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Factors related to the knowledge of implementing nurses in handling emergency patients

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ABSTRACT

Introduction: The effectiveness of emergency care heavily depends on the knowledge and skills of nurses. Errors in emergency treatment often lead to severe disability or death, highlighting the need for ongoing nurse training. This study aims to identify factors related to the knowledge of implementing nurses in handling emergency patients.

Method: An analytical survey with a cross-sectional approach was used, involving 30 respondents. Data were analyzed using univariate and bivariate techniques, including the Chi-Square test, with a significance level of $\alpha = 0.05$.

Results: The majority of respondents were aged 20–30 (80%), had higher education (53.3%), and were relatively new in service (60%). More than half (53.3%) had received emergency training. Bivariate analysis revealed significant relationships between knowledge and education ($p = 0.011$), length of service ($p = 0.007$), and training attendance ($p = 0.014$). Nurses with higher education, longer service, and formal training demonstrated better emergency handling knowledge.

Conclusion: Education, experience, and training significantly influence nurses' knowledge in emergency care. Continuous professional development, through formal education and certified emergency response training, is recommended to improve nursing care quality in emergencies.

Keywords: Education, Emergency Handling, Knowledge, Length of Service, Nurses.

INTRODUCTION

Health services are changing rapidly in line with changes in the needs and expectations of the community regarding health services (Omotosho, Alex Omotosho and Bass, 2025). The community is increasingly demanding better quality health services in connection with the increasing knowledge of the community, increasingly aware of news and communication media so that the community is increasingly aware of health and in general begins to have a strong belief that health and health services are fundamental rights, not just facilities for certain groups of people (Dowdell *et al.*, 2025). An emergency is a critical situation caused by an illness, trauma, accident, or anesthesia that, if not treated immediately, will result in disability, loss of body organs, and death. Emergency nursing is a comprehensive nursing service for patients with acute injuries or life-threatening illnesses (Shoukr *et al.*, 2025). Nurse satisfaction in providing nursing services can affect the nursing services, impacting external satisfaction (patients and families). If internal satisfaction (nurses) is reasonable, then the quality of nursing services will also be good, increasing external satisfaction (Van Huizen *et al.*, 2025). The most important form of nursing service is the visible caring behavior of nurses, which is the core or focus of professional nursing practice. Nursing services will result in satisfaction for patients and families if they meet several things, including: in providing community nursing services, being quick, showing empathy for clients, creating a comfortable environment, and being skilled in dealing with clients (Ozçevik Subaşi *et al.*, 2025). The Emergency Unit is one of the units in the hospital that provides services to emergency patients, and it is a series that needs to be organized (Nure *et al.*, 2025). Not all hospitals have a complete emergency department with adequate personnel and sophisticated equipment, which would result in a waste of funds for facilities. Therefore, the development of an emergency unit must pay attention to two aspects: the referral system for emergency patients and the workload in dealing with emergency patients (Ministry of Health) (Pavón Rivera, Antunez Martinez and Morales, 2025).

Emergency services are professional services based on the science and methodology of emergency nursing in the form of comprehensive bio-psycho-social care of clients or patients with actual or potential life-threatening problems, or unexpectedly without or accompanied by uncontrollable environmental conditions (Alkubati *et al.*, 2025). Emergency installation care, in addition to having basic nursing knowledge, requires obtaining additional training in PPGD for emergency patients, ATLS (Advanced Trauma Life Support), and being able to perform resuscitation of all body systems and all principles of nursing service actions in providing patient assistance appropriately, carefully, and quickly (Van de Breevaart *et al.*, 2025). The right is to take action correctly and adequately. Careful is to take action with full interest, attention, patience, responsiveness to the patient's condition, full of precision and caution in acting, and economically according to needs, while fast is immediate action in a short time in receiving and helping patients, agile, agile, and skilled (Berga Congost *et al.*, 2025).

