emphasizes experiential learning as essential to developing clinical judgment and skill mastery. Benner's theory fundamentally contributes to nursing by recognizing that clinical knowledge and practice improve over time with experience, mentorship, and reflection. It stresses that expert nurses possess a deep understanding of clinical situations, allowing them to respond intuitively and effectively.

Orem's Self-Care Deficit Nursing Theory (SCDNT)

Developed by Dorothea Orem (1971), the Self-Care Deficit Nursing Theory focuses on patients' abilities to perform self-care and the nurse's role in supporting those who cannot meet their care needs independently. The theory includes three interrelated concepts: self-care, self-care deficit, and nursing systems.

Orem's theory shifts nursing practice toward patient-centered care by addressing patients' deficits and enabling autonomy through education and support. It underscores the importance of nurses' clinical interventions in assessing, planning, and implementing care that bridges patients' self-care gaps.

Conceptual Framework

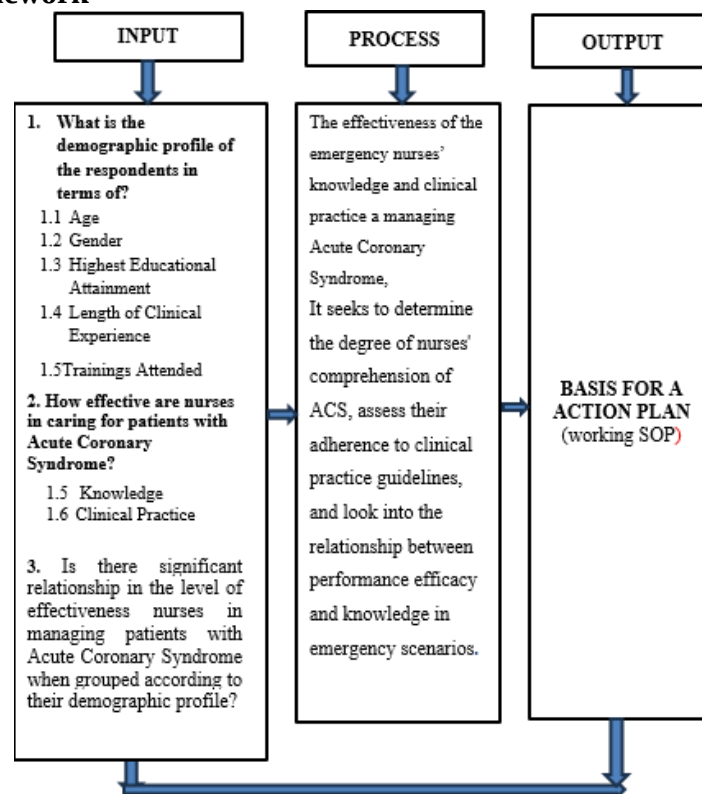


Fig. 1 Conceptual Framework

This study is guided by the Input-Process-Output (IPO) framework to systematically examine the effectiveness of emergency nurses in managing patients with Acute Coronary Syndrome (ACS).

The **Input** comprises the demographic profile of the nurses, including their age, gender, highest educational attainment, length of clinical experience, and training attended. These factors are foundational characteristics that may influence nurses' acquisition and application of knowledge and clinical skills related to ACS management.

The **Process** focuses on evaluating nurses' effectiveness in managing ACS, specifically by assessing their knowledge of the condition and their clinical practice in emergency settings. This phase shows how the inputs translate into practical nursing care.

Finally, the **Output** involves determining the significant relationships between nurses' demographic profiles and their effectiveness in ACS management, as well as developing a proposed action plan based on the findings. This action plan aims to address identified gaps and enhance nursing practice, thereby improving patient care outcomes. By employing the IPO model, the study provides a comprehensive framework that links nurses' background characteristics to their professional competencies and the quality of care delivered to ACS patients, ultimately guiding interventions to optimize emergency nursing effectiveness.

