Assessment Of Factors Influencing Nurses' Initiation Of Cardiopulmonary Resuscitation On In-Hospital Cardiac Arrest Patients In Selected Health Facilities Of Kano State Metropolis: A Mixed Study

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Abstract- Cardiopulmonary resuscitation (CPR) and defibrillation are the interventions performed by health care professionals in order to preserve the life of a patient suffering cardiac arrest. These tasks are important to the role of nurses because they are the most common first responders to in-hospital cardiac arrest scenarios. The early initiation of CPR and defibrillation is essential in increasing the likelihood of a patient surviving cardiac arrest**.** The aim of the study is to assess factors influencing nurses' initiation of cardio-pulmonary resuscitation among in-hospital cardiac arrest patients in selected hospitals of Kano State Metropolis. A mixed method design was used for the study. A total of 211 nurses participated in the study. Structured self- administered questionnaire and focused group discussion (triangulation) were implored to collect data. Data collected were imputed and analysis using Statistical Package for Social Science (SPSS) Version 24 & Nvivo 12 Plus. The result of the study revealed an overall good knowledge 71% of CPR. On initiation of CPR 37.9% conduct CPR monthly, 37.9% of nurses uses defibrillator some of the time, while 70.1% of nurses accepts CPR as within the of nursing practice. Some of the barriers to CPR initiation were lack of self-confidence, workload, ethical dilemma. On the other hand, the facilitators were good CPR knowledge, good teamwork, availability of advanced resuscitative gadgets and adequate manpower. There is statistical significance between knowledge of CPR and initiation of CPR (r=0.966; p<0.01). It can be concluded that a significant percentage of nurses have knowledge of both CPR & Cardiac arrest, only little among them do initiate CPR, Based on this there is need to improve on the factors that facilitates the initiation of CPR.

Index Terms- Initiation, Cardiopulmonary resuscitation, Cardiac arrest

I. INTRODUCTION

Cardiac arrest was seen as a severe malfunction or cessation of the electrical and mechanical activity of the heart, which results in almost instantaneous loss of consciousness and collapse (Mehta, 2015). Following a cardiac arrest, each minute spent without cardiopulmonary resuscitation & treatment decreases the likelihood of survival, decrease neurologic and functional outcomes. Thus, the consequences of delayed action can have profound and, in many cases, avoidable ramifications for individuals, families, and communities (Verberne et al., 2018). Each year, cardiac arrest strikes more than half a million people and contributes to avoidable death and disability across the United States; it affects seemingly healthy individuals of all ages, races, and genders, often without warning (American Heart Association [AHA], 2018) . The annual incidence of in-hospital cardiac arrest (IHCA) in Europe is between 1.5 and 2.8 per 1,000 hospital admissions (Paratz et al.,2020). Factors associated with survival are the initial rhythm, the place of arrest and the degree of monitoring at the time of collapse. Survival rates of in-hospital cardiac arrest ranges from 15% to 34% at 30 days / hospital discharge (Gräsner et al., 2021). The importance of prompt recognition of cardiac arrest and initiation of cardio-pulmonary resuscitation has been shown repeatedly as an important step in the management of cardiac arrest(Aparicio et al., 2021). The chain of survival, prompt recognition, early cardiopulmonary resuscitation (CPR), and early defibrillation is indeed of most importance for the survival of cardiac arrest patients (Aparicio et al., 2021). Cardiopulmonary resuscitation (CPR) and defibrillation are the interventions performed by health care professionals in order to preserve the life of a patient suffering cardiac arrest (Cartledge et al., 2020). These tasks are important to the role of nurses because they are the most common first responders to in-hospital cardiac arrest scenarios. The early initiation of CPR and

defibrillation is essential in increasing the likelihood of a patient surviving cardiac arrest (Ghasemi et al., 2021)**.** Most in-hospital cardiac arrests are witnessed by nurses, and in cases of un-witnessed arrests, the first responders are usually also nurses. It is a basic requirement in most institutions for nurses to be trained in Basic Cardiac Life Support (BCLS). Intensive care unit (ICU) nurses are usually further trained to the level of Advanced Cardiac Life Support (ACLS) (Zha et al., 2018). ICU nurses typically initiate CPR and provide defibrillation, while general ward nurses perform CPR until a code-blue team or the ward team arrives to take over the advanced level of care with defibrillation, drug therapy and stabilization of the patient for transfer to the ICU (Rajeswaran et al., 2018).

