Nurses' Perception regarding Cardiopulmonary resuscitation in intensive care unit

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Abstract

Background: Nurses consider the health care professionals who firstly transact with, identify the need for and initiate cardiopulmonary resuscitation (CPR). Understanding Perception of roles and team performance regarding Cardiopulmonary resuscitation are important for nurses to effectively meet clients' unique needs in CPR. **Aim:** To explore Nurses' Perception regarding Cardiopulmonary resuscitation. **Design:** Descriptive research. **Setting:** The study conducted in trauma intensive care unit and general intensive care unit at Assiut University. **Subject:** all nurses available in trauma intensive care unit and general intensive care unit (85nurses) at Assiut University. **Tools:** One tool was utilized to collect the relevant data, A self-administered questionnaire that examined nurses' perception and divided into four parts, Personal characteristics, nurses' perception toward importance of CPR, nurses' roles and team performance regarding CPR. **Results:** More than two third (75.41%) of nurses had a great perception about CPR With (58.8%) Satisfactory level of nursing CPR Perception. Nurses agreed that Cardiopulmonary resuscitation is important in clinical practice, identified perception of roles and perceptions towards team performance during CPR. **Conclusion:** The nurses had a great perception regarding CPR but they feel that CPR is complex, time consuming, energy consuming and a stressful situation and nurses in CPR team have limited knowledge about DNR (Don't resuscitate). **Recommendations:** Adequately planned in-service training programs related to CPR should be established for improving nurses' knowledge, practice and nurses' ability to think critically during the performance of CPR.

Keywords: Cardiopulmonary resuscitation, Nurses' Perception, Perception of importance, Perception of roles & Perception of team performance.

Introduction

Cardiopulmonary resuscitation (CPR) can be defined as a group of interventions that performed to supply circulation and oxygenation to the body through cardiac arrest incidence **(Goyal, et al, 2020).** The American Heart Association (AHA) in 2015, asserted high-quality CPR in updated emergency cardiovascular care and guidelines for CPR. Initiation early of high-quality chest compressions and ventilation followed by defibrillation within 2 minutes can improve patient survival to hospital discharge. The delay of recognition of cardiac arrest to chest compressions decreases survival of patient by 10% every minute **(Chu, 2019).**

When the patient is unresponsive, is not breathing normally (or only gasping) and does not have a pulse, this patient is in cardiac arrest **(Markenson et al, 2019).** Cardiac arrest (CA) considers an incident that threats life and accounts for 15% of the mortality worldwide. It estimated to be more common among patients with pre-existing cardiovascular disease **(Zayed & Saied, 2022).** Cardiovascular diseases (CVD) such as heart attack and stroke are known to

be the world's leading cause of death. **(Fariduddina & Siaub, 2021).**

Resuscitation science is very complex and has its own features that depends on the country and culture where in it is applied **(Tobase et al, 2017),** that needs coordination of team members. A strong team leader is required for organizing the group, delegating tasks, and monitoring performance of team members. The effective teamwork decreases undesirable errors caused by a failure to clearly communicate. **(Chu, 2019)**

Usually, nurses are the first responders and carry out the leadership role when the patient arrives to the hospital **(Chu, 2019).** When we asked a broad range of in-hospital cardiac arrests (IHCA) first-responders through multiple disciplines about their experiences with cardiopulmonary resuscitation care in order to catch directly their perceptions on performance, we found a significant gap because of two reasons: First, perception drives behavior of individual and institutional culture, and nearly all strategies of process improvement, from standardized reporting to guideline implementation, depending partly on the understanding and cultural managing. Second, IHCA

is a complicated clinical process that includes team members who sometimes do not know each other before the arrival of a cardiac arrest victim. Due to these emergency circumstances, success does not depend a lot on the performance of an individual provider as it is the comprehensive interactions of various providers and the system. **(Mullangi et al, 2020).**

Nurses' Perception defined as the recognition and interpretation of information. Also perception includes how the nurse responds to this information. Nurses can consider perception to be a process in which they take in information from their environment and use that information in order to interact with their environment. Perception allows them to take the information in and make it into something meaningful **(Williams, 2017).** Nurse's perception of something is the way that nurse think about it or the impression that nurse has of it **(Collins dictionary, 2017).**

From what was previously mentioned, we can said that perception of cardiopulmonary resuscitation is identifying, organizing and interpreting of information in order to understand the presented information about CPR. Thus, perception can be divided into two processes, (1) the processing of the sensory input, which transforms low-level information to higher-level information (e.g., extracts shapes for object recognition), (2) the processing that is connected with a person's concepts, expectations and selective mechanisms that affect perception **(Wikipedia, 2017)**.

