

Attitude and Barriers to Cardiopulmonary Resuscitation among Nurses at Ahmadu Bello University Teaching Hospital, Zaria Nigeria

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ABSTRACT

Nurses are often the first to respond to cardiac arrest cases and initiate cardiopulmonary resuscitation (CPR) in hospitals. Despite their critical role, survival rates in low-resource settings, such as Nigeria, remain poor. This is often due to factors that negatively affect the quality of CPR provided, including the nurses' experience, anxiety, and confidence, as well as the availability of necessary equipment. This study aimed to evaluate the attitudes and perceived barriers to emergency CPR among nurses at Ahmadu Bello University Teaching Hospital (ABUTH). A descriptive, cross-sectional study was conducted using a structured questionnaire with Likert-scale items to collect data from a judgmental sample of 145 nurses at ABUTH. The study received ethical approval, and data from 134 respondents were analyzed using SPSS version 26. The questionnaire's reliability was assessed with a pilot study, yielding a Cronbach's Alpha score of $r = 0.725$. The findings revealed an overall **negative attitude** toward emergency CPR among the nurses, with an aggregate mean score of 2.43 (on a scale where < 2.5 is negative). Over half of the nurses (52.2%) stated they would avoid performing CPR if given the chance. Key barriers identified included a shortage of manpower (70.2% strongly agreed) and the lack of an emergency response team (57.4% strongly agreed). Other significant barriers were a lack of adequate knowledge (61.2% strongly agreed) and training (56.7% strongly agreed), as well as insufficient or malfunctioning equipment. The study concludes that nurses' attitudes toward CPR at ABUTH are suboptimal due to several factors, including insufficient knowledge, lack of equipment, personal stress, fear of infection, and staff shortages. Addressing these barriers through improved training, forming dedicated emergency teams, and ensuring adequate staffing and resources is crucial to improving CPR outcomes.

Keywords: Attitudes, Barriers, Cardiopulmonary Resuscitation (CPR), Nigeria, Nurses.

1.0 INTRODUCTION

Nurses play an indispensable role in the management of cardiac arrest cases, as they are often the first healthcare professionals to identify signs of clinical deterioration and promptly initiate cardiopulmonary resuscitation (CPR). Nurses have been identified as key first responders capable of performing basic life support (BLS) and effective first aid in acute emergencies, with timely CPR by nursing staff positively impacting morbidity and mortality (Frontiers study, 2024). Their position at the bedside places them in a unique position to observe subtle changes in patient status, allowing for rapid activation of life-saving interventions. However, despite global advancements in resuscitation techniques, protocols, and training standards, survival outcomes following cardiac arrest remain disproportionately low in many low-resource settings such as Nigeria, where gaps in training and emergency response capacity hinder optimal care (cardiac arrest care in resource-limited settings review, 2025; Saidu, 2024). This challenge is compounded by structural limitations within the healthcare system, where inadequate emergency

preparedness and support mechanisms adversely affect outcomes for cardiac arrest patients (Saidu, 2024).

Previous research has identified several interconnected factors that influence CPR practice among healthcare professionals and how these factors significantly compromise the quality of resuscitative care delivered to patients. These factors span both individual and systemic levels. For instance, healthcare providers' experience, the emotional burden of anxiety or anger during emergencies, and physical symptoms such as post-resuscitation heart soreness—all of which may reflect the psychological toll of failed resuscitation attempts—have been shown to affect performance (Afaya, Bam, Azongo, Afaya, Yakong, & Kpodo (2021)). In addition, the time taken to initiate CPR, the duration of resuscitative efforts, and the ability to sustain high-quality compressions are critical determinants of patient outcomes. System-related constraints also play a major role, particularly the inconsistent availability of essential CPR supplies, medications, and functional equipment needed to support uninterrupted emergency care. Equally

important is the provider's level of confidence in initiating and performing CPR, as low self-efficacy has been linked to delays in action and reduced adherence to recommended guidelines (Alharbi, Wilson, Woods, Usher, 2016; Ali, Ali, Ali, Hinna, Bilal, Saad, 2023)

Given these persistent setbacks, there is a compelling need to better understand the specific factors that shape nurses' readiness and willingness to provide CPR in resource-constrained environments. Therefore, this study aims to assess the attitudes, perceived barriers, and overall preparedness related to emergency CPR among nurses at Ahmadu Bello University Teaching Hospital (ABUTH). By identifying the root causes of hesitation, performance gaps, and systemic constraints, the findings are expected to guide the development of targeted interventions, capacity-building initiatives, and policy reforms that can strengthen emergency response capabilities and ultimately improve patient survival rates in the institution.

