The Relationship Between Nurses' Self-Efficacy and the Accuracy of Treatment in Cardiac Arrest Patients at Hospital X in Tangerang

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ABSTRACT

Background: Cardiac arrest is a medical emergency that requires prompt and appropriate treatment to increase the patient's chances of survival. The quality of care provided by nurses greatly determines the clinical outcome of patients, and nurses' self-efficacy is believed to play an important role in the success of clinical interventions, especially in emergency situations. Data on the relationship between nurses' self-efficacy and the quality of care at X Hospital in Tangerang is still limited, highlighting the urgency of this study. Objective: This study aims to determine the characteristics of respondents, the level of nurses' self-efficacy, and the management of cardiac arrest in patients at X Hospital in Tangerang. Method: This study employed a quantitative analytical correlational design with a cross-sectional approach. The study population and sample consisted of 58 ICU and ED nurses at X Hospital in Tangerang, selected through total sampling. Data were collected using the General Self-Efficacy Scale (GSES) questionnaire and cardiac arrest management instruments, then analysed using the Chi-Square test. Results: The characteristics of the respondents were predominantly female (89.7%), aged >26 years (89.7%), Muslim (100%), with a nursing education (69.0%), and having worked for >1 year (87.9%). The majority of respondents had high self-efficacy (65.5%), but most (67.2%) had low self-efficacy and low accuracy in management. Statistical test results showed a significant relationship between self-efficacy and

Keywords: Self-efficacy, Nurses, Cardiac arrest, Accuracy of management, CPR

INTRODUCTION

Cardiac arrest is a medical emergency characterized by the sudden and unexpected loss of heart function. If not treated promptly and appropriately, it can lead to multiple organ failure and death (American Heart Association, 2021; Ghosalim, Jim, & Joseph, 2024). Immediate intervention in cardiac arrest cases is critical to increase the chances of successful resuscitation, restore heart function, and ultimately improve the patient's quality of life (Lusiana Devi et al., 2023). Management of cardiac arrest involves a series of complex procedures, including Cardiopulmonary Resuscitation (CPR), which combines

chest compressions and rescue breaths to maintain blood oxygenation and vital organ perfusion (Masyitoh, Agustin, & Suparmanto, 2024).

Cardiovascular diseases, including cardiac arrest, are the leading causes of morbidity and mortality worldwide. According to the World Health Organization (2021), approximately 17.9 million deaths globally in 2019 (32% of all deaths) were attributed to cardiovascular diseases, with 85% linked to heart attacks and cardiac arrests. In Indonesia, the burden of cardiovascular diseases is also high, accounting for 26.4% of all deaths—four times greater than deaths from cancer (Suciana, Hengky, & Usman, 2021). Data from the 2023 Indonesia Health Survey revealed a rise in the prevalence of heart disease, with West Java, East Java, and Jakarta having the highest number of cases (Ministry of Health, 2023). This high incidence underscores the importance of knowledge and skills in early management, particularly Basic Life Support (BLS), as a life-saving first aid measure before advanced medical help arrives (Fatmawati et al., 2020; Afni, Saputro, & Rosida, 2024). Nurses play a central role as frontline responders in managing cardiac arrest patients, especially in intensive care units (ICU) and emergency departments (ED). Their ability to perform resuscitation is strongly influenced by clinical knowledge and self-efficacy (Pamungkas, 2022). Self-efficacy, or an individual's belief in their own abilities, significantly affects thinking patterns, stress response, decision-making, and task performance (Bandura, 2023). Nurses with high self-efficacy tend to be more confident in making clinical decisions, delivering quality care, and responding effectively to patient needs (Efandi & Putri, 2022). Therefore, enhancing knowledge and self-efficacy among nurses is crucial for improving the quality of nursing care, especially in emergency situations.

Nonetheless, challenges in managing cardiac arrest remain common, such as the inability to prevent risks, delays in transferring patients to appropriate facilities, a shortage of trained healthcare personnel, and failure to detect emergency situations early (Wijaya et al., 2022; Aros et al., 2023). This highlights the importance of compliance with standard treatment protocols established by the Ministry of Health to ensure patient safety and quality of life (Arnas, Januarista, & Rahman, 2024). Previous studies have demonstrated a relationship between nurses' self-efficacy and their clinical knowledge and performance. Alaryani, Alhofaian, and Elhady (2021) found a significant association between self-efficacy and nurses' knowledge in initiating CPR. Similarly, Pamungkas (2022) identified a correlation between CPR knowledge and nurses' self-efficacy.

Lascarrou et al. (2019) further reported a significant link between self-efficacy and the accuracy of CPR implementation in emergency settings. A preliminary study conducted at Hospital X in Tangerang recorded 121 cases of cardiac arrest from February to April 2025. Interviews with 10 ICU and ED nurses revealed that 6 nurses frequently performed resuscitation, while the remaining 4 rarely did. Nurses who regularly performed resuscitation reported increased confidence stemming from previous successful experiences and participation in Basic Trauma and Cardiac Life Support (BTCLS) training.