II. OBJECTIVE OF THE STUDY

I. To assess nurses' level of knowledge on cardiopulmonary resuscitation among nurses in secondary health facilities in Kano State Metropolis.

II. To assess nurses' level of knowledge on cardiac arrest among nurses in secondary health facilities of Kano State Metropolis.

III. To assess the level of cardiopulmonary resuscitation on in-hospital cardiac arrest patients among nurses in secondary health care facilities of Kano State Metropolis

IV. To explore the barriers to nurses' decision to initiate cardiopulmonary resuscitation on in-hospital cardiac arrest patients in selected secondary health facilities of Kano State Metropolis

V. To explore the facilitators to nurses' decision to initiate cardiopulmonary resuscitation on in-hospital cardiac arrest patients in selected secondary health facilities of Kano State Metropolis

Method

A mixed method design was used for the study. The overall purpose and central premise of mixed methods in this study was the combination of quantitative and qualitative approaches to provide a better understanding of research problems and complex phenomena than either approach.

Study area

This study was conducted in Kano Metropolis, Kano State North west Nigeria. Kano state is the commercial centre of Northern Nigeria and is the second-largest city in Nigeria after Lagos

Study population

The study population were nurses working at four health facilities of Kano state metropolis as follows: Abubakar Imam Urology center in Fagge Local government; Murtala Muhammed specialist hospital in Kano Municipal local government; Muhammadu Buhria specialist hospital in Nassarawa local government and Waziri Gidado specialist hospital in Tarauni local government

Sample size

n= z^2pq/d^2.

n= $(1.96)^2 \times 0.73 \times (1 - 0.73)/(0.05)^2$

n= the required sample size

z= standard normal deviate corresponding to 95% confidence level=1.96

p= 73% (0.73), proportion of self-confidence as factor hindering nurses the initiation of CPR (Sjoberg et al., 2015).

q= complimentary probability (1-p= 0.3)

d= sampling error $(0.05)^2$

For population < 10,000

$$nf = \frac{n}{1 + \frac{(n)}{(N)}}$$

Where:

nf = the desired sample size when the population is less than 10,000

n = 303, i.e. the desired sample size when the population is more than 10,000

N = 700, i.e. the estimate of the population size

$$nf = \frac{303}{1 + \frac{303}{700}} = \frac{303}{1 + 0.434} = \frac{303}{1.434} = \textbf{211}$$

Sample size is **211**

Sampling technique

A Multistage probability random sampling technique was used for the study. Multistage sampling is a probability sampling technique that entails two or more stages of random sampling based on the hierarchical structure of natural clusters within the population (Sedgwick, 2015). Meanwhile the sampling technique for the study is under the following stages:

Stage 1. Selection of four local governments out of eight Kano State metropolis local governments: This was achieved by dividing the eight metropolitan local governments of Kano State into four groups, that is two local governments in each group and one local government was be randomly selected from each of the four groups. Moreover, these four selected local government (Fagge, Kano municipal, Nassarawa and Tarauni local governments), that form the inclusion criteria, have two or more secondary health care facilities each.

 Stage 2. Selection of hospitals from local government: Simple random sampling was used to select four health care facilities (Abubakar Imam Urology center in Fagge Local government; Murtala Muhammed specialist hospital in Kano Municipal local government; Muhammadu Buhria specialist hospital in Nassarawa local government and Waziri Gidado specialist hospital in Tarauni local government) in each of the selected local governments. These four facilities were selected from four local governments of Kano State Metropolis

Stage 3. Selection of unit/ wards from the hospital: Systematic random sampling technique was implored to select units & wards for the study. Systematic probability sampling is a method in which sample members from a large population are selected according to a random starting point with a fixed periodic interval, which was calculated by dividing the population size with the desired sample. There were forty wards/units which comprises of medical units (15), surgical units (15), accident & emergency (6) and intensive care units (4). Selection was made after counting every forth. Meanwhile ten units were selected after systematic random sampling.

