Knowledge, Self-Reported Competency and the Perspective of Cardiopulmonary Resuscitation among Nurses' in a Teaching Hospital in Osun State, Nigeria

Ayandiran, Emmanuel Olufemi[1], Akinyoola, Oladele Oluwadamilare[2], Oyediran, O. Olufemi[1], Ogunlade, Alade Aderinto[3], Faluyi Olusola Emmanuel[4]

1. Department of Nursing Science, College of Health Sciences, Obafemi Awolowo University, Ile-Ife. Osun State Nigeria
2. Department of Nursing, Osun State University, Osogbo, Osun State, Nigeria
3. Department of Nursing Science, Faculty of Basic Medical Sciences, Edo University Iyamho, Edo State, Nigeria
4. Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria

Corresponding Author: Ayandiran, Emmanuel Olufemi,
Corresponding Email: oluayan@gmail.com

Abstract

Background: Cardio-respiratory emergencies are common occurrences in the hospital setting and the outside world and literature has shown that CPR when received from adequately trained health care professionals reduces cardiopulmonary arrest-related deaths. There is, however, a dearth of data on nurses' knowledge and competency in cardiopulmonary resuscitation in Nigeria. The study, therefore, assessed knowledge, perception and self-reported competency of cardio-respiratory emergencies and resuscitation among nurses in a tertiary care setting in Nigeria. **Methodology**: The study employed a cross-sectional design. The research setting is a tertiary care centre, located in Southwest Nigeria. Two hundred and ninety nurses participated in the survey. Data collection was done with the aid of a structured questionnaire administered on 290 nurses that were selected by stratified sampling technique. Data collected were analysed using descriptive statistics (such as frequency, percentages count, mean and standard deviation) and inferential statistics (Pearson chi-square). **Results**: Result showed that the majority (62 %) of the nurses possesses a fair knowledge of cardio-respiratory emergencies and resuscitation. Further analysis revealed that nurses' qualification and area of speciality exerted significant influence on knowledge of cardio-respiratory emergencies and resuscitation among the nurses (p = 0.046 & 0.0001 respectively). The study equally revealed that a majority of the nurses (74.1%) displayed a negative perception of cardio-respiratory emergencies while about a third-rated themselves as either novice or advance beginner in CPR skills. **Conclusion**: The study concluded that although the majority of the nurses possessed fair knowledge and moderate competency of cardio-respiratory emergencies and resuscitation, they nonetheless displayed negative perception. The one-third of the nurses that rated themselves as either novice or advanced beginner in CPR skills and the negative perception of CPR among the majority of the nurses should be a thing of concern. These findings, therefore, have implication for training and retraining of nurses in the conduct of CPR.

Keywords: Knowledge, Perception, Competency, Cardiopulmonary resuscitation

Introduction

Cardio-respiratory emergencies and resuscitation are common scenes in the hospital setting and the outside world. Sudden cardiac arrest is the main cause of death of millions of people worldwide every year (Püttgen, *et al.,* 2009). Despite advances in prevention, cardiac arrest remains a substantial public health problem and a leading cause of death in many parts of the world. Cardiac arrest occurs both in and out of the hospital. In the United States (US) and Canada, approximately 350,000 people per year have a cardiac arrest and receive attempted resuscitation (AHA, 2011). Anastasia, et al. (2016) similarly reported that ischemia is the leading cause of death worldwide and sudden cardiac arrest (SCA) caused by coronary heart disease is responsible for more than 60% of deaths. It is not unlikely that the statistics of deaths secondary to cardiac arrest in Nigeria and other developing sub-Saharan African Countries would far surpass the US figure but for want of accurate record. It is not surprising that cardiac emergencies have become a major concern in today's world.

Virtually every pathological process affecting the heart can lead to a critical cardiac event and commonly sudden death. It can result from an array of causes, ranging from acute exacerbation of a long-term chronic respiratory disease to acute traumatic injury. Cardiopulmonary resuscitation which is a combination of rescue breathing and chest compressions, when delivered to the victims in an appropriate and timely manner helps in reducing cardiac arrest-related deaths. Rajeswaran, et al., (2018) submission that CPR has been shown to reduce in-hospital deaths when received from adequately trained health care professionals aptly buttress this assertion. It has even been indicated that cardiopulmonary resuscitation (CPR) that was initiated early by witnesses increased survival after cardiac arrest (Sasson, et al., 2010; Bradley & Rea, 2011; Özbilgin, et al., 2015).

