

Effectiveness Of Video Assisted Teaching Module Regarding CPR (Cardiopulmonary Resuscitation) Among Students Studying in Selected Colleges of Maharashtra.

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Abstract—Background - A quantitative research approach was used because the study aimed to measure the knowledge of students regarding CPR and determine the effectiveness of the Video Assisted Teaching Module. **Objective** To assess the effectiveness of a Video Assisted Teaching Module (VATM) on knowledge regarding Cardiopulmonary Resuscitation (CPR) among students studying in selected colleges of Maharashtra. **Method** A pre-experimental one-group pre-test and post-test research design was adopted. In this design, students' knowledge was assessed before the intervention, the Video Assisted Teaching Module was administered, and knowledge was assessed again after the intervention. The study included 126 college students selected using a non-probability convenient sampling technique. The participants were non-medical undergraduate students aged 18-25 years who were willing to participate and provide informed consent and were available during the data collection period. Students who had recently completed certified CPR/BLS training or who participated in the pilot study were excluded. **Result** - Overall, the dissertation investigated the effectiveness of a Video Assisted Teaching Module regarding CPR among students studying in selected colleges of Maharashtra. A quantitative pre-experimental one-group pre-test/post-test design was used among 126 students. A 30-item structured questionnaire was used to assess CPR knowledge before and after the intervention. The findings showed a significant improvement in students' knowledge following VATM, with the mean score increasing from 13.2 to 30.4 and a highly significant p-value of 0.0001. Therefore, the study supports the use of Video Assisted Teaching Modules as an effective method for improving CPR knowledge among college student. **Conclusion** - The major finding of the study was the improvement in CPR knowledge following administration of the Video Assisted Teaching Module. The mean knowledge score increased from 13.2 ± 3.8 in the pre-test to 30.4 ± 1.5 in the post-test, with a mean difference of approximately 17.2. The calculated paired

t-value was 51.52 and the p-value was 0.0001, indicating a statistically highly significant improvement in knowledge following the intervention.

I. INTRODUCTION

Cardio Pulmonary resuscitation is an important life savings first aid skill, practiced throughout the world. It is the only known effective method of keeping a victim of cardiac arrest alive long enough for definitive treatment to be delivered. In 1954, Gerns Elam was the first to demonstrate experimentally the cardio pulmonary resuscitation (CPR) was a sound technique and with Dr. Peter Safar, he demonstrated its superiority to previous method. Peter Safar wrote the book ABC of resuscitation in 1957. In the United State, it was first promoted as a technique for the public to learn in the 1970s. There were some techniques to keep people alive developed in the 18th century, both in Japan and in Europe, but it was well into the 20th century before Elam and Safar discovered and published the truly effective method known as CPR.¹

Cardiopulmonary resuscitation (CPR) is a series of life-saving actions that improve the chances of survival, following cardiac arrest. Successful resuscitation, following cardiac arrest, requires an integrated set of coordinated actions represented by the links in the Chain of Survival. The links include the following: immediate recognition of cardiac arrest and activation of the emergency response system, early CPR with an emphasis on chest compressions, rapid defibrillation, effective advanced life support, and integrated post-cardiac arrest care. The newest development in the CPR guideline is a change in the basic life support sequence of steps from "A-B-C"

(Airway, Breathing, Chest compressions) to "C-A-B" (Chest compressions, Airway, Breathing) for adults. Also, "Hands-Only (compression only) CPR" is emphasized for the untrained lay rescuer.²

As India advances toward the Vikasit Bharat 2047 vision, improving public health literacy and community readiness becomes a prerequisite for a resilient and empowered society. Equipping the country's youth, its greatest demographic asset, with lifesaving skills represents a tangible and strategic step toward this long-term national goal. This initiative reflects how health preparedness, education, and civic responsibility intersect to drive India's development agenda.³

As per a 2012 study approximately 10.3% or 700,000 Sudden Cardiac Death (SCD) cases occurred in India annually, with 21% affecting individuals under the age of 50. The number of deaths due to sudden cardiac death (SCD) has significantly increased in India over more than a decade, grabbing a lot of public and media attention and emphasizing the urgent need for community CPR education to save lives.⁴

II. OBJECTIVES

General objective - To assess the effectiveness of a Video Assisted Teaching Module (VATM) on knowledge regarding Cardiopulmonary Resuscitation (CPR) among students studying in selected colleges of Maharashtra.