2.0 METHODOLOGY

A cross-sectional descriptive study approach was adopted to facilitate collection of data on attitudes and barriers of response to CPR among nurses in at ABUTH, Shika, Zaria.

2.1 Population and Sampling

The study engaged 145 nurses stratified by role and department, and selected using judgmental sampling. 134 questionnaires were retrieved, resulting in 92.4% response rate.

2.2 Inclusion and Exclusion Criteria

The study includes all registered nurses working on the selected wards of the hospital. Other nurses on leave, off duty, unwilling to participate and working in outpatient departments (OPD) during data collection session were excluded from the study.

2.3 Data Collection Instrument and Analysis

Data were collected through a structured questionnaire comprising Likert-scale items on attitudes and perceived barriers of response to CPR. The data collected were coded, entered and analyzed using SPSS version 26. Descriptive and inferential statistics were employed to interpret findings.

The validity and reliability of the instrument used in the study are described in the methodology section of the source document.

2.4 Validity

Content Validity of the instrument was assessed through expert opinions. The instrument was submitted to two jurors in the department of nursing science and a statistician in the clinical area at ABU Teaching Hospital Zaria. These jurors assessed the face and content validity of the instrument. The jurors' views

and comments were applied, and they approved the instrument as legitimate for the study.

2.5 Reliability

A **pilot study** was conducted to assess the applicability and clarity of the study's tool. The questionnaire was administered to fourteen nurses (10% of the study sample) with similar characteristics from ABU Teaching Hospital Tudun Wada, who were not chosen for the study. The pilot study data were analyzed and a **reliability index** was calculated using **Cronbach's Alpha**, resulting in a score of $r = 0.725$. Based on this result, no changes were made to the instrument.

2.6 Data Variables, Source and Techniques

Data variables were confined to only questions pertaining attitude and perceived barriers of response to CPR. Personal data were restricted to only professional career data. Source of data was primarily from the respondents. Data were collected after the respondents consented to participate. The questionnaires were presented, filled and retrieved on the same spot.

2.7 Method of Data Analysis

Questionnaire data were cleaned for completeness and consistency, coded using a four-point Likert scale, and entered into Excel before being analyzed with SPSS version 26. Descriptive statistics (frequency, percentage, mean, and standard deviation) were generated and presented in tables. Mean scores above 2.5 indicated positive attitudes, and satisfaction, ranking was used for the barriers.

2.8 Ethical Consideration

The study obtained ethical approval before commencing data collection. A letter of introduction was acquired from the Department of Nursing Science at Ahmadu Bello University in Zaria. The Ahmadu Bello University Teaching Hospital Zaria ethical committee (NHREC/17/03/2018) approved the study before it began. Permission to conduct the study was also acquired from the heads of the Department of Nursing Services, Ahmadu Bello University Teaching Hospital Zaria. Permission to distribute the surveys was secured from the ward managers being studied. The participant's confidentiality was protected in accordance with the Helsinki Declaration of 1962.

3.0 RESULTS

Table 1 shows that more than one-third (35.8%) of the respondents which constitute the majority were between the ages of 30 and 39 years old, with a mean age of 37 years old, (37.3%) were Senior Nursing Officers and Principal Nursing Officers and almost one-third (32.8%) had 6 to 14 years of working experience. Half of the respondents (50.0%) are Bachelor of Nursing Science Degree (BNSc) holders. Accident and Emergency nurses constitutes majority of the participants (24.4%)

Table 1: Distribution of the sample according to their Sociodemographic Characteristics n=134

Variables	F	%	
Age of the respondents			Mean Age
20 – 29	31.0	23.1	37
30 – 39	48.0	35.8	
40 – 49	41.0	30.6	
50 – 59	14.0	10.5	
Qualifications of the Respondents			
RN/Post Basic Nursing	63.0	47.0	
BNSc. Nursing	67.0	50.0	
MNSc Nursing	4.0	3.0	
PhD Nursing	0.0	0.0	
Designation of the respondents			
SNM/NO	49.0	36.6	
SNO/PNO	50.0	37.3	
ACNO/CNO	27.0	20.1	
ADNS/DDN	8.0	6.0	
Clinical Area of the respondents			
A & E Unit	33.0	24.6	
ICU	9.0	6.7	
Medical Ward	20.0	15.0	
Surgical Ward	23.0	17.2	
EPU	12.0	9.0	
CTU	6.0	4.4	
Theatre	25.0	18.7	
Oncology	6.0	4.4	
Working Experience of the respondents			
<5	42.0	31.4	
6-14	44.0	32.8	
15-20	24.0	17.9	
21-29	23.0	17.2	
>30	1.0	0.7	

