KNOWLEDGE, ATTITUDE AND PRACTICES OF CRITICAL CARE NURSES REGARDING CARDIOPULMONARY RESUSCITATION AT TERTIARY CARE HOSPITAL PESHAWAR

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ABSTRACT

Cardiopulmonary resuscitation (CPR) is a vital emergency technique, crucial for improving survival outcomes after cardiac arrest. High-quality CPR is essential, especially in critical care units where patients are at high risk. Nurses, often the first responders in these scenarios, must be proficient in CPR to enhance patient survival and quality of life. Proper CPR techniques are necessary to avoid serious complications, making proficiency critical in emergencies. This study evaluated the knowledge, attitudes, and practices (KAP) of critical care nurses regarding CPR at tertiary Care hospitals in Peshawar. A descriptive cross-sectional design was employed, with 169 structured questionnaires administered and analyzed using SPSS version 25.0. The study included responses from nurses at Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), and Hayatabad Medical Complex (HMC). Results indicated that 78% of respondents had good knowledge of CPR, 76% demonstrated good CPR practices, but 48% had a negative attitude towards it. The data revealed a significant correlation between knowledge and the practice of CPR. The findings highlight that while most intensive care nurses possess excellent CPR knowledge and practices, their attitudes towards CPR need improvement. The study concludes that despite having expertise in critical care settings, nurses need more training in Basic Life Support (BLS). Hospitals should foster a culture that emphasizes the importance of CPR for better patient outcomes. Integrating simulation scenarios in CPR training can provide a safe environment for nurses to enhance their skills. This approach can address gaps in knowledge and attitudes, ultimately leading to improved CPR performance and patient survival rates. Overall, the study underscores the need for continuous education and supportive practices to ensure nurses are fully prepared to perform effective CPR, thus saving lives in critical situations.

Key words: CPR, Resscitation, Bls.

INTRODUCTION

1 Overview

Cardiopulmonary arrest is a common emergency that can be fatal. It is a life-threatening condition caused by an abrupt stop in blood flow that can result in catastrophic consequences and eventually death. Heart and lung resuscitation, or CPR, is a crucial and essential medical technique in emergency medicine. Patients are given a combination of rescue breathing and chest compressions during this procedure. Someone might be having a heart attack.(Shah, Jan, Hussain, Gul, & Naila, 2019). The outcome of cardiopulmonary resuscitation after cardiac arrest is largely dependent on how well it works.(Perkins et al., 2008).

The cornerstone of initial therapy in cases of cardiac arrest is exceptional or superior quality

cardiopulmonary resuscitation, as described by the American Heart Association, 2015 Basic Life Support, and Advanced Cardiac Life Support recommendations. It has been demonstrated that receiving high-quality CPR increases cardiac arrest survival.(Vincelette, Lavoie, Fortin, & Quiroz-Martinez, 2018)

With over 30% of all deaths coming from cardiovascular disorders, they are a major cause of death worldwide. A successful resuscitation requires prompt detection of cardiac arrest, activation of an emergency response system, initiation of chest compressions, prompt defibrillation, effective advanced life support, and thorough post-cardiac arrest treatment. (Nestor Tomas & Zuze A Kachekele, 2023)

Regretfully, medical science department curricula do not clearly outline theoretical and practical training in CPR operations, and graduates of universities have varying degrees of expertise in this area based on their areas of interest. Since nurses tend to patients who are experiencing cardiac arrest as soon as possible, they should be well- trained in conducting CPR. (Kuchaki, Taheri, Esfahani, & Erfanifam, 2022)

A minimum of three hours are devoted to debating problems with the CPR algorithm in the context of pathophysiology, with one and a half of those hours spent in a manikin-simulated setting. The nursing personnel's training centers' internal regulations govern both the distribution of hours and the attainment of educational outcomes .(Kwiecień-Jaguś, Mędrzycka-Dąbrowska, Galdikienė, Via Clavero, & Kopeć, 2020)

It is critical that nurses maintain their knowledge and abilities because in hospitals, they are usually the first medical staff members to recognize CPR and initiate the chain of survival. (Tíscar-González, Blanco-Blanco, Gea-Sánchez, Molinuevo, & Moreno-Casbas, 2019)

One of the leading causes of unexpected deaths worldwide is cardiac arrest. While cardiac arrest outside of an institution happens more frequently, cardiac arrest within an institution remains a serious medical emergency. Patients in critical condition who are in danger of cardiac arrest receive care in critical care units. Nurses must be proficient in cardiopulmonary resuscitation in order to enhance a patient's chances of survival and quality of life after suffering a cardiac arrest(Botes & Moepeng, 2020).