METHODOLOGY

Research Design

This study employed a quantitative descriptive correlational research design, as described by Creswell (2023), to systematically examine the effectiveness of emergency nurses' knowledge and clinical practice in managing Acute Coronary Syndrome (ACS). The descriptive aspect of the design allowed for the detailed assessment and description of nurses' demographic profiles, knowledge levels, and clinical practices. Meanwhile, the correlational component enabled the investigation of relationships between nurses' demographic variables and their effectiveness in ACS management. This design is appropriate because it allowed quantification of variables and exploration of associations without manipulating any variables, providing a comprehensive understanding of the current state of emergency nursing effectiveness in ACS care.

Population and Sampling Method

This study employed purposive sampling, a non-probability sampling technique where participants were selected based on specific characteristics relevant to the research objectives. In this case, purposive sampling was used to include emergency nurses with direct experience managing patients with Acute Coronary Syndrome (ACS) at the selected hospital in Metro Manila.

Purposive sampling was the most suitable method for this study because it ensured participants had the specific knowledge and clinical experience needed to provide meaningful data on the effectiveness of ACS management. Since the study focused on emergency nurses actively involved in ACS care, selecting participants who met this criterion enhanced the relevance and validity of the findings. This method also allowed the researcher to focus resources efficiently by including only those nurses who could provide rich, contextual insights related to the study objectives.

Data Gathering Procedure

Before conducting the research, the researcher sought official permission from the Dean of the Graduate School. This ensured the research plan was thoroughly reviewed from an academic perspective and aligned with the institution's ethical and scientific guidelines. Upon approval, the researcher requested formal support from the graduate school office or the authorized personnel to send a letter of intent to the chosen hospital in Metro Manila. This letter

formally requested permission to conduct the study on hospital premises and with their emergency nursing team.

Statistical Treatment of the Data

The collected data were subjected to appropriate statistical analyses to effectively address the research objectives and questions.

To explore relationships between demographic variables and nurses' effectiveness in managing ACS, the Pearson r correlation coefficient was used. This statistical test measured the strength and direction of the linear relationship between two continuous variables, such as age or years of experience, and the knowledge or clinical practice scores. A significant Pearson r value indicates whether certain demographic factors were associated with higher or lower effectiveness, providing insights into how these characteristics influence nursing performance in ACS management.

By utilizing these statistical treatments, the study ensured a comprehensive analysis that not only described the participants and their performance but also uncovered potential correlations that might inform targeted interventions and improvements in emergency nursing care.

Ethical Considerations

Ethical considerations are a vital component of conducting responsible and credible research. They serve as a moral compass that guides researchers in generating knowledge while protecting participants' dignity, rights, and well-being. These ethics are anchored in key principles—such as autonomy, beneficence, veracity, justice, confidentiality, non-maleficence, data privacy, and informed consent—that ensure fairness, integrity, and safety throughout the study.

Data privacy was safeguarded in line with legal and ethical standards. Sensitive information was securely managed and stored, with strict access controls to prevent unauthorized use. Compliance with data protection laws ensured participants' information was handled responsibly and confidentially. Lastly, informed consent is fundamental. Participants were fully briefed on the research purpose, procedures, potential risks, and anticipated benefits before agreeing to take part. Their voluntary agreement to participate, supported by clear understanding and freedom to withdraw at any stage, ensured ethical compliance and respect for their autonomy.

RESULTS AND DISCUSSION

PROBLEM #1. What is the demographic profile of the respondents?

The results present the demographic details of the 50 emergency nurse participants in the study. The results showed that the highest percentage of participants fell within the 31–35 age bracket (36%), followed by those in the 36–40 age range (24%). This suggests that most nurses in the emergency department were in early to middle adulthood, a phase often linked with developing clinical skills, gaining confidence in decision-making, and adapting well to high-stress clinical settings like emergency care units. Nurses in this age group were expected to show stronger clinical reasoning, a crucial skill for promptly identifying and treating Acute Coronary Syndrome (ACS).

The research found that more male nurses (58%) participated in the study than female nurses (42%), indicating a changing gender balance in the nursing field, especially in critical care areas like emergency departments.