Stage 4. Selection of respondents from the unit/wards: Convenience non-probability sampling technique was used in

selecting respondents. Convenience sampling is a method of sample collection from conveniently available pool of respondents; members are readily approachable to be a part of the sample.

Research instrument

Two main instruments were used for data collection for this study.

1. Structured questionnaire that was adapted from American Heart Association CPR Guideline 2018, consist of 28 questions was used for the quantitative aspect of data collection.
2. Focused group discussion was used to obtained data from respondents from the qualitative part of the study

The quantitative element of this study constitute a collection of data through a number of scales using questionnaire as a research instrument. The instrument was divided into four major sections; A, B, C, &D.

Section A: focused on Socio-demographic data of the respondents, consist of 8 items.

Section B: addressed the research question on Knowledge level of Cardiopulmonary resuscitation among nurses in selected Kano state metropolis hospitals. It consists of 17 items

Section C deals with knowledge of cardiac arrest among nurses, which consists of 5 items

Section D focused on initiation of CPR among nurses, consisting of 6 items

The survey was used as a screening process to recruit participants that are purposeful in participating in focus group discussion. Focus group discussion method was used with 6-10 respondents using interview guide as an instrument to explore the barriers and facilitators to nurses' decision to initiate cardiopulmonary resuscitation on in-hospital cardiac arrest patients. Triangulation element of this study was appropriate to address the aim of understanding the actions and factors influencing nurses' decision to initiate in-hospital CPR.

The focused group discussion that deals with the qualitative aspect of the study covers three sections as follows:

Section A: deals with the barrier to initiation of CPR among nurses, consisting of 5 items

Section B: deals with the facilitators to initiation of CPR among nurses, consisting of 4 items

Section D: deals with possible changes /recommendation on nurses' decision on initiation of CPR, with 3 items

Inclusion Criteria

The inclusion criteria were nurses working in medical units, surgical units; Accident & emergency as well as intensive care units of the study population area.

Exclusion Criteria

The exclusion criteria were nurse interns, nursing students on posting and nurses on leave.

Validity of research instrument

In achieving validity of the instrument, content validity of instruments was ensured by submitting research instruments to five experts in the field; along with research supervisors review to vet. The study survey questionnaire was adopted from "2018 Guidelines of the American Heart Association for CPR" to achieve further validity. Trustworthiness was instituted to achieve rigor in the qualitative aspect of the study (focused group discussion) to ensure credibility.

Reliability of the research instrument

Reliability of the study was achieved by conducting a pilot study, using ten percent (22 nurses) of the study sample size, on different population with similar characteristics to evaluate the Cronbach alpha, that revealed 0.996 Cronbach Alpha, to ensure the consistency of the instrument. Meanwhile confirmability & dependability of recorded discussion obtained through focused group discussion were ensured by transcription, developing anchor codes, codes and themes to make consistency of meanings; in other to link the research study's findings with reality & to enable the study to achieve data saturation for consistency.

Method of data collection

Two method were used to collect data from respondents in this study (Triangulation). Researcher administered questionnaires were distributed to the participants with the help of research assistant in the quantitative aspect. The focus group discussion (on qualitative aspect) was conducted by the researcher with the help of two research assistants using an interview guide with a small group of respondents of 6-10 having similar characteristics at one point in time. Data accuracy, relevance & meaning, through data recording, transcription and coding to represent information participants provided & at the same vain participants' error, & bias, as well as researchers' error & bias were avoided to achieve conformability & objectivity of the data collected. Confidentiality was guaranteed by storing data in a place where only the researcher will have access to it. Participation of respondents was made voluntarily and details of the objectives of the study were explained to the respondents.

Data analysis

The analysis of the survey data consists of descriptive statistics & inferential statistics by the use of IBM Statistical package for social sciences (SPSS) Version 24, which was presented in tables. Meanwhile the analysis of the focused group discussion data was digitally recorded, transcribed and coded with the use of software program NVivo12 plus. Coding Data by labelling & organizing data to identify themes [thematic].

Ethical consideration

Introductory letter & research proposal was submitted to the department of health research ethical committee, Kano state ministry of health. Ethical approval was collected from Kano State ministry of health, after critical review of the study proposal by the research ethical committee. Strict ethical standards and procedures were adhered to; consent and anonymity of the participants were ensured as well as making it clear to the participants that participation is voluntary.