The obvious implication of this is that nurses need to be knowledgeable and proficient in the art of performing the procedure in order to achieve its objective (Elazazay, et al., 2012). This is because, if not executed correctly and in a timely manner, a bad outcome may result (Sullivan, 2015). For instance, CPR measures misapplied might lead to serious complications such as broken ribs, ineffective lung inflation and cardiac output, resulting in brain damage and death. These events underscore the importance of mastering the CPR procedure.

While a number of studies have been conducted on cardiopulmonary resuscitation in the developed world, there is a paucity of studies on this very important subject in this part of the world (Nigeria), particularly among nurses who are the set of health professionals that stay twenty-four-seven with the patients. Unlike the developed world, standardized resuscitation training is not yet a routine in developing countries, yet emergency resuscitation challenges also exist (Rajeswaran & Ehlers, 2013). Again, only a few reports from developing countries have addressed the level of awareness, knowledge and competence of health care professionals in the performance of CPR (Olajumoke, et al., 2012). Sadoh and Osariogiagbon (2011) specifically reported poor knowledge of CPR amongst doctors and nurses and that it was significantly poorer amongst nurses than doctors and better amongst younger respondents.

Besides, it has been found that the performance of CPR by nurses varies according to their knowledge and skills, the availability of resources and regular training. This is against the backdrop of poor retention of cardiopulmonary resuscitation skills and priorities which is well documented in the literature (Sullivan, 2015). For instance, nurses performing CPR in accident and emergency units in real-life situations daily retained these skills better than nurses working in other departments (Edgren & Adamson, 2009; Hamilton, 2005). In view of

the above, it has become expedient to assess nurses' knowledge and skill in handling respiratory and cardiac emergencies as well as cardiopulmonary resuscitation. This is with a view to designing appropriate programmes and activities that can help to improve the nurses' knowledge and skill at performing CPR with a possible reduction in mortality associated with cardiopulmonary arrest. The study, therefore, has as its objectives: to assess knowledge, perception and competency of cardio-respiratory emergencies and resuscitation among nurses; and to establish the relationship between knowledge of cardio-respiratory emergencies and resuscitation and selected demographic variables among nurses of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife.

Materials and Methods
Research Design

The study employed a descriptive design to collect data on knowledge, perception and competency of nurses in cardio-respiratory emergencies and resuscitation in selected wards of the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife.

Study Setting

The study setting is Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife. OAUTHC is a conglomerate made of five separate units namely: Urban Comprehensive Health Centre, Eleyele; Ile-Ife; Ife Hospital Unit (IHU), Ile-Ife; Wesley Guild Hospital, Ilesha; Multipurpose Health Centre, Ilesha; and the Rural Comprehensive Health Centre, Imesi Ile. The hospital is one of the first generations of Teaching Hospitals established by the Federal Government to provide quality health care delivery to its people. The hospital is unique in that it was founded on, what is generally referred to as the Ife Philosophy. The philosophy focuses on an integrated healthcare delivery system approach with an emphasis on comprehensive healthcare service based on a pyramidal structure comprising primary care at the base, and secondary and tertiary services at hospital settings. The philosophy is designed to secure improvement in the physical, mental and socio-economic well-being of Nigerians through preventive, promotive, diagnostic, restorative and rehabilitative services.

The Ife Hospital Unit where the study actually takes place is the administrative head and the unit that houses the intensive care unit, theatre, renal (including the haemodialysis and transplantation) unit, to mention a few. The hospital enjoys a wide range of patronage from within and outside the Ife-Ijesa zone. It provides secondary and tertiary psychiatric services to Osun, Ekiti, Ondo and neighbouring states in south-western Nigeria, which are predominantly Yoruba speaking population. It provides both in-patient and out-patient services. It provides facilities for medical education for nurses, health record officers, community health officers and residency training for medical doctors. It serves as the centre for education and training in nursing other health and allied professions. It also serves as a research centre for many researches by individuals and cooperates bodies. This wide coverage coupled with its vast area of specialization and high patients' patronage particularly referred cases particularly informs its choice as the research setting.

