STUDENTS' KNOWLEDGE TOWARD CARDIO-PULMONARY RESUSCITATION : A CROSS- SECTIONAL STUDY

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Abstract: Background: One life-saving method that is essential for handling numerous crises is cardiopulmonary resuscitation. Since a patient's survival greatly depends on early intervention with the cardiopulmonary resuscitation technique, CPR is an essential skill that all members of the medical community, including students, should learn.

Objectives: The aim of the study is to assess the students' knowledge toward cardio-pulmonary resuscitation.

Methodology: A descriptive study design has been carried out using an assessment approach from (December 5th , 2023 to April 20th , 2024) at Higher Institute of Health in Al- Diwaniyah city to assess the students' knowledge toward cardio-pulmonary resuscitation. A non-probability (purposive) sample of (93) student .The questionnaire was designed to assess the students' knowledge toward cardio-pulmonary resuscitation from two parts (Socio-demographic(5 items), Reproductive history(8 items) and students' knowledge toward cardio-pulmonary resuscitation (15 items)).

Results: The results of this study indicate that lessthan half of students (48.38%) reported having a fair level of knowledge, followed by those who reported having poor levels (27.95%) and having good knowledge (23.65%).

Conclusion: The study concluded that revealed suboptimal CPR knowledge among Higher Institute of Health students. in Al-Diwaniyah City ,Iraq.

Recommendations: The study recommends that the scientific departments at the Higher Institute of Health in Al-Diwaniyah City are urged to have Longitudinal studies necessary to follow up on the changes in the knowledge levels of the students regarding CPR even after graduation.

Key words: Cardio-Pulmonary Resuscitation, Students' Knowledge.

Introduction

Cardiopulmonary resussitation (CPR) is a life-saving emergency technique that, in the event of a sudden cardiac arrest, employs chest compressions and artificial breathing to maintain blood flow to the brain. Nevertheless, even with the use of CPR techniques, current research has shown that survival rates for outpatient heart attacks and inpatient heart attacks remained low at 11.4% and 23.8%, respectively[1].

The cardiac arrest considered most common cause of medical emergencies in the cardiovascular system. A person may die suddenly from cardiac arrest if their heart's electrical system malfunctions and creates irregular beats. Because the onset of symptoms is so rapid, it is impossible to predict with precision when a person may experience cardiac arrest [2].

Inadequate management of cardiac arrest can result in irreversible brain damage and, ultimately, death from decreased blood flow. The method known as cardiopulmonary resuscitation (CPR) is used to revive a person who has suffered a sudden cardiac arrest. This is done by providing oxygen to the all lungs and doing chest compressions to drain the blood, or by administering breathing aid, until the breathing and heart rate return to normal and medical help comes [3].

Cardiopulmonary resuscitation (CPR), which attempts to restore blood circulation throughout the body and avoid organ failure, particularly in the brain, is the most appropriate care of this situation. In cases of cardiac arrest, the initial few minutes are crucial for improving the effectiveness of CPR. According to a 2015 American Heart Association (AHA) study, the success rate of treating cardiac arrest increases with the timing of CPR [4].

Globally, out-of-hospital cardiac arrest (OHCA) affects 55 out of every 100,000 individuals. It is a serious public health issue, with a survival rate of less than 10% to date, however it varies greatly from community to community [5].

One of the main factors preventing laypeople from being prepared to attempt resuscitation is believed to be a lack of adequate knowledge and abilities. Good training of nursing students and nursing medical staff is the top priority because it is widely acknowledged that effective layperson CPR training is crucial to improving survival after OHCA and increasing the number of people willing and able to help in a real-life emergency. Since nurses are the ones at the patient's bedside, their superior training is more important to patient survival than doctors'. Additionally, and thankfully, nursing educators have long placed a high priority on cardio-pulmonary resuscitation (CPR) programs [6].

Nurses need to be knowledgeable about, equipped for, and up to date on life-saving techniques in order to react to cardiac arrest situations quickly and efficiently. This may involve undergoing repeated CPR training. Particularly, how nurses and nursing students feel about trying cardiopulmonary resuscitation (CPR) plays a significant role in how quickly and effectively cardiac emergencies are handled. Therefore, it would be appropriate to investigate the characteristics associated with CPR performance by including the first responder's attitude toward CPR practice as a variable [7].