III. RESULTS & FINDINGS

Socio-demography

Socio-demography of respondents shows majority 140(66.4%) were females, majority 120(56.9%) were Hausas. The table shows that the mean age of nurses was (2.24±1.03) with majority

70(33.2%) were at the age of 31-40. About one-third of the nurses 72(34.1%) were from Accident & Emergency unit, while 33.2% were from Intensive care unit (ICU). Majority 90(42.7%) of the nurses were RN/Specialty, while one quarter of the nurses 52(24.6% were BNSC graduates. The table also shows majority

50(23.7%) of the nurses were at the rank of Principal Nursing officers, about one-third 60(2.8%) of the nurses were working at Murtala Muhammad Specialist hospital. About one -third 64(30.8%) has 11-15 years of working experience. More than a half 150(71.1%) of nurses had Basic Life Support training.

Respondents' level of knowledge on cardiopulmonary resuscitation (n=211)

Variable	Poor		Low		Moderate		Good		Mean ± Std
	F	%	F	%	F	%	F	%	
Recommended high quality CPR	6	2.8	15	7.1	60	28.4	130	61.6	1.55 ± 0.857
Three steps for assessing patient's breath	31	14.7	40	19.0	60	28.4	80	37.9	2.15 ± 1.126
AHA 2018 current sequence of CPR	6	2.8	30	14.2	85	40.3	90	42.7	2.92 ± 0.97
Time for pulse rate evaluation before CPR	11	5.2	30	14.2	80	37.9	90	42.7	2.39 ± 0.793
Artery used to assess pulse in an adult	11	5.2	40	19.0	70	33.2	90	42.7	1.96 ± 0.85
When to perform rescue breathing	40	19.0	41	19.4	50	23.7	80	37.9	2.20 ± 1.14
When to switch CPR roles among 2 rescuers	31	14.7	50	23.7	60	28.4	70	33.2	2.39 ± 1.01
When to initiate compression	30	14.2	49	23.4	61	28.7	71	33.9	2.28 ± 1.16
How to position hands during chest compression	40	19.0	41	19.4	50	23.7	80	37.9	2.29 ± 1.20
AHA 2018 guide on compression per minute	36	17.1	45	21.3	60	28.4	70	33.2	2.54 ± 1.01
Steps in Adult Basic Life Support	20	9.5	60	28.4	61	28.9	70	33.2	2.34 ±1.21

								Mean ± Std
Appropriate steps for AED operation	99	46.9	30	14.2	70	33.2	12 5.7	2.01±0.98
Action to be taken when AED analyses rhythm	2	0.9	30	14.4	70	33.2	109 51.7	2.90±1.18
Compression to ventilation ratio in all ages	11	5.2	40	19.0	70	33.2	90 42.7	2.71 ± 1.31

shows that the mean scores (1.55±0.85) of recommended high quality CPR & majority 130(61.1%) of nurses has good knowledge of the recommended high quality CPR required by AHA on a patient with cardiac arrest. The score on three steps of assessing patient's breath & pulse before commencement of CPR shows the mean scores 2.15 ±1.12 with majority 80(37.9%) of nurses scoring above average; the table also shows majority 90(42.7%) of nurses has good knowledge on the current American Heart Association current sequence of CPR need with a mean scores (2.92± 0.97). The mean score of nurses' knowledge (2.39 ± 0.793) on time for pulse rate evaluation before CPR, shows majority 90(42.7%) has good knowledge. The table also shows most nurses 80(37.9%) with mean score (2.20 ± 1.14) has good level of knowledge on when to perform rescue breathing, it was also shown in the table that majority of nurses 71(33.9%), with mean score (2.28± 1.16) has good level of knowledge on when to initiate chest compression. Moreover, the table shows majority of nurses 70(33.9%) has good knowledge on "when to switch CPR

roles among two rescuers" with a mean score (2.39±1.01). However, the table shows 36(17.1%) has poor knowledge level on "American Heart Association [2018] guide on chest compression sequence per minute during CPR" and majority of nurses 70(33.2%) has good knowledge with mean score (2.54±1.01). The table also shows 20(9.5%) of nurses has poor knowledge on "steps in an adult Basic Life Support" while 70(33.2%) has good knowledge with mean score (2.34±1.21, the table also shows majority 99(46.9%) of nurses has poor knowledge on appropriate steps for AED operation, while 12(5.7%) has good knowledge with mean scores (2.01±0.98) . Furthermore, on "action to be taken when AED analyzes rhythm" shows mean score (2.90±1.18) with majority of nurses 109(51.7%) having good knowledge. The table shows good knowledge of CPR with an overall mean score of 43.59±17.53