Actually, the ability of nurses and other health care professionals to effectively deal with cardiac arrest broadly depends on their knowledge and training related to CPR procedure. Adequate knowledge and training of CPR among the healthcare professionals is important for performing immediate and effective CPR, consequently improving patients' survival who experience cardiac arrest. So, having adequate knowledge, skills, and expertise in CPR procedure between critical care nurses are important for enabling them to perform effective CPR when needed. **(Alnutaifi, 2021)**

Significance of the study
The American Heart Association in its 2020 guidelines Highlights for CPR and ECC reported that about 1.2% of adults who admitted to hospitals of US (United states) suffered in-hospital cardiac arrest (IHCA) **(Lavonas, et al., 2020),** It estimated to affect approximately 200,000 patients annually in the United States **(Mullangi et al, 2020)** .

In addition, when the American Heart Association had updated Statistics of heart and Stroke in 2022, the report stated that cardiac arrest still a public health crisis **(AHA, 2022).**

In Egypt, it is evaluated that hypertension and coronary heart disease can affect about 8.5% and 25% of the total population, thus, raising the liability to sudden cardiac arrest events . It was estimated that the cardiovascular diseases mortality rate was 46.2%, and in 2015 up to million people suffered from serious cardiac arrest. On average, a victim starts to suffer irreversible brain damage four minutes after the cardiac arrest occurs and if no CPR administered. Every minute that an arrested victim does not receive immediate CPR, his chances for survival drop by 10 percent. Performing effective CPR from a witness could double survival chances of a cardiac arrested victim. **(Zayed & Saied, 2022)**

Aim of the study
This research study aimed to explore the perception of nurses on Cardio-Pulmonary Resuscitation.

Research question
What is the nurses' perception towards Cardio-Pulmonary resuscitation?

Subjects and Method:
Research design:
Descriptive research design was adopted to conduct this study.

Setting:
The study was conducted in trauma intensive care unit and general intensive care unit at Assiut University.

Sample:
All nurses available in general intensive care unit and trauma intensive care unit at Assiut University (85 nurses) were recruited after they accepted participating in the study.

Field work:
Data collected through January – June 2022, approximately six months, where the researcher was available three days a week.

Tools for data collection:
One tool used for this study: A self-administered questionnaire for nurses' perception regarding CPR.

This tool is developed by the researcher after reviewing the relevant literatures (**Filho, et al.,2015**), (**O'Donoghue, et al., 2015**) and (**AL Nasri & AL Bulushi,2020**).That focused on the perception of nurses toward the practice of cardio-pulmonary resuscitation, including (4) parts (36) items covered the following areas**:**

I. **Part (1):** Was designed to elicit personal information from nurses that included (9 items) as following: (gender, age, marital status, professional status, educational level, experience years, place of work, obtaining of CPR courses and frequency with which CPR was performed).

II. **Part (2):** Was designed to identify perception of nurses toward the importance of Cardiopulmonary

resuscitation (CPR) in clinical practice included (14 items) such as: (awareness about the importance of CPR in clinical practice, believing that CPR is a basic emergency need for the betterment of mankind and health status, importance of having orientation on CPR to every novice nurse in the unit, understanding of what CPR is and the risks/ benefits, feeling that CPR is a stressful situation, feeling that CPR is complex, time consuming and energy consuming ....Etc.). **Scoring system was done by using Likert scale** for each item that ranged as following: (Strongly agree = 5, Agree = 4, Undecided = 3, Disagree = 2, Strongly disagree = 1)

III. **Part (3):** Was designed to identify perception of nurses' roles during CPR included (4 items) as following: (nurses'role during CPR, Is your role clearly defined? How was your role assigned?, Are team member roles clearly defined?). **Scoring system was done** by asking the nurse to read this items and answer by either yes or no (yes = 1, no = 0).