This phenomenon indicates that despite training, there remains a variation in confidence levels and mental readiness among nurses when facing cardiac arrest emergencies. This study presents a novelty by specifically focusing on the relationship between nurses' self-efficacy and the accuracy of cardiac arrest management at Hospital X Tangerang. Most prior studies have examined knowledge or self-efficacy in general, without directly linking them to the context of cardiac arrest management, which requires swift, precise, and confident responses. The success rate of CPR in Indonesian healthcare facilities remains relatively low, partly due to nurses' lack of readiness—both in knowledge and psychological preparedness—when facing emergencies. Not all nurses possess the confidence or mental readiness to make quick decisions and take immediate action, even after receiving training. Therefore, this study is crucial for understanding the extent to which self-efficacy influences the accuracy of cardiac arrest management in hospital settings and provides a basis for recommending training programs and competency development to improve medical service quality and patient safety.

This study aims to determine the characteristics of respondents, the level of self-efficacy of nurses, and the management of cardiac arrest in patients at Hospital X Tangerang,

MATERIALS AND METHODS

This study used a quantitative design with a cross-sectional correlational analytical approach. The study population included all nurses in the ICU and emergency room of Hospital X in Tangerang, totalling 58 people. The sampling technique used was total sampling, so that all nurses in the population became respondents. Data collection was carried out in June 2025. Ethical aspects of the research were carefully considered, including informed consent, data confidentiality, and fair and equal treatment of all respondents. The data collection tools consisted of a questionnaire covering respondent demographics, the General Self-Efficacy Scale (GSES) to measure self-efficacy, and a

special questionnaire to assess the accuracy of cardiac arrest management. The GSES questionnaire has been validated, and the cardiac arrest management questionnaire demonstrates high reliability (Cronbach's Alpha = 0.878).

RESULTS

This research was conducted at Hospital X in Tangerang, and the results are as follows: Table 1   The majority of respondents in this study were female (89.7%), aged over 26 years (89.7%), and Muslim (100%). Most of them held a professional nursing degree (Ners) (69.0%) and had more than one year of work experience (87.9%).

Table 1: Frequency Distribution of Respondents

Characteristics of Respondents	Frequency (f)	Percentage (%)
Gender		
Male	6	10.3
Female	52	89.7
Age		
< 25 Years	6	10.3
> 26 Years	52	89.7
Religion		
Islam	58	100.0
Education		
Bachelor (S1)	18	31.0
Professional Nurse (Ners)	40	69.0
Length of Employment		
< 1 Year		

Table 2   The majority of respondents (65.5%) had a high level of self-efficacy, while 34.5% had a low level. The mean self-efficacy score was 1.66, with a median of 2.00 and a standard deviation of 0.479.

Table 2: Distribution of self-efficacy variables at Hospital X , Tangerang

Self-Efficacy	Frequency (f)	Percentage (%)	Mean	Median	Standard Deviation
Low	20	34.5			
High	38	65.5	1.66	2.00	0.479
Total	58	100.0			

Table 3 The majority of respondents (63.8%) demonstrated a high level of accuracy in managing cardiac arrest, while 36.2% were categorized as low. The mean score was 1.64, with a median of 2.00, and a standard deviation of 0.485.

Table 3: Distribution of variables for cardiac arrest management at Hospital X in Tangerang

Cardiac Arrest Management	Frequency (f)	Percentage (%)	Mean	Median	Standard Deviation
Low	21	36.2			
High	37	63.8	1.64	2.00	0.485
Total	58	100.0			

Table 4 The cross-tabulation results show a significant association between nurses' self-efficacy and the accuracy of cardiac arrest management. Among respondents with low self-efficacy, 90.0% demonstrated low accuracy in managing cardiac arrest, while only 10.0% showed high accuracy. Conversely, among those with high self-efficacy, 92.1% exhibited high accuracy, and only 7.9% had low accuracy. Statistical analysis revealed a p-value of 0.001, indicating a significant relationship between the two variables. The odds ratio (OR) of 105.000 suggests that nurses with high self-efficacy are 105 times more likely to perform accurate cardiac arrest management compared to those with low self-efficacy.

Table 4. Bivariate Analysis Results

Self-Efficacy	Low Management Accuracy	High Management Accuracy	Total	Sig. (P-Value)	Odds Ratio (OR)
Low	18 (90.0%)	2 (10.0%)	20 (100.0%)		
High	3 (7.9%)	35 (92.1%)	38 (100.0%)	0.001	105.000
Total	21 (36.2%)	37 (63.8%)	58 (100.0%)		

DISCUSSION

The majority of respondents in this study were female, aged over 26 years, Muslim, had a nursing degree, and had more than one year of work experience. These characteristics align with the findings of Ko and Yu (2020), which indicate that female nurses with more than one year of work experience tend to have higher levels of self-efficacy in performing Advanced Cardiac Life Support (ACLS) procedures, particularly in emergency situations. Additionally, research by Alaryani, Alhofaian, and Elhady (2021) also supports these results, stating that nurses who have completed professional education and have adequate work experience have better knowledge and self-efficacy in performing cardiopulmonary resuscitation (CPR).