Healthcare professionals' knowledge of CPR is heavily impacted by their training, and it is a key factor in determining how well they perform CPR. Because of this, regular CPR training is necessary.Raising the bar on care requires being aware of the research supporting every intervention and drug.(Abualfraj, Halawani, Alshehri, Hakim, & Hamam, 2022)

The capacity of nurses to react promptly and efficiently in the event of a cardiac arrest depends on their competence, readiness, and current knowledge of the emergency life-saving CPR procedure. In order to increase patient survival, it was necessary to evaluate nurses' proficiency in CPR (Macias, 2019).

It has been informed that the client's survival greatly depends on cardiac resuscitation. Because they are closer to the patient at that moment in a hospital setting, critical care nurses have a tremendous need to be thoroughly trained and skilled in performing CPR. (Akber et al., 2020)

Cardiopulmonary resuscitation (CPR) involves identifying cardiac arrest and administering CPR techniques to maintain life until either the patient makes a full recovery or is transferred to a facility with advanced life support (ALS).(Khan et al., 2023) Worldwide demand for CPR training is rising. Standardized resuscitation training is not yet commonplace in developing nations like our own, and no such laws exist. There aren't many studies from poor nations that discuss how informed, knowledgeable, and proficient medical personnel are in performing CPR.(Mahmood, 2020)

This research can inform the development of targeted training program that addressed specifics knowledge gaps and provide practical skills training relevant to the icu setting, ensuring nurses feel adequately prepared for critical emergencies.

LITERATURE REVIEW
2.1 Search Strategy
Utilizing various databases, including Pub Med, Semantic Scholar, Science Direct, Web of Science, and Google Scholar, various search techniques were employed to locate pertinent literature. The terms knowledge, attitude, practices, icu nurses, and CPR were utilized as key words or mesh words in the literature investigation. Articles that were first obtained from the database using a variety of criteria, including full text, English language, and the most recent articles with a time limit of 2017 to 2023.

2.2   literature Review

Nurses feel pleased when patients regain awareness after resuscitation, led by a modified version of Lawtons' quality of life model and utilizing the theme analysis approach recommended by Braun & Clark. When the opposite occurs, people often experience psychological torment and unpleasant feelings. Additionally, contextual factors such when to begin CPR after a cardiac arrest, the availability and suitability of medications and equipment, workplace ergonomics, and institutional norms all had an impact on the quality of resuscitation techniques carried out by nurses.It is imperative that nurses make every attempt to get more education in specialized fields like critical care and emergency nursing. This will enable them to align their CPR practices with the latest evidence-based standards.(Amoako-Mensah, Achempim-Ansong, Gbordzoe, Adofo, & Sarfo, 2023)

A study was conducted in Debre Markos Referral Hospital in early 2019 by using a structured questionnaire knowledge, attitudes, and practices of medical professionals concerning adult cardiac arrest care at. Results showed that most healthcare professionals had low knowledge and unsafe practices regarding CPR, with few understanding CPR techniques, defibrillation, or rescue breathing. Many respondents were unaware of CPR specifics and the distinction between primary and secondary cardiac arrest, and a majority felt inadequately skilled despite supporting CPR training in curricula. Recommendations included CPR and CCR simulation training, refresher sessions, development of local guidelines, and availability of defibrillators and emergency drugs. Of the 352 surveyed, 324 participated (92% response rate), predominantly male (63%), with 77.8% lacking sufficient CPR knowledge and 88.9% performing CPR unsafely.(Abebe, Zeleke, Assega, Sefefe, & Gebremedhn)

Another study at a Namibian training hospital revealed significant deficiencies in nurses' knowledge, attitudes, and practices regarding cardiopulmonary resuscitation (CPR), indicating a critical need for mandatory CPR training. Findings showed a strong connection between inadequate knowledge and poor CPR practices, particularly influenced by the department in which nurses worked. The study highlighted that inexperience, insufficient education, and lack of understanding contribute to subpar CPR techniques among nurses.

