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**A STUDY TO ASSES THE KNOWLEDGE REGARDING  
CARDIOPULMONARY RESUSCITATION AMONG 3RD  
YEAR GENERAL NURSING AND MIDWIFERY  
STUDENTS IN VIJAYANAGAR SCHOOL OF NURSING,  
MUDALPALYA, BANGALORE-72.**

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**Abstract:**

*This descriptive study examines 3rd year GNM student's knowledge regarding Cardiopulmonary Resuscitation in Vijayanagar School of Nursing, Mudalpalya, Bangalore. The data were generated using structured knowledge questionnaire. Simple random sampling technique was adopted to select 60 subjects based on certain pre-determined criteria. A self instruction module was prepared on the basis of the knowledge of the student nurses and to accomplish the study.*

**KEY WORDS:**

Cardiopulmonary resuscitation, General nursing and Midwifery students, Knowledge

**INTRODUCTION**

Success is the progressive realization of a worthy goal.

-Earl Nightingale

Birth and death are the two natural phenomena that all of us have to accept. When a child is born we are happy because a new person is added to our company whereas when a person dies, we are in sorrow because he passed away from us. This death occurs at any time due to any cause. But death can be prevented. For instance death due to cardiac arrest can be prevented by giving Cardiopulmonary resuscitation in time. Cardio pulmonary resuscitation is a technique used in cardiac arrest to re-establish heart and lung function until more advanced life support is available. 1

Kouwenhoven and his colleagues set a new landmark for effective external cardiac compression, coupled with mouth to mouth breathing in the resuscitation of victims who had total circulatory standstill. As a result, the combination of closed –chest cardiac massage and mouth to mouth rescue breathing, coupled with the introduction of external defibrillation, created contemporary cardiopulmonary resuscitation(CPR) as it is known today. Thus the foundation of modern CPR was laid in 1960.

Resuscitation of the apparently dead has fascinated mankind throughout the whole period of recorded history .Looking at Paleolithic evidence, we know that this fascination went back even earlier to pre-recorded times , 25 to 30 thousand years ago . The first documented resuscitation is a remarkable account of an apparently dead shunammite child by the prophet Elija. The old testament reads: “And he went up, and lay upon the child , and put his mouth upon his mouth ,and eyes up on his eyes, and hands upon his hands and stretched himself upon the child and the flesh of the child waxed warm....and the child sneezed seven times and opened his eyes”

During the clinical placement in Hospital, the investigator found that most of the student nurses

are unaware of their role in Cardiopulmonary resuscitation and they had an opinion that only the doctors are eligible to perform Cardiopulmonary resuscitation and nurses need not involve much. This shows the intellectual and psychomotor deficiency on Cardiopulmonary resuscitation among student nurses. So the investigator felt that the student nurses need to be assessed their knowledge regarding CPR to improve the practice of future nurses on CPR.

Today's nursing students are tomorrow's staff nurses. So the investigator took up the task of assessing the knowledge of the 3rd year General Nursing and Midwifery students on CPR and educating them as they are going to work as staff nurses in different set up after their course of training, in order to prevent death occurring due to cardiopulmonary arrest.

Objectives of the study

1. To assess the knowledge of the student nurses regarding Cardiopulmonary Resuscitation.
2. To find out the relationship between the knowledge and selected demographic variables of student nurses.
3. To prepare a self instructional module on CPR based on the knowledge of the student nurses.

Operational Definition

- Knowledge: - It is the 3rd year General Nursing and Midwifery student's intellectual ability to answer the questions regarding Cardiopulmonary Resuscitation.
- Cardio pulmonary Resuscitation: - Is a simple technique used to restore and maintain breathing and circulation in cardiac arrest victims.
- 3rd year GNM students: - Who are undergoing the 3rd year programme of General Nursing and Midwifery course in a School of Nursing that is recognized by the Indian Nursing Council and Karnataka Nursing Council.