IV. **Part (4):** Was designed to identify perception of nurses toward team performance, communication, teamwork in Cardiopulmonary resuscitation included (9 items) such as (access to the resuscitation team members (doctors, anaesthetists) , effective communication Skills between team members, effective teamwork Skills, team members asking each other for help, the team members support each other during CPR …. Etc.) . **Scoring system was done by using Likert scale** for each item that ranged as following: (Strongly agree= 5, Agree= 4, Undecided= 3, Disagree= 2, Strongly disagree= 1)

Scoring system for total perception:
Total score for total perception was between zero and 145, the total score was determined based on the following: (Less than 75% = unsatisfactory level, and ≥75% = satisfactory level).

Method
Preparatory phase
1. Permission was taken from the responsible authorities to conduct the study after explanation of the study's aim and nature.
2. Construction of self-administered questionnaire for data collection after reviewing the relevant literature.
3. **Validity of content:** the tool was tested for content validity by the jury of 5 specialists in the field of critical care nursing and critical care medicine from Assiut University then the tool was prepared in its final form and tested for its reliability.

4. **The reliability:** was tested for (**tool one**) A self-administered questionnaire for nurses' perception regarding CPR: using internal consistency for the tool which was measured using Cronbach's test, (r = 0.725) which its internal consistency "acceptable".

5. **The pilot study:** A pilot study was done to test the applicability and clarity of the tool of the study. It was carried out on nine nurses (10% of the study sample). The data which obtained from the pilot study were analyzed and no necessary modifications were done. Additionally, the sample of pilot study was omitted from the study.

Ethical Considerations
- The study followed ethical principles in clinical research and a research proposal was confirmed by the ethical committee of the Faculty of Nursing.
- Oral consent was obtained from all nurses participated in the study, after explanation of the nature and the purpose of the study and its expected outcomes.
- Participant nurses were informed that they have the right to refuse participation or withdraw from the study without any rational any time.
- The privacy of participant nurses was assured through maintaining confidentiality and anonymity of the collected data during all phases of data collection.
- There was no risk of study subjects during the application of the study.

2- Implementation phase:
- Data were collected at trauma intensive care unit and general intensive care unit at Assiut University.
- The tool filled through interviewing with studied nurses during morning, and after noon shifts.
- The aim of the study was explained to the nurses before giving the questionnaire and asked the studied nurses for answering the questions.
- Assessment of the nurses' perception questionnaire (Tool one) was given to the nurses by the researcher at the beginning of their shift and collected after a period arranged with each participant according to their convenience.

Statistical analysis
The data of the study were analyzed for normality using the Anderson-Darling test and for homogeneity differences before more statistical analysis. The categorical variables was described, as demographic data of the studied nurses, by **number and percent** (N, %), where continuous variables were described by the arithmetic mean and standard deviation **(Mean, SD)**. All analyses were performed with the **IBM SPSS 20.0** software.

Results

The results of the study are presented below:
Table (1): Distribution of the studied nurses according to their Socio-demographic Characteristics (No = 85)