Table 2 The table indicated that a substantial portion of nurses perceive CPR as a challenging and physically demanding procedure, with 29.8% always and 29.8% often feeling that CPR is complex and time-consuming, and 18.6% always and 38.1% often feeling that CPR is energy-consuming. Furthermore, a significant number of nurses held negative attitudes towards the effectiveness of CPR, with 41% always and 33.6% often believing it is futile to perform CPR for elderly patients. A large percentage of nurses also believed that the lack of readily available equipment is a significant barrier to performing CPR, with 40.3% always feeling

that CPR should not be practiced if necessary equipment is not easily found, and a substantial number expressed a reluctance to be involved in performing CPR, with 52.2% always wanting to avoid CPR if given the opportunity. While 11.2% always and 42.5% often felt confident in recognizing a victim who needs CPR, a notable percentage (39.5%) never felt confident, and although 3.7% always and 34.3% often believed CPR should be done by all health professionals, there was a divided opinion on this matter. The overall mean score of 2.43 indicated an overall negative attitude towards emergency CPR.

Table 2: Distribution of the sample according to the Nurses' Attitudes towards Emergency CPR

Question Statements	Responses n = 134								Mean	Remarks
	Always		Often		Sometimes		Never			
	F	%	F	%	F	%	F	%		
I feel CPR is complex and time consuming	40	29.8	40	29.8	30	22.4	24	17.9	2.72	Always
I feel CPR is energy consuming	25	18.6	51	38.1	30	22.4	28	20.9	2.45	Never
I feel it is futile to perform CPR for elderly patient	55	41	45	33.6	21	15.7	13	9.7	1.94	Never



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I feel CPR should not be practice if necessary equipment are not easily found	54	40.3	14	10.4	34	25.4	32	23.9	2.33	Never
I feel doctors should be responsible for initiating CPR	49	36.6	16	11.9	34	25.4	35	26.1	2.41	Never
If I have the opportunity, I would like to avoid CPR	70	52.2	11	8.2	44	32.8	9	6.7	1.94	Never
I feel confident in recognising a victim who needs CPR	15	11.2	57	42.5	9	6.7	53	39.5	2.74	Always
CPR should be done by all health professionals	5	3.7	46	34.3	43	32.1	40	29.9	2.88	Always

Aggregate Mean Score **2.43** **Negative attitude**

Reference: >2.5 – Positive Attitude <2.5 – Negative Attitude

Table 3 highlights the significant barriers that nurses perceive when responding to emergency CPR. The results revealed that a significant barrier is the shortage of manpower, with 70.2% of nurses strongly agreeing and 19.4% agreeing that this is a factor, with an average score of 3.58. Additionally, the lack of an emergency response team was identified as a major obstacle, with 57.4% strongly agreeing and 35.1% agreeing to its impact (mean score of 3.47). Furthermore, a lack of adequate knowledge regarding CPR was considered a significant barrier, with 61.2% strongly agreeing and 26.9% agreeing (mean score of 3.46). Other key barriers included the lack of CPR training and retraining sessions (56.7% strongly agreed, 24.6% agreed, mean score of 3.32), a lack of CPR equipment or equipment failure (41.8% strongly agreed, 47.8% agreed, mean score of 3.29), and the lack of timely

presence of emergency medical service providers at the patient’s bedside (39.6% strongly agreed, 50.7% agreed, mean score of 3.28). Personal stress, anxiety, and increased workload were also noted as barriers, with 38.8% strongly agreeing and 42.5% agreeing (mean score of 3.17), as was a lack of familiarity with the emergency tray (49.2% strongly agreed and 20.2% agreed, mean score of 3.11). Inaccessibility to CPR equipment like AEDs (33.6% strongly agreed, 44.8% agreed, mean score of 2.95), the risk of contracting infections (26.9% strongly agreed, 39.6% agreed, mean score of 2.81) and the presence of family members during CPR (8.2% strongly agreed, 22.4% agreed, mean score of 2.13), were also identified as barriers. The aggregate mean score for the barriers was 3.14, suggesting that these obstacles significantly impede effective CPR responses.

