

## EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIO PULMONARY RESUSCITATION AMONG STAFF NURSES

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### Abstract

CPR is a life saving procedure to be used when the heart and lungs have stopped working. There is a so much variation in the reported incidence and outcome for out of hospital cardiac arrest. Every nurses and physician should be skilled in CPR because cardiac arrest, the sudden cessation of breathing, and adequate circulation of blood by the heart, may occur at any time or in any place. A pre-experimental with one group pre-test and post-test research design was used in this study. Purposive sampling technique was used to select the sample and the sample size was 30 staff nurses. Data were collected by using structured knowledge questionnaire regarding CPR. Analysis of the data was done by using descriptive and inferential statistics. The Result showed that out of 30 samples the overall pre test Mean score of staff nurses was 17.33 (SD=3.6) and post test mean score increased to 29.9 (SD=2.49). The comparison mean difference in the present study was 12.60 (SE of mean  $D = 0.75$ ) with paired 't' value of 16.77. Table value of 't' at 0.05 level of significance and 29 degrees of freedom is 2.045. As the calculated value was more than the table value, it was clearly found that the Structured Teaching Programme was effective in improving the knowledge of nursing Students regarding CPR. No significant association between the demographic variables such as age, gender, experience in year, religion, sources of information regarding CPR with post test knowledge scores of staff nurses.

**Keywords:** Effectiveness, knowledge, structured teaching programme, CPR

### INTRODUCTION

The heart is that the center of circulatory system and it's vitally accountable for almost everything that gives body life starting from the transportation of oxygen to the success of the immune system. The foods we eat daily and the amount of activity done choose to take part in dramatically affect the health of the heart and the many other cells and tissues that make up cardiovascular system.

CPR is a life saving procedure to be used when the heart and lungs have stopped working. There is a so much variation in the reported incidence and outcome for out of hospital cardiac arrest. These variations are due to definition and ascertainment of cardiac pulmonary arrest similarly differences in treatment after its onset.

CPR will comprise of many different things, but the initial, important part is Basic Life Support (BLS). Cardio means that "of the heart" and pulmonary means "of the lungs". Resuscitation is a medical word that means "to revive" or bring back to life to the person. So many times CPR can help a person who has stopped breathing and stopped heart beating, to stay alive. Despite advances in CPR methods, including the introduction of the automatic electrical defibrillator (AED) and

therapeutic hypothermia, only about 10 % of adult out-of-hospital cardiac arrest (OHCA) victims survive to hospital discharge and enter normal life, and the majority of survivors have moderate to severe cognitive deformities 3 months after resuscitation.

Each year almost 330,000 persons die from heart disease. Half of these will die suddenly, outside of the hospital because their heart stops working. The common cause of death from heart attack in adult is a deformity in the electrical rhythm of the heart or ventricular fibrillation. It could be treated by applying an electrical shock to the chest for the patient.

Every nurses and physician should be skilled in CPR because cardiac arrest, the sudden cessation of breathing, and adequate circulation of blood by the heart, may occur at any time or in any place. Resuscitation are divided into two parts, first is basic cardiac life support and second is advanced cardiac life support. The American Heart Association establishes the standards for CPR and is actively involved in teaching BCLS and ACLS to health professionals so they can handle in emergency situation.

People who handle emergencies situation such as police officers, firefighters, paramedical staff, doctors and nurses are all trained to do CPR procedure. Many other teens and adults like lifeguards, teachers, child take care workers, and may be even your parents know how to do CPR too in emergency situation. Generally many persons think that CPR need to get a degree to get a healthcare job, but so many jobs simply require applicants to be CPR trainers and First Aid certified Courses to receive certification in CPR and First Aid are awarded at colleges, schools, and Red Cross society across the country.. Individual can get both certifications as young as sixteen years of age. This means they can start getting incredible work experience an early age, which will help them out more down the road. And the CPR training courses are so short, it does not have to disturb with high school. The chest compressions be the first step for lay and professional rescuers to revive victims of sudden cardiac arrest, the association said the A-B-Cs (Airway-Breathing-Compressions) of CPR should now be changed to CA- B (Compressions-Airway-Breathing).For more than 40 years, CPR training has emphasized the ABCs of CPR, which instructed people to open a victim's airway by tilting their head back, pinching the nose and breathing into the person's mouth, and then give chest compressions. This technique cause delays in starting chest compressions that are essential for keeping oxygen-rich blood circulating throughout the body. Everchanging the sequence from A-B-C to C-A-B for adults and kids allows all rescuers to start chest compressions right away.

## OBJECTIVES

1. To assess the pretest knowledge regarding the cardio pulmonary resuscitation among staff nurses.
2. To develop and administer Structure Teaching Programme regarding the cardio pulmonary resuscitation among staff nurses.
3. To assess the post-test knowledge regarding the cardio pulmonary resuscitation among staff nurses.
4. To assess the effectiveness of Structure Teaching Programme on knowledge regarding the CPR among staff nurses.
5. To find out association between post test knowledge regarding the cardio pulmonary resuscitation among staff nurses with their selected demographic variables.