|	No	%
Gender		
Male	0	0
Female	85	100
Age group		
From 20 to < 30 years	74	87.1
from 30 to < 40 years	6	7.1
from 40-50 years	5	5.8
Marital status		
Single	30	35.3
Married	51	60.0
Divorced	2	2.4
Widow	2	2.4
Professional status		
Nursing	61	71.8
Head Nurse	24	28.2
Education Level		
Nursing Diploma	5	5.9
Nursing Technical institute	55	64.7
Bachelor	24	28.2
Doctorate	1	1.2
Experience years		
Less than one year	10	11.8
From 1 year to less than 3 years	24	28.2
From 3 years to less than 5 years	15	17.6
From 5 years to less than 10 years	18	21.2
10 years and more	18	21.2
Place of work		
Trauma ICU	29	34.1
General ICU	56	65.9
Obtaining of CPR training courses		
Yes	66	77.6
No	19	22.4
Frequency of CPR which was performed		
Never	28	32.9
Daily	2	2.4
Weekly	55	64.7
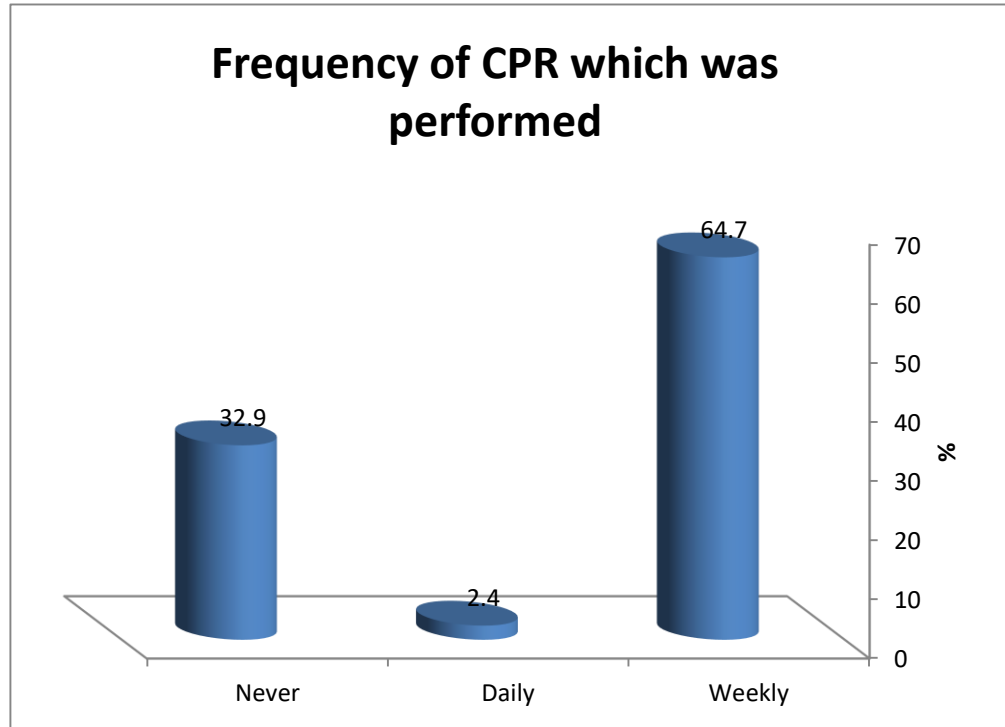
Figure (1): Distribution of frequency of CPR which was performed by nurses

Table (2): Distribution of general questions to identify nurses' perception towards the importance of Cardiopulmonary resuscitation (CPR) in clinical practice (No = 85)

ITEM	Strongly disagree		Disagree		Undecided		Agree		Strongly agree	
	No	%	No	%	No	%	No	%	No	%
Are you aware about the importance of CPR in clinical practice?	2	2.4	0	0.0	0	0.0	39	45.9	44	51.8
Do you believe that CPR is a basic emergency need for the betterment of mankind and health status?	2	2.4	2	2.4	0	0.0	44	51.8	37	43.5
Do you think it is important to have orientation on CPR to every novice nurse in the unit?	2	2.4	0	0.0	0	0.0	38	44.7	45	52.9
Are you clearly understanding of what CPR is and the risks/ benefits ?	4	4.7	0	0.0	8	9.4	45	52.9	28	32.9
Do you feel that CPR is a stressful situation?	4	4.7	12	14.1	6	7.1	45	52.9	18	21.2
Do you feel that CPR is complex, time Consuming and energy consuming?	4	4.7	6	7.1	0	0.0	37	43.5	38	44.7
Are you competent enough to provide CPR (have the ability to respond quickly and effectively to cardiac arrest situation rests)?	4	4.7	7	8.2	6	7.1	40	47.1	28	32.9
Are you confident enough to provide CPR ?	6	7.1	9	10.6	11	12.9	39	45.9	20	23.5
Do you know what is "DNAR"?	15	17.6	40	47.1	17	20.0	3	3.5	10	11.8
Is there any policy available on "DNAR"?	16	18.8	30	35.3	28	32.9	4	4.7	7	8.2
If you had a good knowledge of CPR, could you hesitate to use it whenever it was needed?	15	17.6	13	15.3	9	10.6	32	37.6	16	18.8

ITEM	Strongly disagree		Disagree		Undecided		Agree		Strongly agree	
	No	%	No	%	No	%	No	%	No	%
Would you like to participate in CPR awareness program and have life saving experience?	0	0.0	3	3.5	1	1.2	42	49.4	39	45.9
Do you think that knowledge about correct CPR procedure is mandatory to all health care?			2	2.4	8	9.4	33	38.8	42	49.4
Do you think that teaching and mastering CPR intervention should be made mandatory to all nursing and medical undergraduates?	0	0	4	4.7	4	4.7	16	18.8	61	71.8
Total	**74**	**6.22**	**128**	**10.76**	**98**	**8.24**	**457**	**38.40**	**433**	**36.39**

