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Effect of structured teaching program on knowledge regarding cardiopulmonary resuscitation among degree students

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ABSTRACT

The present study entitled "Effect of Structured Teaching Program on Knowledge regarding Cardiopulmonary Resuscitation among Degree students" is based on following Objectives: Assess the pre-test and post-test level of knowledge regarding Cardiopulmonary Resuscitation among degree students; Evaluate the effect of Structured Teaching Program on Knowledge regarding Cardiopulmonary Resuscitation among degree students; Find out the association between the pre-test level of knowledge and selected demographic variables. Methodology: Quantitative approach was used for the study and Pre experimental one group Pre-test Post-test design was selected. This study was based on J W Kenny's Open System theory. The present study was conducted at MES KVM College, Valancherry among 100-degree students. The samples were selected by using non probability convenient sampling technique. Data were collected by using structured knowledge questionnaire to assess the knowledge regarding CPR. Structured Teaching Program was given on the same day and after 7th day the post test was done, Analysis: Data were analysed by using descriptive and inferential statistics. Results: The mean post-test knowledge score 21.57 was significantly higher than pre-test knowledge score 12.56. The obtained t value was 27.445 and p value was 0.0001. The findings showed that Structured Teaching Program on CPR was effective. There was significant association between the pre-test knowledge score with their course of study. The study concluded that structured teaching program was effective in improving the knowledge of degree students.

Keywords— *Effect, Structured Teaching Program, Cardiopulmonary Resuscitation, Degree students*

1. INTRODUCTION

Heart disease is the world's largest killer, claiming 17.5 million lives every year. About every 29 seconds, an Indian dies of heart problem. As many as 20,000 new heart patients develop every day. In India, 9 crore Indians suffer from heart disease and 30% more are at high risk. Cardiovascular diseases are more common in India and China than all economically developing countries in the world combined. Cardiovascular disease in India quadrupled in the last 40 years. WHO estimates that by 2020 close to 60% of cardiac patients worldwide will be Indian[2]. It is interesting to note that, heart disease had topped chart in Kerala in 1990 and in 2016, 37.8% of deaths reported in the state between the age group of 40-69 years were due to cardiovascular diseases. Similarly, 45.7% of deaths reported above the age group of 70 years were also due to cardiovascular diseases [3].

The correct CPR measures can reduce suffering and can be instrumental in speeding up subsequent recovery, prevent permanent disability and even save life of patients during a cardiac arrest. First few minutes following injury is called the golden time. Many complications and events that occur during this period, can convert a simple injury to death if unattended. It is important to act and react during the golden time to reduce mortality and morbidity. It is very essential that every responsible person or citizen who comes across an accident victim should be aware of essential initial help the victim may need right at the site till he is transferred to the hospital [9].

CPR alone is unlikely to restart the heart. The main purpose is to restore partial flow of oxygenated blood to the brain and heart. The objective is to delay tissue death and to extend the brief window of opportunity for a successful resuscitation without permanent brain damage [10]. In urban settings it takes an average of nearly ten minutes for professional help to arrive. During this time victims can only rely upon CPR provided by educated bystanders [11]. National Academy of Sciences and National Council in 2002 emphasized to rediscover the value of teaching CPR in colleges. In 1998, American Heart Association began a large-scale evaluation of CPR in colleges in the United States. Experts at the International Guidelines 2000 Conference strongly recommended development of CPR programs in colleges to ensure widespread learning of CPR and other BLS skills, because 70 - 80% of cardiac arrests occur at home[12].Therefore, a substantial burden of responsibility lies on the shoulders of medical

professionals who need to pass on their knowledge and skills of CPR to non-professionals in a way simple enough to be remembered and recalled rapidly in a highly stressful moment [13].

World Health Organization (WHO) Technical Report Series (1999) showed that Colleges have the potential to provide an excellent base for large scale programming and there is a need to strengthen the college as a setting for health intervention. Colleges can provide many services to young people in addition to formal education, such as health education, skill development in the areas such as lifesaving skills [14, 15].