## OPERATIONAL DEFINITION

- **Effectiveness:** It is extent to which the knowledge of staff nurses improved with regard cardio pulmonary resuscitation after the implementation of Structured Teaching Programme as evidence by difference in the pre-test and post test score.
- **Structured Teaching Programme:** It refers to systematically organized instruction and discussion to impart Knowledge regarding the cardio pulmonary resuscitation among staff nurses.
- **Knowledge:** It refers to correct response of staff nurses to the question regarding knowledge of the cardio pulmonary resuscitation among staff nurses.
- **Cardio pulmonary resuscitation:** it is a simple technique used to restore and maintain breathing and circulation in cardiac arrest patients.
- **Staff Nurse:** The registered nurses who have undergone basic training in Nursing and Midwifery (Diploma in Nursing and Midwifery) and presently working in selected hospitals

## HYPOTHESIS.

Research hypothesis have been formulated according to the objectives and review of literature

**H1:** There will be significant difference between mean pre-test and post-test knowledge scores of staff nurses attending Structured Teaching Programme on cardio pulmonary resuscitation

**H2:** There will be association between the post-test knowledge score of staff nurses regarding cardio pulmonary resuscitation with their selected socio-demographic variables.

## ASSUMPTIONS

It refers to beliefs that are held to be true, but not necessarily been proven that statement.

The assumptions made for this study were:

- Staff nurses will be cooperative with the researcher and would be willing to express their knowledge regarding CPR.
- The structured questionnaire prepared for data collection will be sufficient enough to assess the actual knowledge level of staff nurses regarding CPR.
- The response of staff nurses to the questionnaire will represent their knowledge on CPR.

## DELIMITATIONS

- The study will only be limited to staff nurses in the selected hospitals
- who are the present at the time of data collection.

Therefore, the investigator felt that there is a need to enhance the knowledge among staff nurses regarding CPR, so that the staff nurses should have adequate knowledge about CPR.

## MATERIALS AND METHODS

The research approach for the present study is evaluative approach and the research design was one group pre test and post test design which belongs to pre- experimental research design. Purposive Non random sampling technique was used to select the Hospital i.e. Krishna hospital. The sample size was of 30 staff nurses working in the hospital. Tool consists of two sections: Section A: Consists of socio demographic data of the staff nurses. It consists of 5 items regarding the demographic information of the subjects such as age, gender, religion, experience in year and source of information. Section B: The tool consists of 35 items of knowledge regarding CPR. The items was

closed ended questions especially of multiple choice questions. The total score was 35. Each correct response of the question carried out with one mark. The pilot study revealed the feasibility of the main study. Reliability of the tool was calculated by the test retest method. By using Karl Pearson's co-efficient of co relation method "r" value is obtained.  $[r^1=0.92]$  .It shows that the tool was highly reliable for the final study. Data were collected by using structured knowledge questionnaire schedule through multiple choice questions and administer structured teaching programme to the group and after a gap of seven days post test was conducted with the same tool. Wherever needed, questions were explaining in simple terms for staff nurses. Ethical permission was obtained from the director of Krishna hospital for data collection. Analysis of the data was done using descriptive statistics as frequency , percentage, mean, standard deviation and inferential statistics as paired' test and Chi- square test.

## RESULTS

The analysis of the data have been arranged and organized and presented under the following section.

**Table - 1: Frequency and percentage distribution of nursing students by their socio demographic variables. N=30**

Frequency distribution		Frequency	Percentage
Age in years	21-25	20	66.66
	26-30	05	16.66
	31-35	3	10
	36-40	2	6.66
Gender	Male	20	66.66
	Female	10	33.33
Experience in years	< 2	18	60
	2-6	08	26.66
	7-12	02	6.66
	>12	0	0
Religion	Hindu	25	83.33
	Muslim	05	16.66
	Christian	0	00
Source of information	Mass Media	16	53.33
	Friends	05	16.66
	Family members	06	20
	Health personnel	03	10

- Majority 66.66% of the staff nurses were from the Age group of 21-25 years followed by 16.66 per cent staff nurses from age group 26-30 years, 10% from the age group of 31-35 and 6.66% staff nurses were from the age group 36-40 years.
- 66.66% of the sample is found to be males and females are 33.33%.
- 60% had < 2 years experience, 26.6% had 2-6 years experience, 6.66% had 7-12 years experience, and 0.00% had > 12 years experience.
- 83.332 staff nurses were Hindus, followed by Muslims 16.66%. Surprisingly no Christians were found in the sample.
- Majority of the students have source of information as a Mass media 53.33%, followed by family members 20 %, friends 16.66 % and Health personnel 10 %.