Table (3): Distribution of questions to identify nurses' perception of roles during cardiopulmonary resuscitation (No = 85)

ITEM	No	%
What is your role during CPR? #		
Record events	38	44.7
Administer cardiac medication	66	77.6
Perform compressions	44	51.8
Support family	32	37.6
Perform defibrillation	58	68.2
Prepare intubation medication	39	45.9
Interpret code algorithms	25	29.4
Prepare cardiac medication	43	50.6
Alert/update family on status	35	41.2
Manage code cart	35	41.2
Prepare laryngoscope/endotracheal tube for intubation	46	54.1
Provide ventilations	34	40.0
Administer intubation medication	55	64.7
Perform intubation	31	36.5
Serve as team leader	30	35.3
Obtain IV access	50	58.8
All of previous	25	29.4
Is your role clearly defined?		
Always	27	31.8
Often	29	34.1
Sometimes	20	23.5
Occasionally	6	7.1
Never	3	3.5
How was your role assigned?		
By team leader	24	28.2
Self-identified	45	52.9
Other	16	18.8
Are team member roles clearly defined?		
Always	19	22.4
Often	30	35.3
Sometimes	26	30.6
Occasionally	5	5.9
Never	5	5.9

 # More than answer

Table (4): Distribution of questions to identify nurses' perceptions towards team performance, communication, teamwork in Cardiopulmonary resuscitation (No = 85)

ITEM	Strongly disagree		Disagree		Undecided		Agree		Strongly agree	
	No	%	No	%	No	%	No	%	No	%
You get access to the resuscitation team members (doctors, anaesthetists) as soon as possible during CPR	0	0.0	6	7.1	4	4.7	45	52.9	30	35.3
Effective communication Skills between team members (Use names, appropriate body language, appropriate tone of voice).	5	5.9	0	0.0	14	16.5	43	50.6	23	27.1
Effective teamwork Skills	4	4.7	0	0.0	2	2.4	34	40.0	45	52.9
Team members asking each other for help	0	0.0	0	0.0	2	2.4	50	58.8	33	38.8
The team members support each other during CPR	0	0.0	0	0.0	2	2.4	36	42.4	47	55.3
Team leader receptive to new ideas	4	4.7	2	2.4	16	18.8	37	43.5	26	30.6
Verbalizing a new treatment plan	4	4.7	4	4.7	12	14.1	34	40.0	31	36.5
Debriefing post code	4	4.7	3	3.5	15	17.6	33	38.8	30	35.3
The team followed approved standards/guidelines.	4	4.7	2	2.4	14	16.5	46	54.1	19	22.4
Total	**25**	**3.27**	**17**	**2.22**	**81**	**10.59**	**358**	**46.80**	**284**	**37.12**

Table (5): Descriptive of nurses' perception levels related CPR (No = 85)

Item	Max Score	Mean ± SD	Range	Mean%
Perception of nurses towards importance of Cardiopulmonary resuscitation (CPR)	70	54.36±6.79	34-70	77.66
Identify nurses' perception of roles during Cardiopulmonary resuscitation	30	17.87±7.28	4-30	59.57
nurses' perceptions towards team performance, , communication, teamwork in Cardiopulmonary resuscitation	45	37.11±6.15	18-45	82.46
Nursing CPR Perception	145	109.34±16.06	64-132	75.41

Table (6): Distribution of nurses' perception levels related CPR (No = 85)

