KNOWLEDGE REGARDING CARDIOPULMONARY RESUSCITATION AMONG NURSING STUDENTS

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ABSTRACT

Cardiopulmonary resuscitation (CPR) is a life-saving operation performed in an emergency when the heart stops beating. Immediate CPR following a cardiac arrest can double or triple the odds of survival. The American Heart Association welcomes you to join us in our vision of a future without cardiac arrest. In the United States, 350,000 individuals die from cardiac arrest each year. CPR keeps the blood pumping and the body supplied with oxygen until specialized treatment is available. There is normally enough oxygen left in the blood to support the brain and other organs for a few minutes. **Objective:** *To assess the knowledge regarding cardiopulmonary resuscitation among diploma nursing students.* **Methods:** *A descriptive research design was used. This study included 60 students. Knowledge and was used to assess the knowledge and chi-square test used to see the association between dependent and independent variables.* **Result**: *In this study, level of knowledge regarding cardiopulmonary resuscitation poor knowledge 10(20%), Average knowledge 20(40%) and good knowledge 20(40%) Age, Gender, religion, Course of study, Family history of cardiac disease, Aware about cardiopulmonary resuscitation, source of information regarding cardiopulmonary resuscitation, Classes on cardiopulmonary resuscitation within the last 6 months had shown no statistically significant association with the pretest levels of knowledge regarding cardiopulmonary resuscitation among students.* **Conclusion**: *Despite the fact that more than half of students had good knowledge, so students required proper skill development about cardio pulmonary resuscitation.*

Keywords: Knowledge, Nursing Students,Cardio Pulmonary Resuscitation.

INTRODUCTION

The heart is one of the most vital organs in the human body. On average, an adult's heart beats 72 times each minute. It is open twenty-four hours a day, seven days a week. Our heart serves a simple yet critical function. It transports oxygen-rich blood to all parts of our body. When our heart stops beating, oxygen does not reach our other vital organs, and they stop working.1

The heart is a muscular hollow organ. It measures 10 cm and is roughly the size of one's own fist. It weighs approximately 225 grammes in women and approximately 310 grammes in men. Cardiac arrest is a common medical emergency that can be fatal. Cardiac arrest happens when the heart stops producing an efficient pulse and stops circulating blood throughout the body. It is characterised by a loss of consciousness as well as the absence of a pulse and blood pressure. Most of the time, the significant mortality linked with it can be readily avoided by some relatively easy manoeuvres and talents.2

Coronary artery disease is the leading cause of sudden cardiac arrest. Approximately 60– 70% of sudden cardiac deaths are related to coronary artery disease. The other causes of cardiac arrest include smoking, lack of physical exercise, obesity, diabetes, previous heart attack and family history of cardiac diseases.CPR traditionally has integrated chest compressions and rescue breathing with the goal of optimizing circulations and oxygenation. Rescuer and victim characteristics may influence the optimal application of the components of CPR. Everyone can be a life saying rescuer for a cardiac arrest victim. CPR skills and their applications depends on the rescuer's training, experience and confidence.3

Chest compressions are the foundations of CPR . All rescuer's regardless of training should provide chest compressions to all cardiac arrest victims .Because of their importance, chest compressions should be the initial CPR actions for all victims regardless of age. Rescuers who are able should add ventilations to chest Compressions. Highly trained rescuers working together should coordinate their care and perform chest compressions as well as ventilations in a team based approach. Integrating the critical components of CPR.4

It has been estimated that more than 7,000,000 people die of sudden cardiac death per year worldwide. In India, the annual incidence of sudden cardiac death accounts for per 1000 population. Almost 2.6 million Indians are predicted to die due to coronary artery disease, in India by 2020. The incidence of sudden cardiac deaths is increased in the age group of 45-75 years. It is also seen that men have a higher incidence of cardiac arrest than females.5

Studies have shown that, in case of out- of- home cardiac arrest, bystanders, lay persons or

family members attempt CPR in 14% to 45% of the time, and only half of bystanders perform CPR effectively. It was also found that when a cardiac arrest occurs in out of hospital setting, CPR was more commonly given by a bystander who has no connection to the victim than a member of his own family.6 This is because a stranger can remain calm and think clearly when compared to a family member. Only a minority of bystanders will initiate CPR when a family member collapses in the home. The main reason for not performing CPR was fear of failing. The study highlighted that CPR courses are not reaching to those most likely to be called upon to use this skill.7

Knowledge of BLS and practice of simple CPR techniques ensures the survival of the patient till experienced medical help arrives and in most cases that itself is sufficient for survival. Basic CPR can be performed by a trained health care professional and by appropriately trained non-professionals.8

METHODS

Study area and period

The study was conducted in selected nursing colleges at Lucknow

Study design

The research design was used in this study descriptive research design.

Population

Source population:

The source population was all nursing students

Study population:

All sampled nursing students during study period.

Inclusion criteria and Exclusion criteria:

Inclusion criteria

- ☐ Available at the time of data collection
- ☐ Interested for study
- ☐ The students who can read and write Hindi or English

Sample size: 50 nursing students

Sampling procedure

Non probability Convenience sampling technique

Variables

Independent variables

The independent variable in this study is Age, Gender, source of information

Dependent variables

The dependent variable in this study is knowledge regarding cardio pulmonary resuscitation

Operational definition

1. Knowledge: In this study knowledge refers to the understanding of students regarding cardio pulmonary resuscitation, as measured by a structured questionnaire

2. Cardio Pulmonary Resuscitation: In this study, it refers to an emergency procedure used to temporarily maintain blood oxygenation and tissue perfusion, as well as restore cardiac function, in a person who has suffered cardiopulmonary arrest.