Regarding length of clinical experience, findings revealed that 56% of respondents had 4–6 years of experience, while 44% had more than 6 years of clinical exposure. Notably, none of the respondents had 1–3 years of experience, indicating that the sample consisted entirely of relatively experienced nurses. Clinical experience is a significant factor in emergency care because it enhances pattern recognition, prioritization skills, and the speed of clinical decision-making. In ACS management, experienced nurses are more likely to promptly identify symptoms such as chest pain, electrocardiographic changes, and hemodynamic instability, which are critical for early intervention and improved patient outcomes (American Heart Association [AHA], 2022).

Regarding ACS- or emergency-care-related training, respondents were evenly distributed: 50% attended 1–2 trainings, and 50% attended three or more. Importantly, none of the respondents reported having no training exposure, suggesting that all participants had undergone continuing professional development relevant to emergency cardiovascular care. Overall, the demographic profile suggested that respondents were relatively experienced, adequately trained, and moderately educated emergency nurses actively engaged in continuous professional development. These characteristics mattered because they may have influenced both knowledge level and clinical practice in ACS management. The demographic composition of the respondents therefore provides an important foundation for interpreting their level of knowledge and the effectiveness of their clinical practice in managing Acute Coronary Syndrome, which will be further examined in the succeeding sections of this study.

PROBLEM #2 What is the level of effectiveness of nurses in managing patients with Acute Coronary Syndrome?

The degree of emergency nurses' expertise in treating patients with Acute Coronary Syndrome (ACS) is shown in Table 2.1. The respondents showed a very high level of knowledge regarding ACS management in emergency settings, as indicated by the overall mean score of 3.40 (0.49), which indicated a "Strongly Agree" interpretation. This suggests that emergency nurses were well prepared cognitively to identify, understand, and manage ACS cases, which is essential to reduce treatment delays and improve patient outcomes.

In terms of specific indicators, all items obtained mean scores ranging from 3.32 to 3.44, all described as "Strongly Agree." This was interpreted as a Very High Level of Knowledge. The highest mean score of 3.44 was observed in two indicators: knowledge of current ACS emergency treatment protocols and awareness of medications commonly administered during ACS emergencies and their effects. This suggests that respondents were well updated on evidence-based protocols and pharmacological interventions, which is essential for timely and appropriate management of ACS patients.

Similarly, respondents also scored highly in their ability to understand ACS pathophysiology ($M = 3.40$) and correctly interpret ECG findings related to ACS ($M = 3.40$). These competencies are crucial in emergency care, as early ECG interpretation and understanding disease mechanisms directly influence rapid decision-making and treatment initiation.

The lowest mean score, although still within the "Strongly Agree" range, was observed in confidence in recognizing early signs and symptoms of ACS ($M = 3.32$). While still indicating a high level of competence, this slightly lower score may suggest that early symptom recognition, particularly in atypical presentations, still requires reinforcement through ongoing training and clinical exposure.

Clinical Practice in Managing ACS

The overall mean score of 3.34 (SD = 0.47), interpreted as “Always Practiced,” indicated that respondents demonstrated a high level of adherence to appropriate clinical practices in managing ACS cases in emergency settings. This suggested that emergency nurses consistently applied standard protocols and delivered timely, appropriate care to patients with suspected or confirmed ACS. For specific indicators, most items were rated as “Always Practiced,” with mean scores ranging from 3.34 to 3.48. The highest mean score of 3.48 was obtained for providing clear patient education on ACS symptoms and emergency actions. education.

This finding emphasized that nurses prioritized patient education, a crucial element in improving patient knowledge, encouraging early symptom recognition, and reducing delays in seeking urgent medical attention. This aligned with the American Heart Association (2022), which underscored patient education as a key strategy for improving outcomes for individuals at risk of acute cardiac events.

Similarly, respondents reported that they always followed established protocols when administering medications for ACS ($M = 3.40$) and that they consistently collaborated effectively with the healthcare team during ACS management ($M = 3.36$). These findings indicated strong adherence to evidence-based guidelines and effective interprofessional collaboration, both essential to coordinated and timely intervention during cardiac emergencies. The World Health Organization (2023) underscores that adherence to standardized protocols and teamwork in emergency care significantly improves survival rates and reduces complications in acute cardiovascular conditions.