#### **Inclusion Criteria**

- : 3rd year GNM students of Vijayanagar School of Nursing.
- : 3rd year GNM students available at the time of data collection.
- : 3rd year GNM students who are willing to participate in the study.

#### **Assumption**

- 3rd year GNM students possess some knowledge on Cardiopulmonary Resuscitation.
- Student nurses' knowledge regarding Cardiopulmonary Resuscitation can be measured by a knowledge questionnaire

#### **Conceptual Framework**

The conceptual framework selected for the present study was based on "Goal Attainment Theory of Imogene King.

#### **Review of Literature**

Enas A. Enas. did a study on magnitude of coronary artery diseases among Asian Indians. The study revealed that Indian's have the highest rate of coronary artery diseases (CAD), irrespective of region, religion, gender and education. These rates include incidence, mortality and prevalence. About 50% of all heart attacks among Indian men occur under the age of 55 and 25% under the age of 40, unheard of in any other population. The prevalence of CAD in urban India is double the rate in rural India and 4- fold higher than in the US. The CAD rates in urban India are similar to those among the generally more affluent overseas Indians. The prevalence of CAD in New Delhi is 10% and Chennai 11%. The rate appears to be highest in Kerala (despite its highest literacy), where prevalence of CAD is 13% in urban areas and 7% in rural areas. The excess risks of CAD among Indians are even greater in women than in men. Indian women have higher death rate from CAD than women of all other ethnic origins in the UK, South Africa, Canada, Singapore, Mauritius, Uganda and Fiji.

Bicknbach J, Fries M, Beckers, Rossaint R, Kuhlen R. et al. did a study on incidence of cardiac arrest and requirement for the use of Automated External Defibrillators (AED) in German hospitals. It revealed that sudden cardiac arrest is one of the most frequent causes of death in Germany with an incidence of 130,000 per year. Each day 350 patients die from cardiac arrest. Survival depends essentially on the time

delay before professional help arrives and sufficient resuscitation measures have been started. At present, survival of sudden cardiac death is reported to be in the range of 5-8%. In preclinical conditions, many studies have already

Tok D. did an evaluative study on the effectiveness of in-hospital cardiopulmonary resuscitation strategies and identified key predictors of post-CPR survival in a University hospital setting. Data regarding in-hospital CPR attempts from Jan. 2001 to Dec. 2002 were recorded and analyzed. The mean outcomes of the interest were immediate survival after CPR and survival to hospital discharge. Of 307 patients who suffered cardiac arrest in the study period, 103(33.5%) were resuscitated. Of these 103 Patients, 28(27.2%) survived immediately and 12(11.7%) survived to hospital discharge. The result revealed that key predictors of survival to hospital discharge were CPR duration, immediate defibrillation, usage of Glasgocomma scale score and early prediction score.

Simon Gracia, Lopez Cid JJ, Anton pleite EM, Cosgaya Garcia, Garcia Alegre E, Martin Benitez JC. et al. studied nurses' knowledge regarding cardiac arrest and the use of early defibrillation after the study, practical-theory course was conducted. the result showed that nurses had great interest in this course. After the course the level of knowledge increased. The training of nurse's emergency care and early defibrillation were absolutely essential as it is shown in their low level of theoretical and practical knowledge.

Colin. A, Noreen, F Lewis. did a study on evaluation of a new method for carotid pulse check in cardiopulmonary resuscitation. The aim of the study was to evaluate a modified technique for palpation of the carotid pulse. Sixty seven undergraduate dental students were taught the standard method of carotid pulse detection during a basic life support session and are also taught a modified method. Each student was asked to palpate the carotid pulse of a volunteer in two positions (neck neutral and neck extended) with the volunteer on the floor and on a trolley. The time taken to identify the pulse was measured and the scenarios compared. The result showed that they performed poorly.

## **METHODOLOGY**

### **Research Design**

The research design selected for this study is descriptive design

### **Setting**

This study was conducted in Vijayanagar School of Nursing, mudalpalya, Bangalore-72.