Recommendations include regular CPR training renewals and refresher courses mandated by hospital administration to ensure nurses maintain the necessary skills and knowledge for effective emergency response. The results emphasize that a nurse's work environment significantly impacts their emergency care attitudes and practices..(Nestor Tomas & Zuze A. Kachekele, 2023) A cross-sectional study conducted between March 20 and April 20, 2021, assessed factors influencing CPR techniques among nurses at Tepi University Teaching Hospital, Gebretsadik Shawo Hospital, and Tepi General Hospital. Nurses with good CPR practices answered at least seven CPR-related questions correctly. Data analysis using SPSS version 23 and EpiData version 4.4 revealed that only 31.8% of nurses demonstrated proficient CPR practices. The study found that having a nursing degree, 6-10 years of experience, working in an emergency department, and regular CPR involvement were significant predictors of good CPR practice. The findings highlight the need for efforts to improve CPR proficiency among nurses(Guteta, 2022) A cross-sectional, descriptive, and correlational study examined the relationship between nurses' knowledge and self-efficacy in the early initiation of CPR and automated defibrillation for cardiac arrest patients at King Abdulaziz University Hospital (KAUH) in Jeddah, Saudi Arabia. The study included nurses from various departments such as outpatient clinics, critical care units, emergency rooms, medical departments, obstetrics and gynecology, pediatrics, and surgical departments. Convenience sampling ensured comprehensive observation of all staff nurses. The ability of nurses to perform CPR-D effectively is influenced by their empowerment and education levels, which are key indicators of their efficacy in such situations. Enhancing nurses' knowledge and boosting their confidence in handling clinical scenarios is crucial. The findings revealed that 61.3% of respondents had moderate knowledge (mean score: 13.659 ± 2.175), and 63.8% demonstrated strong self-efficacy (mean score: 44.627 ± 58.397). Self-efficacy was highest in responding and rescuing, and lowest in debriefing and recording. There was a significant positive correlation between knowledge and self-efficacy ($p < 0.001$; $r = 0.207$)(Alaryani, Alhofaian, & Elhady, 2021).

RESEARCH METHODOLOGY

The study was a descriptive cross-sectional study conducted at LRH, KTH, and HMC tertiary care hospitals in Peshawar over six months. The sample included 169 critical care nurses selected through convenience sampling, with ethical approval obtained from Ayub International College of Nursing and informed consent from participants. Adopted Questioner used to identify Knowledge is familiarity, awareness, or understanding acquired through experience. In this study, CPR knowledge was measured with 11 questions, where scores ≥ 70% indicated acceptable knowledge, and scores < 70% indicated inadequate knowledge. This pertains to beliefs, expectations, and values affecting patient management. Attitudes were measured with 10 questions, where scores ≥ 70% indicated a favorable attitude, and scores < 70% indicated an unfavorable attitude. Practice involves repeatedly performing a behavior to master a skill. Practices were assessed with 9 questions, with scores rated as poor (< 45%), fair (45%-60%), good (60%-75%), and excellent (> 75%)

RESULT

One hundred and sixty-nine 169 (98.8%) overall response score (ICUs). This study included nurses, and Table 1's demographic data indicated that most of the participants were between the ages of 20 and 29. Majority of female nursing staff 131 (77%) participated, and male nursing staff 38 (22.4%) participated and mostly BSN degree holder were included this study 104 (61.2%), diploma RN 61 (35.9%) and MSN 4 (2.4%).

Table 1:   Participants divided into categories
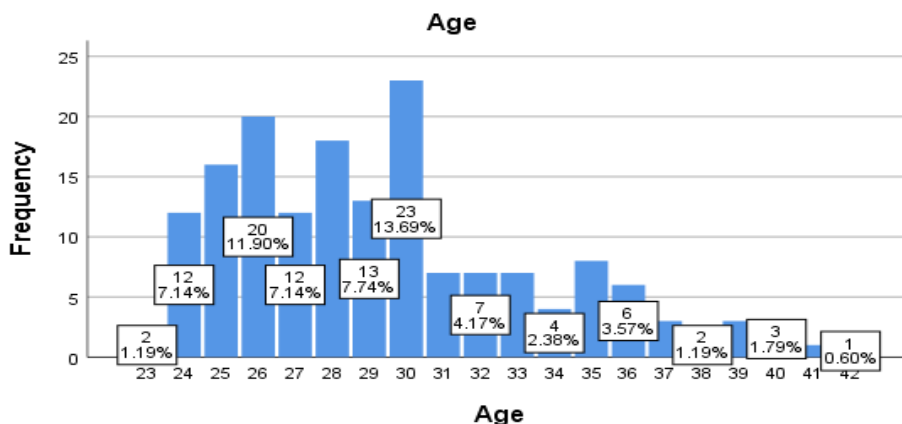
AGE