Specific Objective -

1. To assess the pre-test knowledge regarding CPR among students.
2. To assess the post-test knowledge regarding CPR after administration of the Video Assisted Teaching Module.
3. To compare the pre-test and post-test knowledge scores regarding CPR.

III. METHOD

It is a precise systematically gathering of information relevant to the research purpose or the specific objective or assumption of the study. The procedure for collecting data is not a mechanical process that can be totally involved perceiving, reacting, interacting, reflecting, attaching meaning and recording. Pre-experimental one group pre-test post-test research

design was used to evaluate the knowledge of subject regarding CPR (cardiopulmonary resuscitation) 126 subjects were selected for the study using non-probability convenient sampling technique. In this study data was collected by using structured knowledge questionnaires, data was analyzed by using descriptive and inferential statistics on the axis of objective and hypothesis of the study.

Sample size:

The number of samples being selected in the study is 126 college students.

Sampling technique:

Sampling is the process of selecting a representative segment of population under study.

The process of sampling makes it possible to accept a generalisation to the intended population on the basis of care full observation variable with a relatively small proportion of the population. In Present study Non-Probability Convenient Sampling Technique was used.

IV. DATA COLLECTION TOOLS AND TECHNIQUES

Data collection is a crucial aspect of research. The study aims to assess the effectiveness and knowledge regarding on CPR (cardiopulmonary resuscitation) students studying in selected colleges of Maharashtra, and for this purpose, a self-structured questionnaire was developed.

Data analysis -

The data was decided to be analysed by both descriptive and inferential statistics on the basis of objective and hypothesis of the study. To compare the data a master data sheet was prepared by the investigator. These include demographic data and clinical data would be analysed using frequency and percentage. The study included 126 college students selected using a non-probability convenient sampling technique. The participants were non-medical undergraduate students aged 18-25 years who were willing to participate and provide informed consent and were available during the data collection period. Students who had recently completed certified CPR/BLS training or who participated in the pilot study were excluded. A self-structured questionnaire

was developed by the investigator after reviewing textbooks, journals, online sources, reports, publications and previous theses and consulting experts. The tool consisted of two sections. Section A collected demographic information, including age, educational status, religion, gender, previous CPR programme attendance and source of information. Section B consisted of 30 questions, with one mark for each question, giving a total possible score of 30.

The demographic findings showed that approximately 91.3% of students were in the 20-22-year age group, while about 9% were 17-19 years old and none were in the 23-25-year group. Regarding educational status, the largest group was from the commerce stream, representing approximately 46.8% of the students. Regarding religion, approximately 70.6% of students were Hindu, while 26.19% were Buddhist and smaller percentages belonged to Christian and Muslim groups. Regarding gender, 58% were female and 42% were male. The study also found that 84.9% of students had not attended a previous CPR programme, while 15.1% had attended one. Mobile phones and television were among the major sources of CPR information, accounting for approximately 43.7%, while journals, newspapers and books accounted for 14.3%. The data was decided to be analysed by both descriptive and inferential statistics on the basis of objective and hypothesis of the study. To compare the data a master data sheet was prepared by the investigator. These include demographic data and clinical data would be analysed using frequency and percentage. The significant association between post-test score of Knowledge and demographic variables would be calculated using chi square test.

This plan was tested with pilot study. Data on Self-administered questionnaire would be analysed by using mean, SD, range and median and unpaired 't' test and chi square test using SPSS software.