### **Sample and Sampling Technique**

60 nursing students studying in Vijayanagar School of Nursing were selected by simple random sampling.

### **Data collection Technique**

The number of nursing students selected per day was 3. Before administering the tool, subjects were explained the purpose of the study and assured anonymity and confidentiality of the scores. After obtaining the consent from the subjects the tool was handed over after the class hours (after 4 pm) so that the routines of the school might not be disturbed. The questionnaire was collected after successful completion by the student nurses. Students took 45 minutes to complete the questionnaire. Giving thanks to the respondent the data collection procedure was terminated.

## **DESCRIPTION OF THE TOOL**

A structured questionnaire consists of two sections.

### **Section A- Demographic data**

The first section of the tool consisted of 5 items seeking information about age, gender, general education status, percentage of marks obtained last year and source of information regarding CPR.

Section B – Knowledge Questionnaire  
Comprises 42 statements on CPR and is divided into five areas.

- Part 1. Questions related to heart and its function
- Part 2. Questions related to cardiac arrest
- Part 3. Questions related to airway and breathing
- Part 4. Questions related to knowledge on CPR and
- Part 5. Questions related to drugs used in CPR.

The items were of multiple choice type. The total score is 42. Each correct response will carry “one score” and “zero” for incorrect response. .

**Result and discussion**

The data obtained were analyzed and tabulated according to the objectives of the study, using descriptive and inferential statistical tests which included

Frequency and percentage for analysis of demographic data  
Frequency, Mean, Mean Percentage and Standard Deviation to determine the knowledge scoring of student nurses

X2 test was used to find out the significance between the knowledge and selected demographic variables

**Section –I**

**Table-I**  
**Nursing Students knowledge as per the areas of CPR.**  
**N = 60**

Sl. No.	Areas	Number of Questions	Mean	Mean Percentage	Standard Deviation
1	Knowledge related to Heart and Lungs and its Function.	4	47	78.33	8.042
2	Knowledge related to Cardiac Arrest	3	27.67	46.12	3.786
3	Knowledge related to Airway and Breathing.	10	26.7	44.5	4.498
4	Knowledge related to Circulation.	21	22.05	36.75	3.556
5	Knowledge related to Drugs used in CPR.	4	22	36.67	3.830
	<b>Over all</b>	<b>42</b>	<b>18.15</b>	<b>30.25</b>	<b>8.368</b>

Total Score = 42

Data available in Table I show the mean, mean percentage and standard deviation of Knowledge obtained by Nursing Students in all five areas of questions related to CPR. The data depict deficiencies in all areas except mean percentage of knowledge 78.33% regarding heart and lungs and its function with a standard deviation of 8.042. But the lowest mean knowledge percentage (36.67%) with a standard deviation of 3.830 in the area of knowledge related to emergency drugs used in CPR which indicated that maximum knowledge deficit exists in this area and the other limited knowledge deficit is the area of circulation 36.75%, with a standard deviation 3.556. Mean knowledge percentage of other areas are knowledge related to airway and breathing 44.5% with a standard deviation of 4.498 and knowledge related to cardiac arrest 46.12% with a standard deviation of 3.786. The overall mean knowledge percentage was 30.25% with a standard deviation of 8.368.

**Table II**  
**Over all Knowledge of the Student Nurses regarding CPR.**  
**N = 60**

Sl. NO.	Overall Level of Knowledge	NO	%
1	Inadequate (<50)	44	73.33
2	Moderately adequate (50-75)	7	11.67
3	Adequate (>75)	9	15
<b>Total</b>		<b>60</b>	<b>100</b>

The table II shows only 15% student nurses had adequate knowledge, 11.67% had moderately adequate knowledge and 73.33% student nurses had inadequate knowledge regarding CPR .

**Section-II**

Describes the Association between selected demographic variables of the Student Nurses and their level of Knowledge Regarding Cardiopulmonary Resuscitation.