Sample Size and Sampling Technique

The target population comprises nurses from Ife Hospital Unit and the Urban Comprehensive Health Centre Eleyele, Ile-Ife. The sample size was determined using the Yamane (1967) sample size formula for proportions. Since the total population of nurses in the Obafemi Awolowo University Teaching Hospitals Complex is 777 (2019 Nurses Statistics Report). The sample size was, therefore, determined to be 264. When 10% non-response rate was added, it brought the final sample size to 264.06 +26.41 = 290.4 ≈ 290

Respondents were selected by a stratified sampling technique using unit/wards as the basis of stratification. The entire IHU was

stratified into 4 phases (Phases 1 – 4). The following wards were then randomly selected: children and adult emergency wards; male and female medical and surgical wards; intensive care units' nurses; perioperative nurses and Urban Comprehensive Health Centre, Eleyele. A weighted proportion of the nurses in each selected wards was eventually selected for questionnaire administration. The same procedure was applied for the selection of nurses from the Urban Comprehensive Health Centre, Eleyele.

Instrument for Data Collection

The instrument for the study was a structured self-administered questionnaire. The questionnaire consists of 4 sections (sections A-D). Section A comprises 7 items asked after the participant's demographic profile. Section B, a 23 item knowledge scale assessed the respondents' knowledge of cardio-respiratory emergencies and resuscitation. There is only one correct option for each item. The correct option attracts a score of '1' while the incorrect option attracts '0'. Maximum score obtainable is 23. A score of 0 – 9 (0 – 39.1%) is regarded as low knowledge; 10 – 16 (43.5 – 69.60%) is regarded as fair knowledge while a score of 17 – 23 (73.9 – 100%) is regarded as good knowledge.

Section C (worded in Likert scale format), assessed the respondents' perception of cardio-respiratory emergencies and resuscitation. Options of answers are "I totally disagree", "I mostly disagree", "I do not know" "I mostly agree", "I totally agree". Like the preceding sections, the scores are weighted and the maximum score obtainable is 56 while the lowest score obtainable is 0. A score of 0 – 27 is rated negative perception, 28 – 41 is regarded as positive perception while a score of 42 – 56 is classified as a very positive perception.

Sections D is a self-rated competency level of cardio-respiratory emergency. The competency level was rated in decreasing order from an expert, to proficient, competent, advance beginner, novice and no experience;

scored from 5 to 0 (where an expert is rated 5 and no experience-rated zero). Maximum score obtainable is 65 and minimum score zero (0).

Validity and Reliability of the instrument

The validity and reliability of the questionnaire were achieved through content and construct validity techniques. The draft questionnaire was given to experts in the field of nursing research, emergency and critical care for evaluation of its items. Each item was assessed for appropriateness, clarity, lexical context, coverage and relevance to the study. The items that appeared ambiguous were recast while those that appear repetitive were struck off.

On completion of the validity testing, the questionnaire was subjected to a homogeneity test to determine its reliability during a pilot study. Burns and Grove (2009) declared that homogeneity testing examines the extent to which all the items in an instrument consistently measure the construct. The test computes the variances of all individual's scores for each item and then adds these variances across all items and the score range from 0 to 1. The Cronbach's alpha score for the section B, C and D of the questionnaire were 0.82, 0.9 and 0.85 respectively suggesting that the instrument has high internal consistency. Mertens (2010) observation that most reliability coefficients range from .75 to .95 and Bruning and Kintz (1997) submission that whenever an instrument's reliability value is .70 or above, the instrument is considered reliable, lend credence to this inference.

Procedure for Data Collection

Prior to the commencement of data collection, permission was obtained from OAUTHC management. The request for permission to collect data, the study proposal and a sample of the questionnaire was submitted to the Ethics and Research Committee of the hospital for the purpose of ethical clearance. Preliminary visits were equally made by the investigator to the hospital to establish rapport

and to explain the purpose of the planned investigation. This was followed by repeated visits by the investigator to administer the questionnaire on the respondents. Completed questionnaires were retrieved as soon as the respondents were done with them.

Method of Data Analysis

Data generated from the study were collated, coded and subjected to statistical analysis using Statistical Package for Social Sciences (SPSS 24). The analysis of data collected involved several closely related operations to summarize the collected data and organize them to answer the research questions. Both descriptive (frequency counts and percentages) and inferential statistical techniques (Pearson Chi-Square) were used at a 0.05 level of significance.