Figure 1

Figure-1   A total of 169 icu Nurses are participated for this study from 23 years to 41 years of age with more individuals having 30, 13.6% years of age. The mean is 29.52 with the SD 4.285.
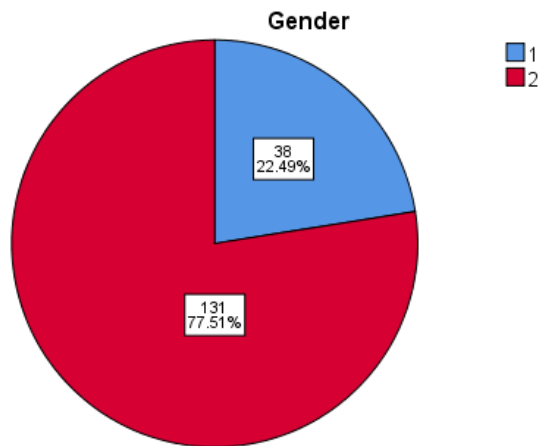
GENDER

Figure -2
Figure-2: In this study the female staff frequency is 77.5% and the male participation is 22.5%.its mean 1.78 with 0.419 that there were male Nurses are less than female Nursing staff.
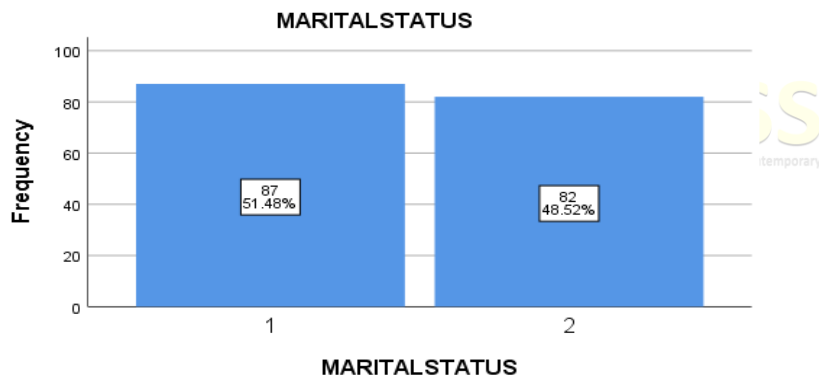
MARITAL STATUS

Figure -3
In this study results shows that 51.5% married staff are participated and 48.5% unmarried staff are participated. Its mean 1.49 with   SD 0.501.
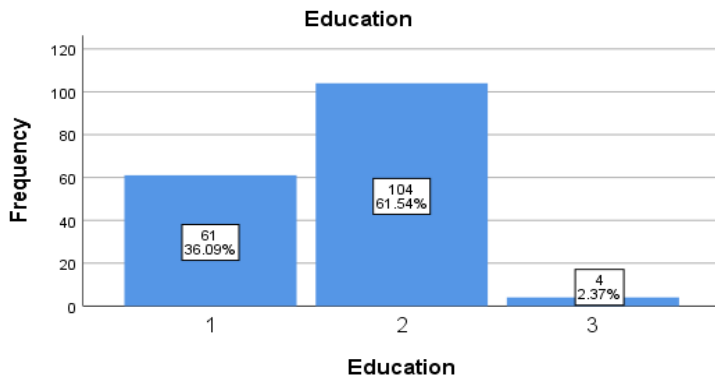
EDUCATION

Figure -4: In this study nursing staff had Bachelor of Nursing Degree (BSc), are 61.5% and the diploma Register Nurses are 36.1% are participated and MSN participants are 2.37%. Mean is 1.66 with SD 0.522.