3. Nursing Students: In this study, it refers to candidates studying degree and diploma course in selected nursing college.

Data collection instrument and procedure

Structured and semi-structured English version questionnaire was prepared from the literature review by principal -investigators. Translation to Hindi version and again translated to English version were used by the principal investigators before starting the data collection time. It includes about socio-demographic, knowledge questionnaire.

Data collection instrument and methods:-The data collector was the group members. Face to face interview held privately after verbal consent is obtained from each participant. The data was collected until the required sample size achieved.

Data processing and analysis

The coded data were entered to computer by using Statistical Package for Social Science (SPSS) version 25 statistical software for analysis. Cleaning were performed by using frequency distribution .Any error were corrected after revision of the original data using the code numbers

of the questionnaires. Frequencies were computed for description of the study population in relation to socio-demographic and other relevant variables. The association between independent and dependent variable determined by odd ratio with 95% CI and P- value less than considered as statistically significance. Chi-square test will be used to find association of the post-test anxiety score with selected demographic variables. In this study P-value < 0.05 was considered to declare a result as statistically significant association. The result presented by charts, figures, and tables.

RESULTS

Descriptive and inferential statistics were used for analyzing the data on the basis of objectives of the study. The data has been tabulated and organized as follows.

Table: I Frequency and percentage distribution of study samples according to the selected Demographic variables

N=50

Demographic Variables		frequency	Percentage
Age in years	17-19	29	58
	20-22	6	12
	23-25	12	24
	>25	3	6
Gender	Male	20	40
	Female	30	60
Religion	Hindu	20	40
	Muslim	10	20
	Christian	20	40
Course of study	Diploma Nursing	15	30
	B.Sc Nursing	15	30
	P.B.Bsc Nursing	20	40
Aware about cardio pulmonary resuscitation	Yes	40	80
	No	10	20

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source of information regarding cardio pulmonary resuscitation	Health personal	15	30
	Mass media	10	20
	Workshop	10	20
	Friend	10	20
	Neighbor	5	10
Classes on cardio pulmonary resuscitation within the last 6 months	Yes	20	40
	No	30	60
		50	**100**

Table 1 shows the frequency and percentage distribution of the demographic variables of students. According to their age majority 29(58 %) were in 17-19 years of age, 6(12%) were 20-22 years of age,12(24%) were 23-25 years and 3 (6%) were more than 25years of age.

Regarding gender of students maximum 20(40%) were Female patients and 20(40%) were male. Regarding religion of students maximum 20(40%) belongs to Hindu, 10(20%) belongs to Muslim and 20(40%) belongs to Christian.

With regard to class of studying of students 15(30%) were bachelor of Nursing,20(40%) belongs to post Basic Nursing, 15(30%) were Diploma Nursing.

According to aware about cardio pulmonary resuscitation students majority 40(80%) were aware about cardio pulmonary resuscitation, 10(20%) were no aware about cardio pulmonary resuscitation.

Regarding source of information regarding cardio pulmonary resuscitation maximum 15(30%) were health personal,10(20%) were mass media, 10(20%) were workshop, 10(20%) were friends and 5(10%) were neighbors.

Regarding Classes on cardio pulmonary resuscitation within the last 6 months, 20(40%) were attended classes and 30(60%) were not attended classes.

Table II: Assessment of levels of knowledge among students regarding cardio pulmonary resuscitation.

Levels of knowledge	Pretest levels	
	Number	**Percentage**
Poor knowledge	10	20
Average knowledge	20	40
Good knowledge	20	40
Total	**50**	**100.00**

P<0.05

The table 2 shows that Assessment of level of knowledge regarding cardiopulmonary resuscitation pretest level poor knowledge 10(20%), Average knowledge 20(40%) and good knowledge 20(40%) .So P<0.05 level at significant.

Table VII: Association between levels of knowledge and demographic profile or characteristics

Demographic profile	Level of knowledge			Chi-square	df	P-value
	Poor knowledge	**Average knowledge**	**Good knowledge**			
Age groups in Years						
17-19	2	5	6	1.294	6	0.972 **NS**
20-22	3	4	2			
23-25	3	6	5			
>25	2	5	7			
Gender						
Male	4	8	9	1.742	2	0.418 **NS**
Female	6	12	11			
Religion						
Hindu	4	5	6	1.179	4	0.882 **NS**
Muslim	2	3	3			

Christian	4	12	11			
Course of study						
Diploma	4	10	9	5.801	4	0.215 **NS**
B.Sc Nursing	2	5	6			
Post B.Sc Nursing	4	5	5			
Aware about cardio lmonary resuscitation						
Yes	6	18	16	2.680	2	0.262 **NS**
No	4	2	4			
source of information regarding cardio pulmonary resuscitation						
Health personal	2	9	8	9.305	6	0.157 **NS**
Mass media	1	1	2			
Workshop	4	5	4			
Friend	2	3	3			
Neighbor	1	2	3			
Classes on cardio pulmonary resuscitation within the last 6 months						
Yes	6	14	17	0.192	2	0.908 **NS**
No	4	6	3			

*p<0.005*indicates significant   S-Significant   NS-non significant

The table3 showed that demographic variables Age, Gender, religion, Course of study, Aware about cardio pulmonary resuscitation, source of information regarding cardio pulmonary

resuscitation, Classes on cardio pulmonary resuscitation within the last 6 months had shown no statistically significant association with the pretest levels of knowledge regarding cardio pulmonary resuscitation among students. P<0.005.

Competing interest:

The authors report no conflicts of interest for this work.

Authors' contributions

All authors were involved in the interpretation of the data and contributed to manuscript preparation. All authors have read and approved the final version of the manuscript.

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