Overall, the results showed that emergency nurses demonstrated strong clinical skills when caring for patients with ACS. They showed strong dedication to following procedures, communicating clearly, and actively educating patients. Overall, the results showed a high level of clinical proficiency in line with international standards for emergency heart care, although monitoring protocols may need strengthening.

PROBLEM #4. What action plan can be proposed based on the findings of the study?

The study found a notable connection between nurses' effectiveness in caring for patients with acute coronary syndrome and their demographic characteristics.

The study found a connection between how well nurses care for patients with Acute Coronary Syndrome (ACS) and their demographic details, such as age, gender, education, years of clinical experience, and participation in training sessions. The results indicated that, of all the aspects examined, only age showed a notable correlation with nurses' efficiency in managing ACS ($r = 0.283$, $p = 0.046$). In contrast, the other demographic factors showed no significant correlation.

The strong correlation between age and effectiveness indicates that as nurses age, their ability to handle ACS cases tends to improve. This improvement may stem from the increasing clinical experience, enhanced critical thinking skills, and better clinical decision-making that usually come with age and professional growth. Elderly nurses are more likely to have dealt with a broader range of emergency cardiac cases, which may strengthen their ability to recognize subtle clinical cues and respond appropriately in time-sensitive situations. This finding is consistent with Benner's Novice to Expert Theory, which posits that clinical competence develops progressively through experience and exposure over time, leading to more refined intuitive decision-making in complex clinical environments.

In contrast, gender did not show a significant relationship with effectiveness ($r = -0.199$, $p = 0.165$), indicating that male and female nurses demonstrate comparable levels of effectiveness in ACS management. This finding reinforces the idea that nursing competence in emergency care is determined not by gender but by clinical training, adherence to protocols,

and professional competency standards. Educational attainment also showed no significant relationship with effectiveness ($r = 0.172$, $p = 0.233$). This suggests that higher academic qualifications do not necessarily translate directly into improved effectiveness in ACS management within emergency settings. While advanced education may enhance theoretical knowledge and research capacity, practical clinical effectiveness is often more strongly influenced by hands-on experience and exposure to real-life emergency situations. This finding aligns with the WHO (2023), which notes that while education strengthens foundational knowledge, competency in emergency care is largely dependent on clinical application and continuous practice.

Similarly, length of clinical experience was not significantly related to effectiveness ($r = -0.146$, $p = 0.312$). This indicates that years of service alone may not guarantee higher effectiveness in managing ACS cases. Nurses with fewer years of experience but intensive exposure to emergency cases and ongoing training may perform at levels similar to those with longer service. This finding supports the idea that experience quality, rather than duration alone, plays a more critical role in competency development in emergency nursing practice (AHA, 2022).

Lastly, trainings attended did not show a significant relationship with effectiveness ($r = 0.045$, $p = 0.756$). Although training is essential for maintaining competence, the non-significant result suggests that training frequency alone may not directly influence effectiveness unless it is accompanied by application in clinical practice. This may also reflect uniform exposure among respondents, as all participants reported attending at least some relevant training, limiting variability in the data.

Overall, the results suggest that only age plays a substantial role in nurses' ability to handle ACS, while gender, education level, clinical experience, and training attendance do not have significant impacts. This implies that effectiveness in emergency cardiac care is more closely linked to personal growth and practical experience than to demographic or educational factors.

CONCLUSIONS

Based on the findings, emergency nurses demonstrated a high level of knowledge and excellent clinical practice in managing Acute Coronary Syndrome. Their strong performance in recognizing symptoms, applying treatment protocols, interpreting ECG results, and educating patients reflected a competent and well-prepared nursing workforce in emergency cardiovascular care.

The study also concludes that demographic variables, except age, did not significantly influence nurses' effectiveness in ACS management. The significant relationship between age and effectiveness suggested that clinical maturity and accumulated experience contributed to improved decision-making and patient management skills. This finding aligns with Benner's Novice to Expert Theory, which emphasizes that clinical competence develops progressively through experience and exposure over time (Benner, 2020).