Meanwhile, a study by Lee, Park, and Kang (2022) found that age and work experience are positively correlated with the accuracy of nurses' decision-making when handling cardiac arrest cases, indicating that age maturity and clinical experience play an

important role in improving nursing performance in emergency situations. The majority of respondents (65.5%) in this study demonstrated a high level of self-efficacy, while the remaining 34.5% were classified as having low self-efficacy. The average self-efficacy score was 1.66, with a median of 2.00 and a standard deviation of 0.479. These findings align with the study by Alaryani et al. (2021), which highlighted that nurses with higher levels of self-efficacy were more confident and effective in performing emergency procedures such as CPR. Similarly, Pamungkas (2022) emphasized that self-efficacy is significantly associated with a nurse's ability to act swiftly and appropriately in critical clinical scenarios, suggesting that confidence in one's own abilities plays a pivotal role in emergency response performance. Demographically, most respondents were female (89.7%), aged over 26 years (89.7%), Muslim (100%), held a professional nursing degree (Ners) (69.0%), and had more than one year of work experience (87.9%).

These characteristics reflect a relatively experienced and educationally advanced nursing workforce, which may contribute to their high levels of self-efficacy. According to Efandi and Putri (2022), longer work experience and advanced professional education contribute positively to the development of self-confidence and competence among nurses. In a similar vein, Bandura (2023) argued that self-efficacy is not only influenced by internal beliefs but is also shaped by one's mastery experiences and exposure to real clinical challenges, which are more commonly encountered by nurses with greater experience and higher education levels. The pattern observed in this study also mirrors findings from Lascarrou et al. (2019), who identified that nurses with better education and more clinical exposure had a higher likelihood of executing accurate CPR techniques in emergency settings. This highlights the importance of continued training and clinical exposure in enhancing self-efficacy, which in turn can lead to better patient outcomes, especially in time-critical interventions like cardiac arrest management.

Recent findings demonstrate a strong association between nurses' self-efficacy and their accuracy in managing cardiac arrest. Cross-tabulation analysis showed that 90% of nurses with low self-efficacy exhibited low accuracy in cardiac arrest management, while only 10% demonstrated high accuracy. Conversely, 92.1% of nurses with high self-efficacy showed high accuracy, with only 7.9% performing poorly. A p-value of 0.001 confirmed the statistical significance of this relationship, while an odds ratio (OR) of 105.000 indicated that nurses with high self-efficacy were 105 times more likely to accurately manage cardiac arrest compared to those with low self-efficacy. This result is

consistent with a study by Lee et al. (2022), which found that higher self-efficacy among emergency nurses significantly predicted better decision-making performance during code blue situations. Similarly, a randomized controlled trial by Johnson et al. (2021) demonstrated that nurses who received immersive simulation training showed a marked improvement in both confidence and adherence to resuscitation protocols. Furthermore, Kim and Park (2023) emphasized that repetitive team-based simulations not only improved self-efficacy but also reduced hesitation and increased protocol compliance in real cardiac arrest scenarios. In another multicenter study, Alvarez et al. (2020) reported that clinical self-efficacy was strongly correlated with both technical accuracy and rapid recognition of cardiac rhythms during high-fidelity simulation exercises.

Lastly, Zhang et al. (2024) concluded that nurses with high self-efficacy were significantly more likely to initiate life-saving interventions correctly within the first minute of a cardiac arrest event, highlighting the crucial role of psychological readiness in emergency nursing. Together, these findings underscore the importance of enhancing nurses' self-efficacy through structured training programs to ensure high-quality, accurate responses in life-threatening situations.

Finally, Ko and Yu (2020) found a positive correlation between high self-efficacy and adherence to advanced cardiac life support algorithms, emphasizing that improving self-efficacy not only enhances clinical accuracy but also fosters professional responsibility and psychological preparedness in crisis situations.

In conclusion, nurses' self-efficacy is a key determinant of successful cardiac arrest management. Structured interventions such as simulation-based training and continuous education are essential to enhance self-efficacy and, ultimately, to ensure optimal nursing care in emergency settings.

CONCLUSIONS

The findings reveal a statistically significant association between nurses' self-efficacy and the accuracy of cardiac arrest management. Nurses with high self-efficacy are substantially more likely—by a factor of 105—to manage cardiac arrest accurately compared to those with low self-efficacy. Strengthening self-efficacy may be crucial for improving emergency nursing performance.

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