Respondents' level of knowledge on cardiac arrest (n=211)

Variable	Poor		Low		Moderate		Good		Mean ± Std
	F	%	F	%	F	%	F	%	
Meaning of cardiac arrest	30	14.2	60	28.4	55	26.1	66	31.3	2.691 ± 1.011
Indicators of cardiac arrest	70	33.2	21	10.0	40	19.0	80	37.9	2.341 ± 0.898
ECG readings that indicate cardiac arrest except	90	42.7	11	5.2	50	23.7	60	28.4	2.246±0.928
Causes of cardiac arrest except	23	10.9	60	28.4	62	29.4	66	31.4	2.810±1.000
Next step for patient who did not respond to call	13	6.2	70	33.2	60	28.4	68	32.2	2.914± 0.921

Table 4.3 shows nurses highest 66(31.3%) level of knowledge on what cardiac arrest means, it also revealed highest level of nurses' knowledge 80(37.9%) on indicators of cardiac arrest. The table

also revealed that 90(42.7%) of nurses has poor knowledge of ECG readings that indicates cardiac arrest, while 60(28.4%) of nurses has good knowledge of ECG readings that indicates cardiac

arrest. Meanwhile, majority of nurses 66(31.4%) has good knowledge on causes of cardiac arrest, however majority of nurses 70(33.2%) has low level of knowledge on next step when patient had cardiac arrest, while 68(32.2%) of nurses has good level of knowledge on next step when patient had cardiac arrest with mean score of 2.914±0.921. The overall mean on nurses' knowledge level of cardiac arrest was 13.0047±4.55286

Respondents' level of CPR Initiation for in-hospital cardiac arrest patients (n=211)

Variable	F	%	Mean±Std
I conduct CPR initiation			
Daily	21	10.0	
Weekly	70	33.2	
Monthly	80	37.9	2.6588±0.89823
Never	40	19.0	
How frequent to you initiate defibrillation			
All of the time	10	4.7	
Most of the time	14	6.6	
A good bit of time			3.7441±1.13427
Some of the time	60	28.4	
A little of the time			
Never	70	33.2	
	50	23.7	
	7	3.3	
CPR is within nurses' scope of practice			
Yes	150	71.1	1.2891±0.45442
No	61	28.9	
Extent you feel prepared to initiate CPR			
Always	40	19	
often	60	28.4	
Sometimes	70	33.2	2.6019±1.13925
Seldom	26	12.3	
Never	15	7.1	
Self- confidence to initiate CPR			
Yes			
No	160	75.8	1.2417±0.42914
	51	24.2	

Respondents' level of initiation of CPR revealed that most of the respondents (37.9%) conduct CPR initiation on in-hospital cardiac arrest patients monthly; 33.2% of the respondents conduct the initiation of CPR weekly; while 19.0% of the respondents never conduct CPR initiation; 10.0% of the respondents conduct CPR initiation daily. On the frequency for the use of defibrillator during CPR: most of the respondents (33.2%) initiate the use of defibrillator some of the time; 28.4% of the respondents initiate

the use of defibrillator a good bit of time; 23.7% of the respondents initiate the use of defibrillator a little of the time; 6.6% of the respondents initiate the use of defibrillator most of the time; 4.7% of the respondents initiate the use of defibrillator all of the time, while 3.3% of the respondent have never initiate the use of defibrillator. On the CPR as scope within the nursing practice, the table showed: majority of the respondents (71.1%) responded 'yes' CPR is within nursing practice, while (28.9%) responded 'no' CPR is not within nursing practice. On the extent to which respondents feel prepared to initiate CPR, the table showed that: most of the respondents (33.2%) feel 'sometimes' prepared to initiate CPR; 28.4% of the respondents feels 'often' prepared to

initiate CPR; 19.0% of respondents feels 'always' prepared to initiate CPR; 12.3% of the respondents feels 'seldom' prepared to initiate CPR; while 7.1% 'never' feels prepared to initiate CPR. On self-confidence to initiate CPR, the table revealed that: majority of the respondents (75.8%)responded 'yes' they have self-confidence to initiate CPR, while 24.2% of the respondents answered 'no' they do not have self-confidence to initiate CPR. Table 4.4.2. shows the respondents' CPR initiation overall mean score (11.53±3.77)