Meanwhile, the lack of significant relationships between effectiveness and education, clinical experience, and training attendance showed that competency in emergency cardiac care did not depend solely on formal qualifications or years of service, but on integrating knowledge, clinical exposure, and situational judgment. This supports the World Health Organization (2022), which emphasizes that healthcare competence is strengthened through continuous practice, system support, and ongoing professional development rather than static credentials alone.

Overall, the study found that emergency nurses were generally competent and effective in managing ACS cases; however, targeted interventions are still needed to improve

consistency in patient monitoring and further strengthen clinical performance in time-critical cardiac emergencies.

RECOMMENDATIONS

Based on the findings of the study on the level of emergency nurses' knowledge and clinical practice in the management of Acute Coronary Syndrome (ACS), several recommendations are hereby presented. These are anchored on the identified strengths and gaps in clinical practice, particularly the lower mean score in continuous monitoring of vital signs and ECG readings, as well as the significant relationship between age and effectiveness. The proposed action plan serves as the primary evidence-based framework for these recommendations.

1. First, it is recommended that hospital administrators and nursing service managers adopt and implement the proposed Enhancement Program for Emergency Nurses' Competency in ACS Management. Priority should be given to strengthening continuous monitoring through standardized ACS monitoring checklists, structured protocols, and real-time documentation tools. The study revealed that continuous monitoring obtained the lowest mean ($M = 3.12$), indicating inconsistency compared with other clinical practices. Because continuous ECG and vital signs monitoring is critical for detecting early signs of deterioration in ACS patients, institutionalizing a strict monitoring system will significantly improve patient safety and clinical outcomes. This recommendation is strongly supported by the American Heart Association (2022), which emphasizes continuous monitoring as a core component in reducing mortality and complications in acute cardiac events.
2. Second, it is recommended that regular simulation-based training and case scenario workshops be conducted, focusing on ACS emergency management, particularly on early symptom recognition, ECG interpretation, and rapid intervention protocols. Although the respondents demonstrated a high level of knowledge and clinical practice, continuous professional development remains essential to maintain competency and ensure adherence to updated guidelines. Simulation training is particularly important because it bridges the gap between theoretical knowledge and actual clinical application, allowing nurses to improve critical thinking and response time in high-pressure situations. The World Health Organization (2022) highlights that ongoing competency-based training is essential to strengthen emergency healthcare systems and improve workforce performance.
3. Third, hospital management should implement structured mentorship and preceptorship programs, pairing more experienced nurses with those who are relatively younger or less experienced in emergency care. Because the study found that age is significantly related to effectiveness, this suggests that clinical maturity contributes to better ACS management. Through mentorship, senior nurses can transfer their clinical experience to younger staff, improving decision-making skills, confidence, and clinical judgment in emergency situations. This aligns with Benner's Novice to Expert Theory, which emphasizes that clinical expertise develops through guided experience and exposure over time.
4. Fourth, it is recommended that continuous performance evaluation and audit systems be strengthened within the emergency department. Regularly monitor adherence to ACS protocols, medication administration standards, and patient monitoring practices to ensure consistent care delivery. Establish feedback mechanisms to address gaps immediately and reinforce good clinical practices. This will help sustain the high level of effectiveness observed in the study and improve it over time.

5. Lastly, future researchers are encouraged to expand this study by including larger samples and multiple hospital settings to further validate the findings. Additional variables such as workload, nurse-to-patient ratio, and equipment availability may also be explored, as these factors may influence clinical effectiveness in ACS management.

Overall, these recommendations emphasize that while emergency nurses already demonstrated a high level of knowledge and clinical competence in ACS management, continuous system-based improvements, structured training, and evidence-based institutional support are essential to further improve patient outcomes and sustain clinical excellence.

AI DECLARATION STATEMENT

Artificial intelligence (AI) tools were employed only to enhance language quality and formatting. The researcher independently carried out conceptualization, data analysis, interpretation of results, and formulation of conclusions.

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