Results

A total of 290 nurses participated in the current study. The age distribution of the respondents showed that over a third (36.6%) are between 25 and 34 years with only 15.8% being 45 years and above. Classification of the respondents by gender revealed that a majority are female (83.4%). Over a third (33.4%) had been working as a nurse in the hospital for 1 – 5 years, 36.2% 6 – 10 years' work experience while only a few (5.9%) have had over 20 years work experience. Of note also is that a fair majority (58.6%) had only a diploma certificate in nursing.

Table 1:   **Socio-Demographic Characteristics of Nurses**

	Frequency	Percentage
Age:		
<25 years	42	14.5
25 – 34 years	106	36.5
35 – 44 years	96	33.1
45 – 54 years	46	15.9
Total	**290**	**100**
Gender:		
Male	48	16.6
Female	242	83.4
Total	**290**	**100**
Designation:		
Lower Cadre (NO II & NO I)	165	56.9
Middle Cadre (SNO & ACNO)	77	26.6
Upper Cadre (CNO & ADNS)	48	16.4
Total	**290**	**100**
Length of Service:		
1 – 5 years	97	33.4
6 – 10 years	105	36.2
10 – 15 years	50	17.2
16 – 20 years	21	7.2
Above 20 years	17	5.9
Total	**290**	**100**
Educational Level:		
Diploma	170	58.6
1st Degree	97	33.4
2nd Degree	22	7.7
Doctoral Degree	1	0.3
Total	**290**	**100**

Fig 1 below shows that only 5% of the participants possess good knowledge level of cardio-respiratory emergencies and resuscitation. Although a majority (62 %) of the nurses possess a fair knowledge of cardio-respiratory emergencies and resuscitation, while one-third of the participants (33 %) possess poor knowledge of cardio-respiratory emergencies and resuscitation.
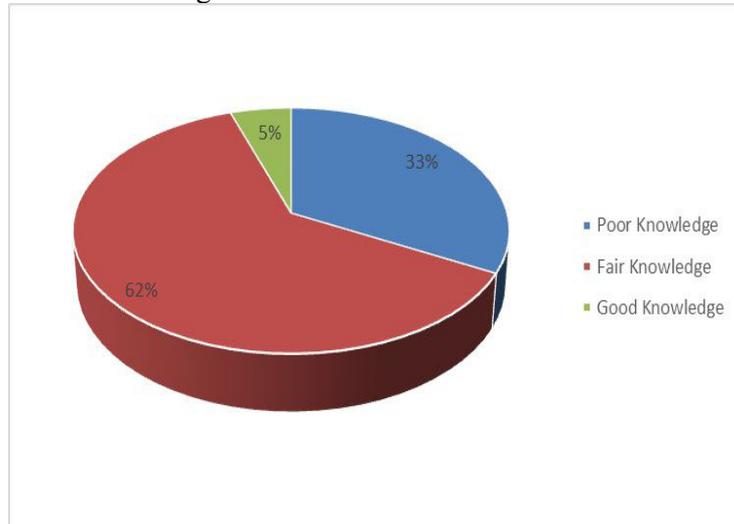

Fig 1: *Classification of Nurses by Knowledge of Cardio-Respiratory Emergencies and Resuscitation*

Table 2 shows that there is no significant relationship between nurses' designation and their knowledge of CPR ($p = 0.069$) and neither was any significant relationship found between nurses length of service/years of experience and their knowledge of CPR ($p = 0.379$). A significant relationship was however established between nurses' educational level and their knowledge of CPR ($p = 0.046$). Similarly, there was a strong significant relationship between speciality area and nurses' knowledge of CPR ($p = 0.0001$).

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Table 2: *Relationship between Selected Socio-demographic variables and Knowledge of Cardiac and Respiratory Emergencies*