The most common cause of death in Iraq is still heart arrest. In actuality, between 0.5 and 1 occurrences of in-hospital cardiac arrest are thought to occur for every 10,000 people in Iraq, which leads to around 383000 fatalities every year [8]. The condition that causes cardiac arrest the most frequently (88%) of all heart disease-related deaths happens unexpectedly, and it frequently represents the victim's initial heart disease symptom. Out of all cardiac arrests, 60% take place outside of a hospital. There aren't many studies to support this claim, but 911 emergency services are completely absent in Iraq [9].

Methodology

A descriptive study design has been carried out using an assessment approach from (December 5th , 2023 to April 20th , 2024) at Higher Institute of Health in Al- Diwaniyah city to assess the students' knowledge toward cardio-pulmonary resuscitation. A non-probability (purposive) sample of (93) student at Higher Institute of Health in Al-Diwaniyah city were selected

The research tool is a questionnaire created in accordance with the study objective to assess the Students knowledge toward Cardio-Pulmonary Resuscitation. The questionnaire has been designed and constructed

by the researchers after reviewing related literatures and previous studies. It is composed of two parts which include:

Part I: Socio-demographic:

The initial section pertains to the socio-demographic information of the students and has five elements including (age, gender, department, calss and marital status).

Part II: Students knowledge toward Cardio-Pulmonary Resuscitation ;

This part was constructed assess the Students knowledge toward Cardio-Pulmonary Resuscitation. It consisted of one domain that contains (15) multiple-choice questions.

following its presentation to 13 experts who assessed the questionnaire's validity . The experts gave the questionnaire high marks, and the changes and suggestions they accepted were taken into account. In order to evaluate the questionnaire's reliability and to make sure the sample's questions were clear, a pilot research was then carried out among 10 students one month prior to the sample collection procedure. The pilot study's results indicated that the study's reliability (Crombach's alpha) was 0.86, an acceptable percentage, and that it took 15 to 20 minutes to complete the questions.

The researchers convened with the students at the Higher Institute of Health in Al-Diwaniyah city to obtain their consent for participation in the study and to elucidate the study questionnaire. The data collection process started from (30th December 2023 to 20th January 2024) in order to achieve the objectives of the study. The information was acquired by using the Arabic version of the self-report questionnaire as a means of data collection and by having students self-report, the time for each students took about (10-15) minutes.

The SPSS (Statistical Package of Social Sciences) version 26, was used to analyze the collected data of the study.

Results of the Study

This section presents the analysis of the data after collected and being processed and tabulated then statistically management, and the results is expined scientifically and logically according to the objectives of the study.

Table 1: Distribution of the student by their demographic characteristics (n=93)

Demographic data	Rating and intervals	Frequency	Percent
Age / Years	20-29	59	63.44
	30-39	19	20.4
	40-49	9	9.7
	50-59	6	6.4
	Total	93	100
Gender	Male	55	59.1
	Female	38	40.8
	Total	93	100
Department	Nursing	33	35.93
	First aid and emergency	13	13.93
	Anesthesia	22	23.65
	Midwifery	25	26.88
	Total	93	100
Class	First	38	40.8
	Second	55	59.1

	Total	93	100
	Single	59	63.44
	Married	34	36.55
Marital status	Windowed	0	0
	Separated	0	0
	Total	93	100

% = Percent; Freq.= Frequency

The findings show descriptive statistics of sociodemographic characteristics expressed as percentages and frequencies. The age group that made up most of the research sample (63.44%) of the 93 participants was between the ages of 20 and 29. The proportion of participants over 50 was rather minimal. According to gender-related statistics, men made up 59.1% of the study's total participants, with women making up the remaining percentage. When it came to marital status, the majority of participants (63.44%) were single. Class -related results indicate that second stage of study findings and represented that (59.1%) out the total number. Finally in this table, most of the participants were in the nursing department and represented (35.93%) from total sampling

Table 2: Overall Assessment of students' knowledge about Cardio-Pulmonary Resuscitation (N=93).