Inferential statistics

Pearson's correlation coefficient between knowledge of CPR & initiation of CP

Variable	Pearson's (r)	P value
KNOWLEDGE OF CPR	.966**	0.01
CPR INITIATION	.966**	0.01

**. Correlation is significant at the 0.01 level (2-tailed).

The table above Shows that knowledge level of CPR (r= 0.966; P<0.01) has a positive correlation with and statistical significance when correlated with initiation of CPR. This means that the higher the knowledge level of CPR, the higher the initiation of CPR.

Pearson's correlation coefficient between knowledge of Cardiac arrest & initiation of CPR

Variable	Pearson's (r)	P value
KNOWLEDGE OF CARDIAC ARREST	.961**	0.01
CPR INITIATION	.961 **	0.01

**. Correlation is significant at the 0.01 level (2-tailed).

The table above shows that knowledge level of Cardiac arrest (r=0.961; P<0.1) has a positive correlation and statistical significance when correlated with CPR initiation. This means that the higher the knowledge level of Cardiac arrest, the higher the CPR initiation.

Qualitative data
The qualitative findings for this research project were presented in two sections, that explored the facilitators & barriers to nurses as in-hospital first responders to initiate CPR.

Nurses' facilitators to initiation of CPR on in-hospital cardiac arrest patients:
Knowledge & confidence
The focused group participants noted that training & confidence were beneficial to nurses in their abilities to readily perform CPR

and defibrillation; however, this training must occur regularly. How often nurses acquire CPR training may impact their level of preparedness, comfort, and confidence with CPR. This may influence their likelihood of initiating life support on a patient with cardiac arrest. Participants (Nurses) notes an example of this:
CPR needs to be done more frequently in the hospital setting, on the unit with drills and reviews. Some nurses outside ICU are terrible, they don't carry out CPR often and they're really not sure of what to do because it's something that doesn't necessarily occur that often, maybe not in their career. They have lost self-confidence on initiating CPR as first respondent to cardiac arrest patient, which resulted in cardiac arrest patients' poor quality of life.
There are a lot of subtle things that you can see happening in a patient that makes you realize that ooh; this patient is not doing well. And you sometimes see it in your day to day nursing job, but you don't always. So to have that extra education just kind of helps

teach you what to look for but also to solidify this panicky feeling I have like this doesn't look good. think the problem is lack of knowledge or lack of experience. For novice nurses, that would be the problem. And solving it is more experienced, more training and unfortunately hands-on as well*

Continuing education is useful because it provides an imitated experience of resuscitation, but it is also important because it allows nurses to develop knowledge of the warning signs and symptoms of cardiac arrest. Recognizing the signs and symptoms of cardiac arrest does not only permit nurses to prevent a potentially life-threatening cardiac event from occurring, but it also facilitates them to enact their CPR skills in a timelier manner.

Team dynamics (teamwork)

 Team dynamics include factors that arise from the interactions between members of a health care   team. Participants (nurses) notes example of this:

Leadership is an essential component of team dynamics because it is necessary to have an individual present who is directing others in the event of a code situation. This implies that as nurses share experiences with other nurses in the same unit, they tend to be able to share the leadership among each other.

With an individual that is better able to share leadership roles as well as to plan, organize, problem solve, and support team members, comes an increased capacity to engage in their role. If you don't have a good leader, things I think can deteriorate quite quickly. And when I say deteriorate, it gets very confusing.