Table 3: Responses on knowledge of cardiopulmonary resuscitation

QUESTIONS		Responses		n = 169
		YES %	NO %	
Have you received any training on cardiopulmonary resuscitation	V 7	144 (85.2%)	25 (14.8%)	
CPR support and maintain breathing and circulation for an infant, child, Or adolescent	V 8	168 (99.4%)	1 (0.6%)	
CPR should be done on every person in cardiac emergency	V 9	92 (54.4%)	77 (45.6%)	
CPR training and retraining is necessary for Nurses	V 10	158 (93.5%)	11 (6.5%)	
CPR should be conducted on patient immediately before informing the Doctor	V 11	147 (87%)	22 (13%)	
The compression of ventilation ratio for the lone rescuer giving CPR to victims of any age is 20:1 ?	V 12	45 (73.4%)	124 (26.6%)	

Chest compression during cardiopulmonary resuscitation stimulate 25% Heart functioning	V 13	99 (58.6%)	70 (41.4%)	
I take 25 seconds to check for pulse of an adult before commencing CPR The pulse of an adult with cardiac emergencies should be checked at the carotid artery	V 14	104 (61.5%)	65 (38.5%)	
Chest compression should be 7 inches (10 cm) deep for an adult during CPR	V 15	103 (60.9%)	66 (39.1%)	
Chest compression during CPR should be done at the center of the chest On lower half of the breast	V 16	154 (91.1%)	15 (8.9%)	
A 2 – rescuer performing CPR should switch role after each cycle	V 17	155 (91.7%)	14 (8.3%)	

Table 4: mean score on level of knowledge of cardiopulmonary resuscitation

LEVEL OF NURSES KNOWLEDGE ABOUT CARDIOPULMONARY RESUCITATION				Mean	S.D.	Min.	Max.
Results	**Range score**	**Frequency**	**Percentage**				
Good	19.0—24.0	124	78%				
Poor	12.0—18.0	45	22%	1.263	0.362	15.0	24.0
Total		169	100%				

Knowledge of cardiopulmonary resuscitation

Table 3 outlines the findings, demonstrating that a significant majority (82.5%) of participants have received training in cardiopulmonary resuscitation (CPR). Nearly all respondents (99.4%) were aware that administering CPR to babies, children, or adolescents helps maintain their heart and lung function. Over half of the respondents (54.4%) agreed that CPR should be performed on anyone experiencing a cardiac emergency, irrespective of age, gender, or condition. Almost all participants (93.5%) acknowledged the necessity for nurses to undergo CPR training and retraining. Additionally, the majority (87%) agreed that CPR should be initiated immediately before notifying a doctor. Regarding the effectiveness of CPR techniques, around 60-70% of respondents provided accurate responses on aspects like the percentage of heart activation with chest compressions and the correct depth of compressions for adults. Furthermore, most respondents (91.1%) correctly identified the location for chest

compressions during CPR. Overall, the survey indicates that ICU nurses exhibit a commendable level of knowledge (78%) regarding CPR. This information is summarized in Table 4, which presents the mean score for nurses' CPR knowledge as 1.263, with a standard deviation of 0.362, placing it within the range of good knowledge.

Table 5: Responses on the attitude of nurses towards cardiopulmonary resuscitation

Questions		Responses n = 169				
		Strongly agreed %	**Agreed %**	**Undecided %**	**Disagreed %**	**Strongly disagreed %**
I feel CPR is complex and time consuming	V18	24 (14.2%)	45 (26.6%)	4 (2.4%)	45 (26.6%)	51 (30.2%)
I feel CPR is energy consuming	V19	38 (22.5%)	38 (22.5%)	11 (6.5%)	52 (30.8%)	30 (17.8%)
I feel mouth to mouth ventilation should be perform if mask is not available on a patient during CPR	V20	52 (30.8%)	92 (54.4%)	11 (6.5%)	6 (3.6%)	8 (4.7%)
I feel it is futile to perform CPR for elderly patient	V21	15 (8.9%)	57 (38.7%)	26 (15.4%)	54 (32%)	17 (10.1%)
I think mouth to mouth ventilation should not be performed on opposite sex during CPR	V22	13 (7.7%)	48 (28.4%)	17 (10.1%)	69 (40.8%)	22 (13%)
CPR should not be practice, if necessary, equipment are not easily found	V23	11 (6.5%)	51 (30.2%)	9 (5.3%)	75 (44.4%)	23 (13.6%)
Inadequate supply of CPR equipment discourages most nurses from practicing CPR	V24	30 (17.8%)	83 (49.1%)	10 (5.9%)	38 (22.5%)	8 (4.7%)
I feel Doctors should be responsible for initiating CPR	V25	18 (10.7%)	72 (42.6%)	9 (5.3%)	52 (30.8%)	18 (10.7%)
I believe mouth to mouth ventilation to patient in cardiac emergency is irritating	V26	15 (8.9%)	62 (36.7%)	15 (8.9%)	71 (42%)	6 (3.6%)
If I have the opportunity, I would like to avoid CPR	V27	16 (9.5%)	22 (13%)	13 (7.7%)	63 (37.3%)	55 (32.5%)