Nursing CPR Perception	Max Score	No	%
Unsatisfactory	Less than 75%	35	41.2
Satisfactory	≥75%	50	58.8
Mean ± SD (range)	**145**	**109.34±16.06(64-132)**	
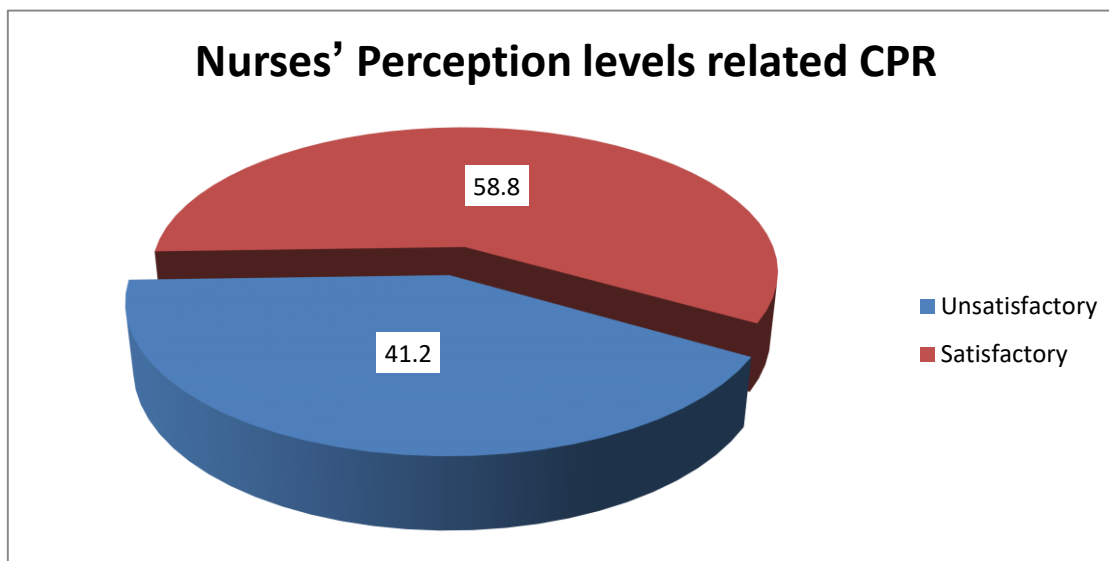
Figure (2): Distribution of nurses' perception levels related CPR

Table (1): Demonstrates personal data of studied nurses and show that all studied group were female with percentage 100% , more than half of groups aged between 20 to < 30 years with percentage 87.1% , their marital status were single with percentage 35.3% and married with percentage 60.0% and about 71.8% of group are nurses while 28.2 % are head nurses , and about 64.7% had technician education level , and about 28.2 % of group had 1to < 3 years of experience while 21.2% had 5 - 10 years of experience , and about 65.9% of group working in general ICU while 34.1% working in trauma ICU . Most of group had CPR training courses with percentage 77.6% and about 64.7% were performing CPR weekly.

Figure (1): Illustrates that 64.7% of nurses were performing CPR weekly and 2.4% were performing CPR daily, while 32.9% of studied nurses were never performing CPR.

Table (2): Clarifies that nurses agreed on the importance of Cardiopulmonary resuscitation (CPR) in clinical practice with percentage 38.40%, while others are strongly agree with percentage 36.39%.

Table (3): Shows that plurality of nurses reported that their role were clearly defined during CPR, such as 77.6% can administer cardiac medication, while 68.2% can perform defibrillation, in addition to 64.7% can administer intubation medication (as the nurse can do more than one role). Most of nurses (52.9%) reported self-assigning of their roles during CPR, but nurses states their perception about roles of other team members as being often clearly defined with percentage of 35.3%.

Table (4): Reports that nurses agreed on that they can identify perceptions towards team performance during CPR performance with percentage 46.80%, while others are strongly agree with percentage 37.12%.

Table (5): This table shows that more than two third (75.41%) of nurses had a great perception about CPR with Mean ± SD (109.34±16.06).

Table (6): Illustrates the level of nursing CPR perception, as 58.8% of nurses have satisfactory level while 41.2% of nurses have unsatisfactory level.

Figure (2): Shows the level of nursing CPR perception, as 58.8% of nurses have satisfactory level while 41.2% of nurses have satisfactory level.

Discussion

This discussion will cover the main result findings as follow:

As regard to nurses' characteristics (sex), the present study reported that; All of studied nurses were females, This is in the same line with (**Moghadam et al., 2020**) who reported that the majority of nurses in his study were female (96.2%).

The study clarified that more than three quarter of the participating nurses aged between 20 to < 30 years old, this result matched with (**Alharbi et al., 2016**) who found age to be bimodal; as slightly less than half of participants were 26–30 years (48%), and more than third of participants were 20–25 years (40%). But, this was not in congruent with (**Bower et al., 2018**) who mentioned that; the administrators selected older age nurses to be able to perform main tasks effectively in the Critical care units.

According to the present study, slightly more than half of participating nurses are married, as well (**Ying et al, 2020**) mentioned that the critical care nurses (CCNs) were mostly female, married, and The largest group of nurses came from the adult ICUs. As related to qualification the majority of participating nurses were technical degree, This finding was not in the same line with (**Darawad & Asal, 2019**) who stated that the majority of nurses who are working in ICU in general had bachelor degree in nursing.