Nurses Designation	Nurses' Knowledge Level				
	Poor Knowledge (%)	Fair Knowledge (%)	Good Knowledge (%)	No. of Nurses	
Lower Cadre	27.3	65.5	7.3	165	χ^2 = 8.714
Middle Cadre	37.7	58.4	3.9	77	df = 4
Upper Cadre	43.8	56.2	0.0	48	p-value = 0.069
Duration of Practice	Poor Knowledge (%)	Fair Knowledge (%)	Good Knowledge (%)	No. of Nurses	
1 – 5 years	30.9	59.8	9.3	97	
6 – 10 years	32.4	64.8	2.9	105	χ^2 = 8.579
11 – 15 years	40.0	54.0	6.0	50	
16 – 20 years	28.6	71.4	0.0	21	df = 8
20 years and above	29.4	62.1	5.2	17	p-value = 0.379
Qualification	Poor Knowledge (%)	Fair Knowledge (%)	Good Knowledge (%)	No. of Nurses	
Diploma	35.9	60.6	3.5	170	
1st Degree	23.7	70.1	6.2	97	χ^2 = 12.848
2nd Degree	45.5	40.9	13.6	22	df = 6
Doctoral Degree	100.0	0.0	0.0	1	p-value = **0.046**
Area of Specialty	Poor Knowledge (%)	Fair Knowledge (%)	Good Knowledge (%)	No. of Nurses	
A & E Nurses	38.9	55.6	5.6	36	
Intensive Care Nurses	11.1	72.2	16.7	18	χ^2 = 44.868
Nurse Midwives	42.2	55.9	2.0	102	
Perioperative Nurses	0.0	73.9	26.1	23	df = 10
Public Health Nurses	34.4	65.6	0.0	64	
Other Nurses	29.8	66.0	4.3	47	p-value **<0.0001**
Total	**32.8**	**62.0**	**5.2**	**290**	

Fig 2 below shows that the majority (74.1 %) of the nurses have a negative perception of cardio-respiratory emergencies and resuscitation. Only a few (5.2%) have a very positive perception of cardio-respiratory emergencies and resuscitation while the rest of the nurses (20.7%) displayed a positive perception of cardio-respiratory emergencies and resuscitation.
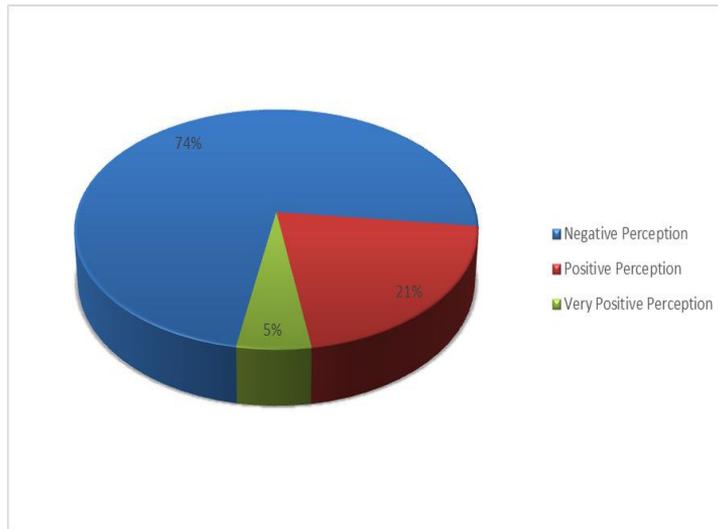
Fig 2: *Perception of Cardio-Respiratory Emergencies and Resuscitation among Nurses*

Table 3 above presents a comprehensive breakdown of the nurses' responses to items on the perception scale. It is shocking to note that 52.4% of the study participants "do not know" that the time of commencement of cardio-pulmonary resuscitation matters in the outcome of resuscitation. Yet disturbing is the erroneous perception of many of the participants that resuscitating a patient who has a cardiac arrest is waste of time (23.1%), with 69% submitting that they do not know.

Equally important is the lack of insight displayed by a majority of the participants about who can carry out resuscitation and particularly their failure to realise that they too can conduct resuscitation successfully. Also noteworthy is the notion held by a significant proportion of the nurses (35.2%) that patient with acute myocardial infarction will eventually die no matter how much you try with 55.5% responding that they do not know

Table 3: *Highlights of the Nurses' Responses to Some of the Items on the Perception Scale*