**TABLE - 2: Frequency and percentage distribution of level of knowledge of staff nurses regarding Cardio pulmonary resuscitation**

N=30

Level of knowledge	PRE TEST		POST TEST	
	Frequency	Percentage	Frequency	Percentage
Low knowledge (0-18)	16	53.33%	0	00 %
Average knowledge (19-27)	14	46.67%	05	16.66%
High knowledge (28-35)	00	00%	25	83.33%

Tables 2 describe the percentage distribution of scores reveals that in Pre test 53.33% staff nurses have the Low knowledge, 46.67% staff nurses have Average knowledge and no single informant had high knowledge. The score of post test indicated marked increase in knowledge levels of staff nurses that is 16.66% Average knowledge, 83.33% High knowledge and it was also interesting to know that no single respondent in post test obtained low knowledge.

**TABLE -3: Mean and standard deviation of pre test and post test knowledge scores in specific areas related to CPR**

N=30

Specific areas	Pre test		Post test	
	Mean	Standard deviation	Mean	Standard deviation
Overall knowledge	17.33	3.6	29.9	2.49
Anatomy and Physiology of heart	2.96	1.09	4.3	0.70
Meaning and cause of Cardiac Arrest	3.03	1.06	3.63	0.61
Meaning and indication of CPR	3.83	1.23	7.2	0.96
Precaution taken during CPR	2.57	1.13	5.00	0.94
Complication and Nurses responsibilities in CPR	4.93	2.46	9.80	1.37

Table 3 describes that the Mean and Standard Deviation of pre test and post test knowledge scores in specific areas of CPR. It clearly describes that the overall knowledge Mean score in pre test was increased from 17.33±3.6 to 29.9±2.49 in post test. This depicts that Structured Teaching Programme was effective in improving the Overall knowledge of staff nurses regarding CPR.

**TABLE -4: Comparison of pre test and post test scores regarding CPR by paired' test**

N=30

Specific areas of CPR	Mean difference	Standard deviation difference	Standard error of mean difference	Paired 't' test
Over all knowledge.	12.60	4.11	0.75	16.77
Anatomy and Physiology of heart	1.33	1.21	0.22	6.02
Meaning and cause of Cardiac Arrest	0.60	1.06	0.19	3.07

Meaning and indication of CPR	3.36	1.12	0.20	16.33
Precaution taken during CPR	2.43	1.33	0.24	10.01
Complication and Nurses responsibilities in CPR	4.8	2.99	0.54	8.91

Table 4 describes that Mean difference was 12.60 (SE D=0.54) with paired 't' value of 16.77. Thus, it was revealed that the post test mean score was significantly higher than the pre test Mean score. The Table value of paired 't' test at 29 degrees of freedom and at 0.05 level of significance was 2.045. Since the calculated value was higher than the Table value, the research hypothesis H<sub>1</sub> was accepted. Hence, there was a significant difference between the pre test and post test knowledge scores of the staff nurses on CPR.

**TABLE -5: Association between socio demographic variables of staff nurses with their post test knowledge scores regarding CPR**

N=30

S. No	Variable	Calculated $\chi^2$ value	table value	df	Association
1	Age	0.13	3.84	1	NS
2	Gender	0.69	3.84	1	NS
3	Experience in years	0.98	3.84	1	NS
4	Religion	1.69	3.84	1	NS
6	Source of Information regarding CPR	1.83	3.84	1	NS

Table 5 describes that the calculated the Chi-square ( $\chi^2$ ) values computed for post-test knowledge scores on DOTS with Age (0.13), Religion (0.69), Experience in year (0.98), Religion (1.69) and Source of Information regarding CPR (1.83) are found to be less than the table values at 5% level of significance which implies that there is no significant relationship between post-test knowledge scores of staff nurses with regard to CPR and their Demographic variables. Hence the research hypothesis H<sub>2</sub> was rejected.

## DISCUSSION

The pre test Mean score of nursing students was 17.33 (SD=3.6) and post test mean score increased to 29.9 (SD=2.49). The comparison mean difference in the present study was 12.60 (SE of mean D = 0.75) with paired 't' value of 16.77. Table value of 't' at 0.05 level of significance and 29 degrees of freedom is 2.045. As the calculated value was more than the table value, it was clearly found that the Structured Teaching Programme was effective in improving the knowledge of staff nurses regarding CPR.

Association was done between demographic variables and post test level of knowledge score of adolescents by using chi-square ( $\chi^2$ ) test. The calculated chi square values was less than the table values indicated that there was no significant association between the demographic variables such as age, gender, experience of year, religion, sources of information regarding CPR with post test knowledge scores of staff nurses. Hence the hypothesis (H<sub>2</sub>) has been rejected.

## CONCLUSION

The pre test Mean score of nursing students was 17.33 (SD=3.6) and post test mean score increased to 29.9 (SD=2.49). The comparison mean difference in the present study was 12.60 (SE of mean D = 0.75) with paired 't' value of 16.77. Table value of 't' at 0.05 level of significance and 29 degrees of freedom is 2.045. As the calculated value was more than the table value, it was clearly found that the Structured Teaching Programme was effective in improving the knowledge of nursing Students regarding CPR. There for the hypothesis H<sub>1</sub> was accepted". No significant association between the demographic variables such as age, gender, experience of year, religion, sources of information regarding CPR with post test knowledge scores of staff nurses. so the hypothesis (H<sub>2</sub>) has been rejected.

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