Table 3 Distribution of the sample according to the barrier of Response to emergency CPR as perceived by the Nurses

Question Statements	Responses n = 134									
	Strongly Agreed		Agreed		Disagreed		Strongly Disagreed		Mean	Rank
	F	%	F	%	F	%	F	%		
shortage of manpower	94	70.2	26	19.4	12	8.9	2	1.5	3.58	1
Lack of Emergency Response Team	77	57.4	47	35.1	6	4.5	4	3.0	3.47	2
Lack of adequate knowledge regarding CPR	82	61.2	36	26.9	12	8.9	4	3.0	3.46	3
lack of CPR training and retraining sessions	76	56.7	33	24.6	17	12.7	8	6.0	3.32	4
lack of CPR equipment and or equipment failure	56	41.8	64	47.8	11	8.2	3	2.2	3.29	5
Lack of timely presence of Emergency Medical Service providers at the patients bed side	53	39.6	68	50.7	10	7.5	3	2.2	3.28	6



Personal stress, anxiety and increase workload	52	38.8	57	42.5	21	15.7	4	3.0	3.17	7
lack of familiarity with the emergency tray	66	49.2	27	20.2	30	22.4	11	8.2	3.11	8
Inaccessibility to CPR equipment like AED	45	33.6	60	44.8	8	5.9	21	15.7	2.95	9
risk of contracting infections	36	26.9	53	39.6	29	21.6	16	11.9	2.81	10
presence of family members during CPR	11	8.2	30	22.4	59	44.0	34	25.4	2.13	11

Aggregate Mean Score

3.14

4.0 RESULT AND DISCUSSION

4.1 Sociodemographic Characteristics of the Respondents

The findings on sociodemographic data show that most respondents were between 30 and 39 years old, with a mean age of 37 years, and held Bachelor of Nursing Science (BNSc) degrees. This trend likely reflects current educational reforms favoring the recruitment of nurses with higher qualifications, even among younger nurses. This finding aligns with Moghadam, Chehrzad, & Masouleh (2020), who reported that 61% of nurses were aged 30–40 years, and 94.3% held BNSc degrees as their highest qualification. However, it contrasts with Alharbi, Wilson, Woods, & Usher (2016) who identified a bimodal age distribution (26–30 years: 48%; 20–25 years: 40%) as the dominant groups. It also differs from Ali, Ali, Ali, Hinna, Bilal, & Saad (2023), where 87.1% of nurses were aged 20–<30 years, and only 28.2% held BNSc degrees.

The current study also found that nearly one-third of respondents had 6–14 years of professional experience, which may explain their familiarity with emergency CPR. This contrasts with Ali et al. (2023) and Okumura, Ishigaki, Mori, Fujiwara (2022), where the majority had 1–<3 years (28.2%) and 1–5 years (62.6%) of experience, respectively. Additionally, most nurses in this study held senior positions (Senior Nursing Officers or Principal Nursing Officers), with the Accident and Emergency (A&E) unit representing the largest participant group. This is unsurprising, as A&E (including medical/surgical units) is the institutional hub for cardiac arrest response and employs the most experienced senior nurses. These results mirror Tomas and Kachekele (2023), where 77% of participants were senior registered nurses, and A&E nurses comprised 22% of the sample.

4.2 Attitude of Nurses Toward Cardiopulmonary Resuscitation

Despite having a good opinion of CPR, the majority of nurses demonstrated a negative attitude toward CPR. This negative behavior could be attributed to the fact that, Nursing units often struggle with a shortage of staff, leading to high nurse-to-patient ratios that place significant strain on those available to provide care. Many nurses also perceive themselves as playing a secondary role during Basic Life Support (BLS), which may reduce their readiness to take the lead in emergency situations. Additionally, episodes of disorientation and panic—often compounded by inadequate CPR training or insufficient retraining—can hinder effective response during cardiopulmonary emergencies. A further barrier is the lack of confidence some nurses experience, coupled with a fear of infection, both of which can diminish their motivation to perform CPR when required.

This study is supported by Okwuikpo Michael & Amere (2020), whose cross-sectional study revealed that 56.3% of respondents had negative opinions toward CPR. The findings align with Tomas and Kachekele (2023) (negative attitude: 36.2 ± 4.8) and are consistent with Gebremedhn, Gebregergs, Anderson, & Nagaratnam (2017), (57.1%) and Abebe, Zeleke, Assega, Sefefe, & Gebremedhn (2021) (64.2%), who similarly reported negative nurse attitudes.

Conversely, the results contradict Ogundele (2020) (60.5% positive attitude), Onyeaso and Imogie (2014) (98.8% positive), and Khatun, Chowdhury and Goni (2021) (70.6% neutral attitude).