Items	Frequency & Percentages of Nurses				
	Totally disagreed	Mostly disagreed	Totally agreed	Mostly agreed	Do not know
In Cardiopulmonary Resuscitation, the time of commencement does not really determine the outcome of the resuscitation but the destiny of the patient does.	36 (12.4)	31 (10.7)	20 (6.9)	51 (17.6)	152 (52.4)
Most cardiac emergencies are devil's affliction and usually does not respond to medical intervention.	23 (7.9)	4 (1.4)	20 (6.9)	60 (20.7)	183 (63.1)
Resuscitating a patient with cardiac arrest is a waste of time.	13 (4.5)	10 (3.4)	15 (5.2)	52 (17.9)	200 (69.0)
Patient with acute myocardial infarction will eventually die no matter how much you try.	22 (7.6)	5 (1.7)	26 (9.0)	76 (26.2)	161 (55.5)
Patient with an acute stroke cannot survive in the open ward except in the ICU.	16 (5.5)	13 (4.5)	23 (7.9)	77 (26.6)	161 (55.5)
Adrenaline injections are very sensitive drugs that must be given ONLY if prescribed by the doctor even during an emergency situation.	21 (7.2)	29 (10.0)	51 (17.6)	87 (30.0)	102 (35.2)
Resuscitation of patient with cardiac arrest is the responsibility of the physicians and it's optional for nurses.	22 (7.6)	6 (2.1)	21 (7.2)	68 (23.4)	173 (59.7)
Resuscitating a patient with a cardiac or respiratory arrest can only be successfully done in the ICU.	24 (8.3)	12 (4.1)	24 (8.3)	64 (22.1)	166 (57.2)
Resuscitating a patient with cardiac arrest for more than 15minute deprives other patients necessary care, hence resuscitation must not exceed 15 minutes.	25 (8.6)	3 (1.0)	17 (5.9)	100 (34.5)	145 (50.0)
Successful resuscitation of cardiac arrest cannot be done by nurses alone.	19 (6.6)	23 (7.9)	69 (23.8)	58 (20.0)	121 (41.7)
Initiation of cardiopulmonary resuscitation should only be done by a certified Basic Life Support health care provider only.	19 (6.6)	30 (10.3)	48 (16.6)	62 (21.4)	131 (45.2)
Patients above 70 years in cardiac or respiratory arrest do not need resuscitation.	22 (7.6)	10 (3.4)	13 (4.5)	67 (23.1)	178 (61.4)
Every resuscitation exceeding 15minutes does not provide good outcome.	25 (8.6)	34 (11.7)	39 (13.4)	79 (27.2)	113 (39.0)
Resuscitation of cardiac and respiratory arrest is the primary responsibility of the anaesthetist.	22 (7.6)	25 (8.6)	35 (12.1)	78 (26.9)	130 (44.8)

Contrary to the nurses' performance in the knowledge test, 18.6% of the nurses rated themselves as 'Expert' and 30.7% as 'Proficient' in performing chest compressions with only 11% and 8.3% rating themselves as 'Advanced Beginner' and 'Novice'

respectively. Table 4 also reveals that 4.8% of the nurses adjudged themselves as having no experience in giving rescue breath during CPR and 13.8 rated themselves as 'Novice'. Similarly, 16.9% stated that have no experience as regards the use of AED with only 11.7% rating themselves as 'Competent'. What is of more concern is the rather high number of nurses who rated themselves as possessing no experience in using basic airway adjunct and giving intraosseous drugs (15.5% and 17.2% respectively).

Table 4 *Self-rated Competency of Nurses on Cardio-pulmonary Resuscitation*

CPR-Related Techniques	Frequency & Percentages of Nurses					
	Expert	**Proficient**	**Competent**	**Advanced Beginner**	**Novice**	**No Experience**
Doing chest compression	54 (18.6)	89 (30.7)	88 (30.3)	32 (11.0)	24 (8.3)	3 (1.0)
Checking for carotid pulse	88 (30.3)	76 (26.2)	66 (22.8)	33 (11.4)	24 (8.3)	3 (1.0)
Basic airway skills	81 (27.9)	72 (24.8)	70 (24.1)	44 (15.2)	21 (7.2)	2 (0.7)
Giving rescue breath during CPR	50 (17.2)	92 (31.7)	66 (22.8)	28 (9.7)	40 (13.8)	14 (4.8)
Insertion of an advance airway	30 (10.3)	53 (18.3)	67 (23.1)	38 (13.1)	67 (23.1)	35 (12.1)
Using Automated external defibrillator (AED)	34 (11.7)	34 (11.7)	70 (24.1)	42 (14.5)	61 (21.0)	49 (16.9)
Coordinating a team during resuscitation	31 (10.7)	84 (29.0)	55 (19.0)	37 (12.8)	62 (21.4)	21 (7.2)
ECG reading	42 (14.5)	52 (17.9)	53 (18.3)	47 (16.2)	69 (23.8)	27 (9.3)
Establishing intravenous line	88 (30.3)	88 (30.3)	58 (20.0)	28 (9.7)	19 (6.6)	9 (3.1)
Endotracheal tube suctioning	80 (27.6)	72 (24.8)	62 (21.4)	28 (9.7)	35 (12.1)	13 (4.5)
Providing ventilation using an advance airway	39 (13.4)	54 (18.6)	60 (20.7)	51 (17.6)	57 (19.7)	29 (10.0)
Using basic airway adjunct	63 (21.7)	50 (17.2)	48 (16.6)	38 (13.1)	46 (15.9)	45 (15.5)
Giving intraosseous drugs	52 (17.9)	50 (17.2)	46 (15.9)	37 (12.8)	55 (19.0)	50 (17.2)