Nurses attitude towards cardiopulmonary resuscitation:
Table 5 presents the attitudes of respondents toward cardiopulmonary resuscitation (CPR). While a notable percentage (14.2%) found CPR to be difficult and time-consuming, a significant portion (30.2%) disagreed strongly with this notion. Additionally, findings indicate that attitudes toward certain aspects of CPR, such as mouth-to-mouth ventilation and the availability of equipment, varied among respondents. Overall, the survey suggests that ICU nurses' attitudes toward CPR were moderately positive, with a mean score of 2.475 and a standard deviation of 1.112.

Table 7: Responses on the practice of cardiopulmonary resuscitation
Practice of cardiopulmonary Resuscitation
The result of the practices of cardiopulmonary resuscitation showed in table 8 that in cases of cardiac emergencies, 86% participants had performed CPR to patients., and Prior to starting CPR, 95.3% participants had made sure the patient had a pulse.92.3% participants ensure that the patients was positioned supine on a reasonably firm surface prior to starting CPR. 65.1% participants had opportunity to performing cardiopulmonary resuscitation to patient in hospital environment. The overall results show about practices of icu nurses regarding CPR is 76%. The calculated mean score for nurses' CPR proficiency a mean score of 1.256 with standard deviation 0.411 which fell within the range of excellent practice indicating that nurses practiced cardiopulmonary resuscitation.

CONCLUSION
Intensive care nurses (ICNs) may exhibit strong theoretical knowledge, but this doesn't always translate into practical skills, often due to training that overlooks ICU-specific challenges. While some ICNs recognize the importance of CPR, negative views about its utility in certain situations persist. Boosting ICNs' confidence and fostering collaboration can improve their attitudes and performance. Adherence to the latest CPR guidelines is sometimes inconsistent, compromising resuscitation quality. Effective communication and teamwork during CPR are often lacking, impacting outcomes; thus, regular debriefing and quality improvement initiatives are crucial. Continuous assessment and development efforts are essential for optimal CPR delivery in critical care settings. Despite their expertise, many ICNs need further BLS training, and hospitals must regularly update their staff's skills and knowledge to improve emergency management and survival rates.

RECOMMENDATIONS
Intensive care nurses (ICNs) should participate in CPR education programs that include both theoretical and practical aspects, focusing on the unique challenges of critically ill patients. Hospitals need to foster a culture that values CPR and promotes teamwork, communication, and adherence to the latest guidelines from reputable institutions like the European Resuscitation Council and the American Heart Association. By implementing these initiatives, healthcare organizations can ensure their

ICNs are well-equipped to provide high-quality CPR, leading to improved patient outcomes and higher survival rates after cardiac arrest.

APPLICATION IN NURSING RESEARCH, THEORY, AND PRACTICE
This research article explores the perceptions of nursing staff working in intensive care units regarding cardiopulmonary resuscitation (CPR) in KP Peshawar hospitals, providing valuable insights for nursing and healthcare researchers across different settings. Utilizing nursing theories like the theory of planned behavior, interventions can be designed to enhance nurses' CPR knowledge, attitudes, and practices. By addressing factors such as perceived behavioral control, norms, and subjective considerations, interventions can effectively improve nurses' CPR proficiency. Additionally, theories like the diffusion of innovation theory and social cognitive theory can help identify barriers and create targeted interventions to enhance nurses' CPR practices. The study underscores the importance of ongoing educational programs and simulation sessions to address specific challenges and ensure nurses are well-equipped with updated knowledge, positive attitudes, and best practices in CPR.

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