4.3 Barriers to emergency CPR Response

The current investigation revealed several significant impediments to effective cardiopulmonary resuscitation. Structurally, the absence of a dedicated Emergency Response Team at ABUTH posed a considerable challenge. Furthermore, a majority of participants reported a shortage of functional CPR equipment. The inaccessibility of automated external



defibrillators (AEDs) was also a major concern, with resuscitation trolleys and defibrillators frequently separated or unavailable when needed. Alarming, over half of the respondents (57.1%) indicated experiencing equipment failure during critical emergencies. These observations resonate with the findings of Janatolmakan, Nouri, Soroush, Andayeshgar, and Khatony (2021), who noted delays in CPR administration due to inadequate equipment, and Okwuikpo, Michael & Amere (2020), where a substantial 88.9% reported insufficient equipment availability. Similarly, Citalino, Silva, and Pereira (2015) found that 67.3% of their cohort lacked essential CPR materials, and 57.1% encountered equipment malfunctions. The issue of AED inaccessibility as a major barrier was also highlighted by Ayob, Nasiri, and Mahmodi (2021). Conversely, these findings stand in contrast to the work of Suharsono, Sunarmi, Ida, Khirria, Asrin, and Ulya (2023), which demonstrated that effective implementation of code blue systems by nurses (65.9%) significantly improved patient survival rates by 14.9%.

Beyond structural limitations, the study also identified critical knowledge and training deficits among healthcare providers. A majority of nurses lacked fundamental CPR expertise and were unfamiliar with the contents and organization of emergency trays. This was further compounded by insufficient opportunities for initial and refresher training, a factor directly linked to suboptimal emergency response capabilities. These observations align with the research of Rajeswaran, Cox, Moeng, and Tsimas (2018), where 48% of participants were unaware of CPR procedures due to inadequate training, and Citalino, Silva, and Pereira (2015), who reported that a striking 98% of their sample were unfamiliar with emergency trolleys. However, these findings diverge from those of Udo, Akpan, and Okon (2022), which indicated that a significant proportion (76%) of their study population had received CPR training, correlating with improved emergency response outcomes.

Finally, psychological and social factors also emerged as important considerations. A majority of respondents expressed objections to family presence during CPR. This aligns with the findings of Mahnaz, Hassankhani, Powers, Dadashzadeh and Ghafouri (2017), where 62.5% disagreed with family presence, and 57.1% believed it negatively impacted the quality of care provided. Additionally, a significant concern regarding the fear of infection was reported, a finding supported by Friduddina and Chung (2018), who noted that 85.6% of their participants expressed worry about disease transmission in such situations.

5.0 CONCLUSION

The nurses' attitudes towards CPR at ABUTH remain suboptimal. According to the current study's findings, nurses' negative attitudes on emergency CPR can be ascribed to causes such as a lack of proper knowledge, a lack of CPR equipment, unfamiliarity with the emergency tray, personal stress, the possibility of getting infections, and a scarcity of manpower. This will unarguably affect the quality of CPR required by a patient in desperate need of it and the mortality will be predictably higher as a result. Addressing barriers such as inadequate training, staffing, and the absence of emergency response teams is critical for improving resuscitation outcomes.

6.0 RECOMMENDATIONS

Based on the study findings, the following recommendations were made;

- i. Regular CPR training and drills to enhance skills and confidence.
- ii. Formation of dedicated emergency response teams.
- iii. Policy interventions to ensure adequate nurse-patient ratios during shifts.
- iv. Reinforcement and refresher classes are required for improved cognition; health care personnel should attend hands-on workshops on a regular basis to master skills and refresh their understanding of BLS.
- v. Employing more nurses to reduce workload and stress
- vi. Provision of necessary equipment for CPR and ensure that nurses are familiar with these equipment.

6.1 Strengths and Limitations

6.1.1 Strengths

- i. High Response Rate: The study achieved an impressive 92.4% response rate, which minimizes non-response bias and increases the generalizability of the findings to the target population of nurses at ABUTH.
- ii. Instrument Validity and Reliability: The document details a robust process for validating the data collection instrument, including the use of expert jurors and a pilot study. The reported Cronbach's Alpha of 0.725 indicates that the questionnaire is reliable.
- iii. Ethical Approval: The study followed strict ethical guidelines, securing approval from the ABUTH ethical committee and the nursing department heads, which ensures the protection of participants' confidentiality.

6.1.2 Limitations

- i. Generalizability: The use of a single-center, judgmental sampling method limits the generalizability of the findings to other hospitals in Nigeria or other low-resource settings.

- ii. Self-Reported Data: The study relies on self-reported data from questionnaires, which may be subject to social desirability bias, where nurses might overstate their positive attitudes or understate negative ones.
- iii. Qualitative Aspects: The study is descriptive and cross-sectional, which means it can describe the attitudes and barriers but cannot establish a causal relationship between them. A mixed-methods approach with qualitative interviews could have provided deeper insights into the "why" behind the observed attitudes and barriers.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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