The knowledge and skills of officers play a significant role in determining the success of assisting sufferers or patients (Scheer *et al.*, 2025). In many cases, emergency patients die or become disabled due to errors in helping. Therefore, it is very necessary to equip health workers, especially nurses, with knowledge and skills in accordance with the latest scientific developments (Serra-López *et al.*, 2025). The international standard for handling emergency patients for nurses is knowledge and skills in dealing with problems in the Airway, Breathing, and Circulation, also known as the ABC concept (Fatai *et al.*,

2025). In addition, systematic handling with the Primary & Secondary Survey method is stated in the Initial Assessment & Management. This knowledge and these skills should be given to health workers (nurses) who deal directly with patients. To make these efforts, Pro Emergency held BTLS for Nurse training for hospital nurses, health centers, and clinics. Based on initial data taken in the nursing department of Dr. Palaloi Maros Hospital. Shows that the number of nurses in the Emergency Unit is 37, with a classification of 6 Nurse graduates, 1 Nursing Strata I, 1 D IV, and 29 Nursing Diploma III. In addition, the number of nurses with a work period of ≥ 5 years is 27 people, and nurses who work <5 years are 10 people, while nurses with training certificates are 86.4% and those who do not have are 13.5%.

RESEARCH METHODOLOGY

This study utilized an analytical survey method with a cross-sectional design to investigate factors associated with the knowledge of implementing nurses in handling emergency patients at Dr. Palaloi Maros Regional General Hospital. In this design, both independent variables (education level, length of service, and training attendance) and the dependent variable (knowledge level in emergency care) were measured simultaneously at a single point in time. Population and Sample: The population consisted of all nurses working in the Emergency Unit of Dr. Palaloi Maros Hospital. Given the manageable population size, 30 nurses were selected as respondents using total sampling. Data Collection Techniques. Primary data were obtained through structured questionnaires distributed directly to respondents. The questionnaire assessed demographic characteristics, education level, length of service, training participation, and level of knowledge in handling emergency patients. Data Analysis. The data were processed and analyzed using SPSS statistical software. The analysis included: Univariate analysis to describe each variable's frequency and percentage distribution. Bivariate analysis using the Chi-Square test examines the relationship between independent variables (education, length of service, and training) and the dependent variable (knowledge), with a significance level set at $\alpha = 0.05$.

RESULT

After the data is collected, editing, coding, and tabulation are carried out. Data analysis using the Chi-Square Statistical Test (Pearson Chi-Square) with a significance level of 5% (α 0.05). Univariate analysis is carried out on each variable from the research results. This analysis produces a distribution of the percentage of each variable studied. This analysis includes

Table 1. Univariate Analysis

Age	Frequency	Percent
20-30 years	24	80.0
31-40 years	6	20.0
Education		
High	16	53.3
Low	14	46.7
Length of Service		
Old	12	40.0
New	18	60.0
Training		
Yes	16	53.3
No	14	46.7
Knowledge		
Good	18	60.0
Not Good	**12**	**40.0**

Based on Table 1, most nurses working in the Emergency Unit are in the 20–30 age group (80%). This suggests that the workforce is predominantly young, possibly with less experience, which may influence their emergency handling capabilities and training needs. More than half of the respondents (53.3%) have attained a higher level of education (Diploma III or above), indicating that most nurses have the formal educational background necessary to effectively understand and implement emergency care protocols. A significant proportion of nurses (60%) are relatively new. This may imply limited hands-on experience in emergency settings, which could affect clinical decision-making and patient outcomes without proper supervision and continued training. Slightly more than half of the respondents (53.3%) have participated in emergency care training (e.g., BTCLS). However, the remaining 46.7% have not, which may highlight the need for improved access to structured training to ensure standardized emergency care knowledge. Most nurses (60%) demonstrated sound knowledge in handling emergency cases. However, the remaining 40% were categorized as having inadequate knowledge, emphasizing the ongoing need for professional development and refresher training.

Table 2. Relationship between education, length of service, and training with nurses' knowledge in handling emergency patients

Independent Variable	Category	Knowledge Level: Good n (%)	Knowledge Level: Not Good (%)	Total n (%)	p-value
Education	High	13 (81.2%)	3 (18.8%)	16	0.011
	Low	5 (35.7%)	9 (64.3%)	14	
Length of Service	New (<5 years)	11 (91.7%)	1 (8.3%)	12	0.007
	Old (≥5 years)	7 (38.9%)	11 (61.1%)	18	
Training	Yes	13 (81.2%)	3 (18.8%)	16	0.014
	No	5 (35.7%)	9 (64.3%)	14	

This table summarizes the bivariate analysis of three key variables related to nurses' knowledge: Education level: Nurses with higher education show significantly better knowledge in emergency handling ($p = 0.011$). Length of service: Newer nurses (<5 years) exhibited better knowledge compared to those with longer service ($p = 0.007$), suggesting recency of education or recent training may play a role. Training: Participation in emergency care training (BTCLS) is associated with significantly higher knowledge levels ($p = 0.014$).