A college is an appropriate setting for the introduction of teaching and training of students on life saving CPR skill as it offers access to young adults on a large scale. It is economically efficient and there are possibilities for short term and long-term evaluation. The college students belong to these groups who have enthusiasm in learning and excellence in performing in new things. When a competent student uses correct technique of CPR, large number of clients can be saved. Emergency resuscitation is the first hand management done for critically ill and students need to be knowledgeable in all aspects to revive the client who is struggling for life.

1.1 Objectives

- Assess the pretest and posttest level of knowledge regarding Cardiopulmonary Resuscitation among degree students
- Evaluate the effect of structured teaching program on knowledge regarding Cardiopulmonary Resuscitation among degree students
- Find out the association between the pretest level of knowledge and selected demographic variables.

2. REVIEW OF LITERATURE

A one group pre-test post-test pre-experimental study was conducted in 2013 to evaluate the effectiveness of structured teaching program on Cardiopulmonary Resuscitation among degree students. The sample of the study comprised of 30 students studying in BSc degree in Government college of Mangalore. Simple random sampling was used for selecting the samples. Structured closed ended questionnaire and observation checklist is used to evaluate the skills of degree students. The collected data were analysed using descriptive and inferential statistics. The score of pre-test was 7.07 with a mean percentage of 35.3% which was significantly increased to 14.9 with a mean percentage of 74.5 % at $p<0.001$ The study showed that planned teaching program helps to enhance the knowledge of degree students regarding Cardiopulmonary Resuscitation technique[16].

A quasi experimental study was conducted in 2019 to assess the knowledge and check the effectiveness of structured teaching program regarding CPR among Undergraduate students in Himalayan School Of Management, Dehradun. About 61 undergraduate students were selected as samples by using simple random sampling. A structured knowledge questionnaire was used for data collection followed by administered structured teaching program on cardiopulmonary resuscitation. In the pretest, majority of the undergraduate (UG) students had average knowledge (60.65%), 36.06% of the undergraduate students had poor knowledge and remaining (3.27%) had the good level of knowledge whereas in post-test, 62.92% had very good knowledge, 36.06% had good knowledge and only 1.63% had average knowledge. The result revealed that mean posttest knowledge score (25.80±3.0) was higher than mean pretest knowledge score (13.18±3.3). Calculated t value was 19.327 and it found to be highly significant at $p<0.001$. The study showed that the knowledge of under graduate students had increased after administration of structured teaching program on Cardiopulmonary Resuscitation [17].

3. MATERIALS AND METHODS

Pre-experimental and one group pre-test post-test design were adopted for this study. Non-probability convenience sampling technique was used for selecting the sample size of 100-degree students. Self-administered knowledge questionnaire was used to assess the level of knowledge among degree students.

3.1 Ethical Clearance

The study was approved by Ethical committee members and Institutional Review Board. After that prior written permission was obtained from the Principal of concerned colleges. Verbal consent was obtained from the samples to conduct the study.

3.2 Procedure of data collection

A sample of 100-degree students were selected based on convenient sampling technique. Informed consent has been obtained from each participant before data collection. An assurance was provided to the study participants that the data will be maintained confidential. Demographic variables are collected from the participants along with assessing the pretest level of knowledge on CPR by using structured knowledge questionnaire. A lecture cum demonstration was given for the study participants. On 7th day posttest was done by using structured knowledge questionnaire. The data was analyzed by using descriptive and inferential statistics.