Whether it's the doctor or the nurse, there needs to be the definite leader. When we work as a team with effective communication among nurses and other health personals, it will give nurses the confident to initiate CPR to an in-hospital cardiac arrest patients. Role clarity, and the lack of role ambiguity, may improve the quality and coordination of a resuscitation as a nurse's time in their job progresses; however, this may be insignificant when considering the reasons why a nurse may or may not deploy CPR and defibrillation prior to the arrival of a physician or code team to the scene.

Teamwork was seen as a major facilitator for nurses to initiate CPR on a cardiac arrest patient

Availability of materials & manpower

Availability of materials and manpower influences nurses to initiate CPR. This was stated by the participants (Nurses) during the focused group discussion as follows:

The quality and availability of technology is an important element to enabling rapid nurse-initiated CPR and defibrillation. Technology may include the use of cardiac monitors, the availability of automated external defibrillators, and the use electronic communication systems (i.e. electronic medical records).

Not all hospital units have AEDs, however. Hospital units may have manual defibrillators, which require users to recognize the cardiac rhythm and determine the degree of Joules that need to be delivered for the shock. The availability of AEDs is an enabler to nurses enacting defibrillation in a timely manner.

The hospital unit on which a cardiac arrest occurs influences the propensity of the nurses in that setting of deploying CPR and defibrillation in a timely manner. The location of the event matters because, in general, units care for a specific acuity of patients and this leads to different frequencies of code blue scenarios between these different sections of the hospital.

Respondents' barrier on initiation of CPR on in-hospital Cardiac arrest patients:

Participants (Nurses) during the focused group interview were of the opinion that workload, ethical dilemma, lack of confidence and advanced technology were the commonest barriers to Nurses' initiation of CPR.

On workload: *They feel busy and overwhelmed from the quantity of tasks that must be accomplished and shortage registered nurses during a shift, they may not notice the declining cardiopulmonary status of a patient, as such prompt initiation of CPR will be compromised*

On ethical dilemma: Ethical dilemmas occur when an individual must decide between two or more equally appealing courses of action, but these different choices have values that conflict.

Participants narrated that: *There is always an ethical dilemma when deciding whether or not to start the necessary processes for a patient in cardiac arrest. Patients' family may refuse to consent on CPR intervention, sometimes the patient may be under DO NOT RESUSCITATE, which will complain nurses to initiate CPR during cardiac arrest scenario.*

On lack of self-confidence & fear: Nurses may fear CPR scenarios for many reasons, namely the fear of causing harm to the patient and the feeling of being nervous or anxious due to lack of confidence. Participants stated that '*When you see that [cardiac arrest], it's very scary. Well for me, I've been nursing 10 years, it's always scary. I don't care what anybody says or how experienced they are. For me, each one is scary because you pray for the best and you just don't know what's going to happen'.*

IV. DISCUSSION ON FINDINGS

The findings showed that the mean age of the respondents was 2.25. about two-third of the respondents 140(66.4%)were female and 71(33.6%) were male; this shows the dominance of female gender over male gender in nursing profession. Most 72(34.1%) of the respondents were working in accident & emergency units, while 70(33.2%) were at medical units, 37(17.5%) were at surgical units; and 32(17.2%) works in ICU. The result of the study revealed an overall good knowledge 71% of CPR. On initiation of CPR 37.9% conduct CPR monthly, 37.9% of nurses uses defibrillator some of the time, while 70.1% of nurses accepts CPR as within the of nursing practice. Some of the barriers to CPR initiation were lack of self-confidence, workload, ethical dilemma. On the other hand, the facilitators were good CPR knowledge, good teamwork, availability of advanced resuscitative gadgets and adequate manpower. There is statistical significance between knowledge of CPR and initiation of CPR (r=0.966; p<0.01). It can be concluded that a significant percentage of nurses have knowledge of both CPR & Cardiac arrest, only little among them do initiate CPR, Based on this there is need to improve on the factors that facilitates the initiation of CPR.

V. CONCLUSION & RECOMMENDATION

It can be concluded that a significant percentage of nurses have knowledge of both CPR & Cardiac arrest, only little among them do initiate CPR. Based on this among the recommendation, there should be availability of resuscitative gadgets in most of the secondary health facilities in the state, team work and working in harmoney should be established; government should endevour to provide condusive working environment and should also construct a life support center for training and re-trainning of nurses and other health team memberson CPR.

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