About the third of studied nurses had 1 to < 3 years of experience and 15% of them had 3 to < 5 years of experience ; this not in congruent with (**Okumura et al., 2022**) who included 211 nurses in his study ; 62.6% had 1–5 experience years in critical care nursing. Slightly more than three quarters of studied nurses had CPR training courses and this result in agreement with (**Peyrovi et al., 2020**) who revealed that the highest percentage of participants in his study had participation in more than two training courses of cardiopulmonary resuscitation.

This study states that nearly two thirds of studied nurses performed CPR weekly, while rest of them never performed CPR, these findings like the study of (**Ihunanya et al. 2020**) that showed more than half of the respondents (65.2%) had practiced CPR while about third of the respondents (34.80%) had not practiced CPR. Also (**Guteta, 2022**) confirmed that the involvement in CPR and the frequency with CPR was performed had a significant association with good practice. When nurses' involvement in CPR practice was active or rare, we found that nurses who never involved in CPR practice are less likely three and four times than those who have good practice. These results can be confirmed by the fact that when health professionals apply frequently their knowledge they have a greater susceptibility to use their knowledge to practice the skill.

According to the present study results, nurses agreed that they can identify perceptions towards the importance of CPR performance, as it consider a basic need in emergency, human health status betterment. This is similar to (**Vural et al. 2017**) who reported that nursing students had a great knowledge about the purpose and importance of CPR.

The most of participated nurses in our study agreed that, it is important to have orientation on CPR to every novice nurse in the unit , it is mandatory for being knowledgeable about correct CPR procedure to all health care professionals, clearly understanding of what CPR is and the risks/ benefits, so they are competent enough to provide CPR and confident enough to provide CPR, but they feel that CPR is complex, time consuming, energy consuming and a stressful situation, so approximately half of nurses hesitate to use CPR whenever it was needed. This finding conforms with the main findings of the study of **(Silverplats, et al. 2022)** that most of health care professionals (HCPs) expressed their confident in their knowledge about CPR, could know what to do, and when needed they can take command in situations of cardiac arrest. A third of the HCPs felt anxious about making mistakes or causing any complications. The anxiety and stress were prevalent when connecting to the last real-life cardiac arrest situation. In addition to **(Koželj, et al. 2022)** who found that 35.6% of the respondents strongly felt that cardiopulmonary resuscitation was complex and time consuming, more than half of the participants reported that cardiopulmonary resuscitation was sapping of energy.

Slightly more than half of participated nurses didn't know what is "DNAR" (Don't attempt resuscitation) and there is no any policy available on "DNAR". This finding is analogous to the study of **(Goodarzi, et al. 2022)** who stated that majority of nurses in CPR team have limited knowledge about DNR (Don't resuscitate) and ToR (Termination of resuscitation) and they are not competent enough to make appropriate decisions during CPR. These matters are owing to the deficiency of presence of clear clinical guidelines for CPR in addition to the fear of CPR staff about the legal consequences of DNR and ToR. As well as other study of **(Nankundwa & Brysiewicz, 2017)** highlighted that the nurses not involved in the process of DNR decision-making, their results indicate that the doctors had the direction of discussion and decision-making concerning DNR orders; the nurses' participation was constricted.

This study showed that most of nurses mentioned that Their role were clearly defined during CPR, such as more than three quarters can administer cardiac medication, while more than two thirds can perform defibrillation, in addition to 64.7% can administer intubation medication (as the nurse can do more than one role). More than half of nurses (52.9%) reported self-assigning of their roles during CPR, but they perceived roles of other team members as being often defined clearly with percentage of 35.3%. Similar results were also found in another study by **(O'Donoghue, et al. 2015)** where they found that

nurses in critical care clearly recognized their roles regarding to care and treatment provided in the setting of critical care. That roles mainly involved defibrillation implementation, cardiac and intubation medications preparation and administration, and managing the code cart. As well most nurses reported self-assigning their roles during CPR, but nurses states their perception about roles of other team members as being clearly defined only occasionally or sometimes.