3. RESULT AND INTERPRETATION

Table 1: Frequency and percentage distribution of demographic variables

Demographic variables	Frequency	Percentage (%) (n=100)
Gender		
Male	**20**	**20.00**
Female	**80**	**80.00**

Course of study		
BSc Chemistry	**48**	**48.00**
BSc Physics	**52**	**52.00**
Year of study		
I yr	**49**	**49.00**
IIyr	**51**	**51.00**
Parent's education		
Secondary education	**87**	**87.00**
Higher secondary education	**7**	**7.00**
UG	**4**	**4.00**
PG	**2**	**2.00**
Parents occupation		
Health professionals	**2**	**2.00**
Others	**98**	**98.00**
Type of family		
Nuclear family	**91**	**91.00**
Joint family	**9**	**9.00**
Previous knowledge on CPR		
Yes	**50**	**50.00**
No	**50**	**50.00**
Source of information		
Mass media	**12**	**24.00**
Internet	**38**	**76.00**

Table 2: Frequency and percentage distribution of degree students based on Pretest level of knowledge.

Level of Knowledge	Frequency (f)	Percentage n=100
Poor	5	5
Average	85	85
Good	10	10

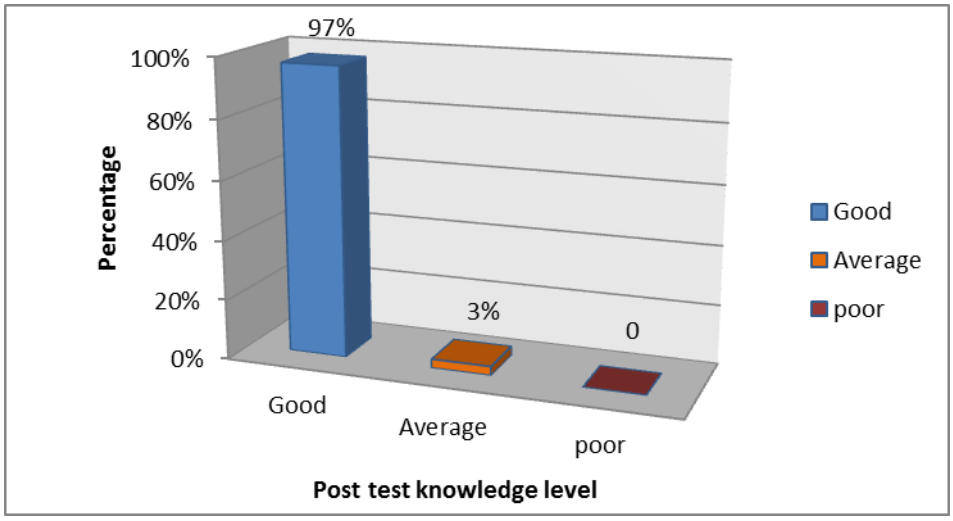

Fig. 1: Percentage distribution of degree students based on post-test knowledge

Table 3: Significance of difference in mean pre and post-test level of knowledge score

Knowledge score	n	mean	SD	t value	df	p value
Pre test	100	12.56	2.779	27.445	99	0.0001**
Post test	100	21.57	2.133			

**significant at 0.05 level

Table 4: Association of pre-test knowledge score of samples with course of study

Variable	Knowledge score			Chi square	df	p value
Course of study	**Good**	**Average**	**Poor**			
BSc Chemistry	5	36	7	8.442	2	0.015**
BSc Physics	0	49	3			

**significant at 0.05 level

There was no association between pre-test knowledge score of samples with demographic variables except for course of study.

4. DISCUSSION

Among the samples 85% of degree students had average knowledge regarding CPR, 10% had good knowledge on CPR and remaining 5% had poor knowledge on CPR. The mean pre-test knowledge score was 12.56 with a standard deviation of 2.779 and

mean post-test knowledge score was 21.57 with a standard deviation of 2.133. There is statistically significant difference in the mean pre-test and post-test knowledge score with a t value of 27.445 at 0.05 level of significance. The level of knowledge of degree students regarding CPR showed an association with course of study.

5. CONCLUSION

Structured teaching programme was an effective method to increase the knowledge of degree students regarding Cardiopulmonary Resuscitation.

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