Discussion

Bowden and Smith (2017) observed that nurses have many roles and responsibilities in relation to cardiopulmonary resuscitation (CPR), including recognising that a patient is deteriorating; recognising cardiac arrest and commencing CPR while waiting for the resuscitation team to arrive; ensuring the contents of the resuscitation trolley are present, in date and in full working order; and completing documentation for the National Cardiac Arrest Audit in participating healthcare organisations.

A significant finding of the study is that only 5% of the nurses possessed a good knowledge of cardiopulmonary resuscitation, a majority (62%) had fair knowledge, while the remaining (33%) possessed poor knowledge of CPR. This finding, though not impressive is an improvement on the result recorded by Kaihula, et al. (2018) in their study on the

assessment of cardiopulmonary resuscitation knowledge and skills among healthcare providers at an urban tertiary referral hospital in Tanzania; and Varughese and D'Silva (2018) finding among clinical nurses. Kaihula, et al. (2018) concluded that level of CPR knowledge and skills displayed by all cadres and in all departments was poor despite the fact that most providers reported having performed CPR in the past. Similarly, Rajeswaran, et al. (2018) reported markedly deficient CPR knowledge and skills among registered nurses in the three district hospitals in Botswana.

However, the study established no significant relationship between nurses' designation and their knowledge of CPR (p = 0.069) and neither was any significant relationship found between nurses length of service/years of experience and their knowledge of CPR (p = 0.379). A significant relationship was however established between nurses' educational level and their knowledge of CPR (p = 0.046). Similarly, there was a strong significant relationship between speciality area and nurses' knowledge of CPR (p = 0.0001). Nurses working in specialities where they are regularly involved in conducting CPR are likely to be more knowledgeable than those who work in areas where CPR are seldom carried out. Rajeswaran, et al. (2018) finding that healthcare practitioners who reported prior experience performing CPR on an adult patient scored higher on testing than those without (40% [IQR 28–54] versus 26% [IQR 16–42] respectively), aptly buttress this submission.

Results equally showed that a majority (74.1 %) of the nurses have a negative perception of cardio-respiratory emergencies and resuscitation. Only a few (5.2%) have a very positive perception of cardio-respiratory emergencies and resuscitation while the rest of the nurses (20.7%) displayed a positive perception of cardio-respiratory emergencies and resuscitation. This is at variance with Varughese and D'Silva (2018) finding that revealed that only 4(4.5%) of their

participants expressed that initiation of CPR was the responsibility of the doctors and the 12(13.55) who reported it as the responsibility of a combination of health care members or CPR team.

Another notable finding of the study is that none of the nurses rated themselves as having no experience of CPR; 8% rated themselves as 'Novice, 22.8% as 'Advanced Beginner', 30.7% as 'Competent', 31.7% as 'Proficient' and 6.9% rated themselves as 'Expert' at performing CPR. This again is contrary to Rajeswaran, et al. (2018) finding that established a markedly deficient CPR knowledge and skills among registered nurses among nurses in their Botswana study. The differential in skill level may be attributable to the self-reported nature of this study as individuals tend to exaggerate their performance when giving the opportunity to assess themselves. Even at this, the number of nurses that reported their skills' level to be novice and advanced beginner's level is quite substantial and should be a thing of concern.

Conclusion
The present study has shown that about two-thirds of the nurses in the study setting possessed a good knowledge of CPR but the over one-third that had a negative knowledge and reported inadequate competencies is quite weighty. Furthermore, the negative perception of CPR held by the majority of the nurses will need to be addressed through a refresher course and repeated demonstrations if the goal of quality health care will ever be attained.

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