Levels	Frequency	Percent	Overall mean	Overall Assessment
Poor	26	27.95		
Fair	45	48.38		
Good	22	23.65	1.419	Faie
Total	93	100		

"M.S= mean score, ASS=assessment, Cut off point (0.33): poor (mean of scores 1-1.33); Fai (1.34-1.67) , Good (1.68 and more)

In Table 2, Overall assessment of students' knowledge about Cardio-Pulmonary Resuscitation, the findings indicate that (48.38%) reported a fair level for the knowledge, poor level (27.95%) and good levels (23.65 %).

Table 3: The relationship between the general Assessment of students' knowledge about Cardio-Pulmonary Resuscitation and their demographic data.

Demographic Data	Chi-Square Value	D.F.	P-Value
Age	2.395	6	0.065
Gender	2.657	2	0.345
Deparment	7.442	8	0.012
Class	4.561	2	0.118
Marital status	3.017	4	0.231

Table 3 The results of the table (4-3) show that the overall student' knowledge is significant relationship with their department at p-value less than (0.05) and insignificant relationship with their demographic data at p-value more than (0.05).

DISCUSSION

A common presentation in emergency rooms, particularly at tertiary care facilities, is cardiac arrest. In light of this, healthcare professionals working in these hospitals ought to be proficient in BLS and first aid protocols. Unlike many other countries, Iraq does not mandate CPR training for those working in the

healthcare industry. Not unexpectedly, the results of our study show that students at the Higher Institute of Health have a severe lack of CPR skills.

According to Table 2 (which deals with the overall evaluation of students' understanding of CPR), lessthan half of students (48.38%) reported having a fair level of knowledge, followed by those who reported having poor levels (27.95%) and having good knowledge (23.65%). Lack of formal, ongoing training may be the cause of the low level of CPR awareness in certain LMICs.

The findings somewhat aligned with a related study by Qadir et al. (2009) [10], which found that students' CPR knowledge was low, with a mean ± SD total score of 14.85 ± 4.772; the highest possible total score was 38. The largest percentage of responders, 81 (67.3%), lacked enough CPR knowledge.

These findings were consistent with another study by Goswami et al. (2015) [11] on nursing students' knowledge in Mullana, India. The students' mean score on the Basic Life Support knowledge scale was 7.19 ± 2.0 out of 15, meaning that roughly 55.93% of them had a poor level of understanding [12].

This finding contradicts that of the study conducted by Vural et al. (2017) [13], which revealed that fewer than two-thirds (64.62) of participants reported having a good degree of understanding..

Regarding table(3), our research showed a strong relationship between students' departmental knowledge and CPR knowledge. at at p-value (0.012). This is especially crucial because first aid students are still predominantly in the educational stage of their careers, Because first aid students have more intensive material, both practical and theoretical, related to cardiopulmonary resuscitation than other departments. Students are more likely to remember this material and wish to use it in the future if they have more awareness about and favorable opinions of CPR. Therefore, it is essential to make CPR instruction appealing and available to these student groups. Numerous methods, such as straightforward lectures, seminars, and pamphlets, might be used to achieve such gains in fundamental CPR understanding.

Conclusions:

➢ This study revealed suboptimal CPR knowledge among Higher Institute of Health students. in Al-Diwaniyah City ,Iraq..

➢ This study showed that there is a significant relationship between student ' general knowledge levels and department at (p<0.05).

Recommendations

1. Future research should focus on the barriers to attain CPR training and the effectiveness of the available CPR training programs

2. The study recommends that the scientific departments at the Higher Institute of Health in Al-Diwaniyah City are urged to have Longitudinal studies are required to monitor how students' levels of CPR knowledge evolve even after graduation.

3. The nursing department and every other department of the technical diploma would handle the required first aid program as a separate course prior to graduation.

4. Students' knowledge and abilities must be improved through their educational program, such as first aid lectures.

5. The need to prepare continuous training courses on cardiopulmonary resuscitation and enhance the necessary skills to ensure that the acquired knowledge and important practices are not forgotten.

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