Based on the results of the bivariate analysis, it can be concluded that there is a significant relationship between education level, length of service, and participation in emergency training and nurses' knowledge of handling emergency patients at Dr. Palaloi Maros Regional General Hospital. Education Level: Nurses with higher formal education (Diploma III and above) demonstrate significantly better knowledge in emergency management. This highlights the importance of formal academic preparation in developing clinical competence. Length of Service: Interestingly, nurses with shorter work experience (<5 years) had better knowledge scores than those with longer service. This may be due to more recent exposure to updated medical knowledge or training, indicating the necessity of continuous learning for experienced staff. Training Participation: Nurses who have participated in emergency care training, such as BTCLS, exhibited higher knowledge levels than those who have not. This underlines the essential role of structured and regular training in enhancing nurses' practical skills and decision-making abilities in emergencies. The study suggests that education, recent experience, and continuous training are key determinants of nurses' knowledge in managing

emergency patients. Hospitals are therefore encouraged to support and facilitate ongoing professional development programs to ensure high-quality emergency care services.

DISCUSSION

Nurses' knowledge in handling emergency patients is crucial in ensuring high-quality healthcare services, especially in critical care settings such as emergency departments. This study aimed to examine the relationship between factors such as education level, length of service, emergency training, and the knowledge of implementing nurses at Dr. Palaloi Maros Regional General Hospital. The findings of this study revealed significant associations between all three independent variables and the level of nurse knowledge in managing emergencies.

The role of education in enhancing knowledge. The analysis showed that nurses with higher educational qualifications demonstrated significantly better knowledge in emergency patient handling than those with lower education levels. Specifically, 81.2% of nurses with a higher education background (Diploma III or above) possessed good knowledge, whereas only 35.7% of nurses with lower education levels reached the same level of understanding. This result is consistent with the consensus in the literature that formal education contributes to cognitive development, clinical reasoning, and technical competence among healthcare providers.

Higher education provides foundational knowledge and exposes nurses to evidence-based practice, critical thinking, and structured clinical decision-making. It prepares them for complex scenarios such as trauma care, cardiac arrest management, and multi-system resuscitation, which are common in emergency settings (Cihan *et al.*, 2025). Moreover, educated nurses tend to have greater access to academic resources and professional networks that help maintain their knowledge and skills up-to-date. Despite this, it is also important to note that a small proportion (18.8%) of nurses with higher education still demonstrated inadequate knowledge (Bobb *et al.*, 2024). This may be due to a lack of continued learning, low motivation, or limited real-life exposure to emergency scenarios. Knowledge retention and application are not solely determined by educational level but also by the nurse's ongoing commitment to professional growth and reflective practice (Weber and Nørgaard, 2024).

Work Experience and Its Unexpected Impact. One of the more surprising findings in this study is the inverse relationship between length of service and knowledge level. Nurses with shorter work experience (<5 years) were found to have better knowledge (91.7%) compared to those with longer service (≥5 years), where only 38.9% demonstrated good knowledge. Although this seems counterintuitive, several plausible explanations support this observation. Firstly, nurses who have recently entered the profession are more likely to have completed formal education with contemporary curriculum standards, including updated protocols for emergency care. These nurses may also have greater familiarity with recent clinical guidelines, simulation training, and newer technologies used in emergency response. Secondly, newer nurses often undergo orientation and mandatory training programs upon hiring, reinforcing essential skills and knowledge, particularly in high-risk units like the emergency department (Fang *et al.*, 2024).