Table III  
 Association between selected demographic variables of student nurses and their level of knowledge regarding cardiopulmonary resuscitation.  
 N =60

Sl.	Demographic Variables	Inadequate		Moderately Adequat		Adequate		x <sup>2</sup> Value	
		No.	%	No. <sup>e</sup>	%	No.	%		
1	Age in years	18-23	42	77.78	6	11.11	6	11.11	x <sup>2</sup> -1.23 NS df - 4 P >0.05
		24-29	1	20	1	20	3	60	
		30-35	1	100	0	0	0	0	
2	Gender	Male	26	74.28	5	14.29	4	11.43	x <sup>2</sup> -1.23 NS df - 2
		Female	18	72	2	8	5	20	
3	General Education Status	Plus2/P.U.C	44	89.8	5	10.2	0	0	x <sup>2</sup> -51.04 NS df - 4 P >0.05
		Graduation	0	0	2	20	8	80	
		Post-graduation	0	0	0	0	1	100	
4	Percentage of marks obtained in last year	50% & above	38	90.48	2	4.76	2	4.76	x <sup>2</sup> -33.0 df - 4 P <0.05 Sig. Sig.
		60% & above	6	40	5	33.33	4	26.67	
		80% & above	0		0		3	100	
5	Source of information regarding CPR	Academic education	43	89.58	3	6.25	2	4.17	x <sup>2</sup> -48.33 NS df - 8 P <0.05 Sig.
		Through health personnel	0	0	3	100	0	0	
		Clinical experience	1	25	0	0	3	75	
		Mass media	0	0	1	33.33	2	66.67	
		Self reading	0	0	0	0	2	100	

Sig.- Significant      NS – Not Significant

Table III show the association between the level of knowledge regarding CPR and the demographic variables of the student nurses.

To find out the association between the level of knowledge and the general educational status, a Chi-square test was done. The calculated Chi-square value (51.04) is higher than the Chi-square table value (9.49) with degree of freedom 4, there is a significant association between the knowledge and general educational status of the student nurses. Hence H2 was found to be true.

The table also reveals that there is a significant association between the knowledge level of the student nurses and the source of information regarding CPR. At 5% level of significance with 8 degree of freedom the calculated Chi-square value i.e. 48.33, is greater than the table value of Chi-square (15.51). Hence there is a significant association between the knowledge level and the source of information regarding CPR. Hence H3 was accepted.



### **Implication**

The present study has several implications for nursing practice, nursing education, nursing administration and nursing research.

### **NURSING PRACTICE**

The study shows that various levels of knowledge deficit among the student nurses regarding CPR. It also reveals the gap that exists between the required knowledge and the existing knowledge of CPR. This study reveals the correction of deficiency should be an ongoing process. It also highlights the need for individual attention which can be introduced in clinical experience with three student nurses under the guidance of one staff nurse or tutor till they are competent as measured by performance appraisal and nursing standards in CPR techniques.

### **Nursing Education**

The student nurses from School of Nursing should be encouraged to attend specialized courses and seminars in critical care prior to the clinical posting. There should be individualized ongoing feedback on their performance in CPR technique. Active participation of the student nurses can be encouraged by providing clinical teaching, demonstration and self learning on CPR techniques. The nursing curriculum should be updated to enable nursing students to identify the need of CPR in education.

### **Nursing Administration**

Nursing administrators may use the study to improve the quality of nurses and nursing students. It highlights the need for nursing administrators to make protocols, guidelines of CPR technique and updating nursing standards regarding CPR.

### **Nursing Research**

The findings of the study serve as a basis for the nursing profession and the students to conduct further studies in different aspects of CPR. This study helps the nurse researcher to develop insight into the development of self instruction modules for the nursing students.

### **CONCLUSION**

The following conclusions were made on the basis of the findings:

1. The present study revealed that the student nurses had inadequate knowledge regarding CPR.
2. Analysis showed that the student nurses got adequate knowledge regarding heart and lungs and its function compared to other areas.
3. There was no significant association between the level of knowledge and the demographic variables such as age and gender.

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