This is not in the similar line of the main finding of the study of **(Cumpian, et al.2020)** who mentioned that higher-performing hospitals assured the nurses' role as team members of resuscitation, bedside first responders, and administrative leaders. Also the study of **(Guetterman, et al. 2019)** considered that nurses played three major roles in in-hospital cardiac arrest (IHCA) response: bedside first responder, team member of resuscitation, and administrative or clinical leader.

The most of nurses in the present study agreed on that they can identify perceptions towards team performance during CPR performance with percentage 46.80%, while others are strongly agree with percentage 37.12%. This matched with **(King et al., 2020)** view that it is important for nurses to work in integration with team members therefore the health and well-being of patients can be reinforced and maintained. The researcher view that when a team of healthcare work well together, this results in increased clinical effectiveness, more service responsiveness, and outcomes improving.

Based on the perceptions of the participants in the study of **(Brahmajee, et al. 2018)** who identified four broad themes that distinguish resuscitation teams. That themes reflected (1) team composition and roles, (2) team design, (3) leadership and communication, and (4) education and training.

 Vatnøy, et al., 2019, agreed that nurse recognized the problems of patient that need a level of specialized experience for the patient's outcomes, nurse through previous experience, cooperates with other team members for solving the problems and teach, train and advise other nurses during team meetings or processes of problem solving. Due to complex nature of patient care during CPR, It requires collaboration of different levels of nurses' care.

Murphy, et al., 2019, had demonstrated changeful roles and performance of nurses as team members during CPR. Clear communication and Leadership are highly significant to ensure health care providers who are unfamiliar with each other or have never worked together are able to function as a team**.**

This is not match with, **(Toronto & LaRocco, 2019)** who found that nurse respondents did not recognized

some roles of team members regarding CPR. As well as **(Perkins et al., 2021)** who reported that often there is confusion and ambiguity of roles for code team members, ineffective teamwork and may be communicating poorly result in poor patient outcomes. To optimize performance of the team, firstly, understand the expansion and nature of role ambiguity between members of the code team.

According to the present study, more than half of nurses have satisfactory level of CPR perception, that matched with results of **(Orukwowu, et al. 2022)**, as the respondents had positive perception towards cardio-pulmonary resuscitation.

In final , the present study allowed us evaluate perceptions of first-responders (nurses) after IHCA and examined three important aspects of perception including perception toward importance of CPR, role perception, perception toward team performance. It allowed us to understanding themes that arose from their perceptions, like complicated feelings toward performing CPR as feeling that CPR is complex, time consuming, energy consuming and a stressful situation; In addition to some complicated issues like health team coordination. Thus, it will help us later to develop new areas around matters identified by nurses who are first-line responders to provide a framework to guide resuscitation care improvements, and meet the unique nature of cardiac arrest crisis. This supported by the study of **(Mullangi et al, 2020).**

Conclusion

According to the results of the current study, The studied nurses are agreed on the importance of cardiopulmonary resuscitation (CPR) in clinical practice, but they feel that CPR is complex, time consuming, energy consuming and a stressful situation, some nurses hesitate to use CPR whenever it was needed, and nurses in CPR team have limited knowledge about DNR (Don't resuscitate) . The nurses can identify their roles during CPR mainly administer cardiac medication then perform defibrillation, in addition to administer intubation medication. The nurses agreed that they can identify perceptions towards team performance, communication, teamwork in Cardiopulmonary resuscitation during CPR performance.

Recommendations

In light of the findings of the present study, the following recommendations were proposed:

▪ Orientation on CPR to every novice nurse, in addition to periodic checking of the nurse's performance regarding CPR by the hospital training team in order to evaluate the nurses' level and encourage nurses to use CPR whenever it was needed.

▪ That kind of in-service education about CPR must be specifically designed to meet the nurses' needs and deal with their personal differences and conditioning.

▪ Providing of clear clinical guidelines for CPR especially "DNAR" (Don't attempt resuscitation) enhance nurses to be competent enough to make appropriate decisions during CPR.

▪ The regular reading of up-to-date references about CPR should be added to nurses' routine obligations, like (periodicals, textbooks, etc.).

▪ The clearly defined roles during CPR and the cooperation of healthcare team, results in increased clinical effectiveness, more service responsiveness, and outcomes improving..

▪ Further researches should be done on a vast sample to generalize the results of this study and follow-up through 1 year to gain a better understanding of nursing perception regarding CPR.

Limitations: The researchers declare that there is no Limitations of the study.

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