In contrast, experienced nurses may not receive the same level of structured re-training unless it is institutionally mandated (Van Huizen *et al.*, 2024). Over time, without regular refresher courses or clinical audits, even seasoned practitioners may fall behind on the latest best practices, especially in fast-evolving fields such as emergency medicine

(Kefyalew *et al.*, 2024). In addition, cognitive complacency, burnout, or over-reliance on experience may hinder the adoption of new protocols and learning. However, this should not overshadow the value of experience in nursing practice (Lindroos, Sengpiel and Elden, 2024). Length of service still contributes significantly to clinical judgment, intuition, and confidence. The key implication here is the need for continuous professional development (CPD) for all nurses, regardless of seniority, to ensure that practical experience is aligned with current knowledge standards (Adeyemi *et al.*, 2024).

Impact of emergency training programs. Participation in structured training programs, such as Basic Trauma and Cardiac Life Support (BTCLS), strongly correlates with nurses' knowledge. Of those who received training, 81.2% had good knowledge, while only 35.7% of untrained nurses reached the same standard. This emphasizes the importance of practical and skill-based learning in supplementing formal education and daily clinical experience. Emergency training equips nurses with hands-on skills for effective triage, airway management, bleeding control, cardiac resuscitation, and rapid decision-making under pressure. Training also fosters confidence and improves teamwork in critical situations (Wijayanti *et al.*, 2025). Given that emergencies often involve life-threatening scenarios with narrow time margins, nurses must be able to respond accurately and efficiently (Cernuda Martínez, Castro Delgado and Arcos González, 2024).

Interestingly, a small proportion of trained nurses (18.8%) still performed poorly in the knowledge assessment. This could suggest gaps in the training implementation, such as a lack of follow-up, limited simulation exposure, or passive participation. It might also indicate a need to evaluate the quality and frequency of such training. On the other hand, some untrained nurses (35.7%) performed well, potentially due to strong academic backgrounds, self-study, mentorship, or informal learning through clinical exposure. Nonetheless, the data strongly support the idea that regular and standardized emergency training is essential. Hospitals should institutionalize such programs and incorporate performance monitoring to evaluate their impact on clinical outcomes.

Synthesis with existing literature. The study's findings align with existing nursing and emergency care research. Knowledge in nursing is not static; it requires continuous development through education, training, and experience (Mulyanti, Yulis and Hairuddin, 2024). The findings also echo the theory of adult learning by Knowles, which suggests that adults learn best when the content is relevant to their work and when they can immediately apply it (Suriyani *et al.*, 2023). Emphasizes that knowledge is influenced by education, personal motivation, environment, and experience. All these factors were indirectly reflected in the present study's sample (Achmad, 2023). The correlation between education, experience, and knowledge is not merely linear but dynamic and context-dependent. Moreover, this study supports the Ministry of Health's recommendation that all nurses working in emergency departments should receive special certification and training in emergency handling (Savira *et al.*, 2021). The findings add to the growing body of evidence advocating for policies prioritizing the training and development of healthcare workers, especially in high-acuity areas.

Practical Implications

The practical implications of this study are clear. First, healthcare institutions, particularly hospitals with emergency units, must invest in regular, comprehensive training programs for their nursing staff. These trainings should be mandatory and tailored to the clinical demands nurses face in emergency care. Second, a competency-based

approach should be adopted for both new and experienced nurses. Periodic assessment of emergency skills and knowledge must be integrated into performance evaluations to ensure continued readiness. Third, academic institutions should continuously review and update their nursing curricula to reflect changes in emergency care standards and evidence-based practices. A partnership between hospitals and educational institutions can bridge the gap between theory and clinical practice through internships, simulations, and continuing education. Lastly, motivation plays a critical role. Institutional leaders must foster a culture of learning and professional growth. Recognition, incentives, and supportive supervision can help maintain high levels of engagement among nursing staff.

CONCLUSION

A study reveals that education level, length of service, and emergency training are significant factors influencing nurses' knowledge in handling emergency patients. Surprisingly, newer nurses and those with training showed better knowledge than their more experienced but untrained counterparts, indicating that updated education and continuous learning play a pivotal role in clinical preparedness. These findings emphasize the need for structured training, consistent professional development, and evidence-based policies to support nursing competency in emergency care settings.

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Conflict of Interest

There are no potential conflicts of interest relevant to this article.

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