V. RESULT

The major finding of the study was the improvement in CPR knowledge following administration of the Video Assisted Teaching Module. The mean knowledge score increased from 13.2 ± 3.8 in the pre-test to 30.4 ± 1.5 in the post-test, with a mean difference of approximately 17.2. The calculated paired t-value was 51.52 and the p-value was 0.0001, indicating a statistically highly significant

improvement in knowledge following the intervention. The findings showed that there was no statistically significant association between post-test CPR knowledge and previous CPR programme attendance or sources of information. For previous CPR training, the p-value was 0.3419, while for sources of information the p-value was 0.8332, both greater than 0.05. The study concluded that the Video Assisted Teaching Module was effective in improving knowledge regarding CPR among college students. The substantial increase in mean knowledge scores from 13.2 ± 3.8 to 30.4 ± 1.5 and the highly significant statistical result of $t = 51.52$ with $p = 0.0001$ demonstrate the effectiveness of the intervention. Overall, the investigated the effectiveness of a Video Assisted Teaching Module regarding CPR among students studying in selected colleges of Maharashtra. A quantitative pre-experimental one-group pre-test/post-test design was used among 126 students. A 30-item structured questionnaire was used to assess CPR knowledge before and after the intervention. The findings showed a significant improvement in students' knowledge following VATM, with the mean score increasing from 13.2 to 30.4 and a highly significant p-value of 0.0001. Therefore, the study supports the use of Video Assisted Teaching Modules as an effective method for improving CPR knowledge among college students. This chapter deals with analysis and interpretation of data collected from 126 students studying in selected colleges of Maharashtra. The SAQ was used before and after an intervention to collect data from students for analysis & interpretation. Further, analysed data were organized in accordance with objectives and hypothesis of research question.

Table No.4.1.1: - Percentage-wise distribution of college students according to their demographic characteristics.

n=126

Demographic Variables	No. of college students	Percentage
1.Age (years)		
17-19 years	11	08.70 %
20-22 years	115	91.30 %
23-25 years	00	00 %
2.Educational Status		
Arts	26	20.60 %

Science	17	13.40 %
Commerce	59	46.80 %
Others	24	19 %
3.Religion		
Hindu	89	70.60 %
Buddhist	33	26.40 %
Muslim	04	03.10%
Christian	00	00 %
4. Gender		
Male	53	42 %
Female	73	58 %
5. Have you attended any previously CPR program		
Yes	19	15.10 %
No	107	84.90 %
6. Sources of information		
Friends, family, teachers	53	42.10 %
Mobile, Television	55	43.70 %
Journals, Newspapers and Books	18	14.30 %

Table No: 4.2.4 Area wise Mean & SD of knowledge scores on CPR (cardiopulmonary resuscitation) students studying in selected colleges before intervention.

n=126

Area	Item	Mean	SD
General information on CPR (Cadio Pulmonary Resuscitation)	5	2.3	1.1
Importance and objectives of CPR	5	2.9	0.9
Safety precautions during CPR	9	2.5	1.2
Steps of CPR for adult and child	17	5.4	2.4
Overall	36	13.2	3.8

Areas wise Mean & SD knowledge scores on CPR shows the higher mean score (5.4 ± 2.4) for the area of steps of CPR for adult and child whereas the area pertinent to General information on CPR (Cadio Pulmonary Resuscitation),

Table 4.3.1: Comparison of knowledge scores on CPR (cardiopulmonary resuscitation) students studying in selected colleges after intervention.

n=126

Level of knowledge	Pre - Test		Post - Test	
	Frequency	Percentage	Frequency	Percentage
Very Poor	0	0%	0	0%
Poor	31	25.5%	0	0%
Average	72	35.5%	0	0%
Good	20	54.4%	0	0%
Very Good	3	63.8%	126	84.4%
Overall	126	36.6%	126	84.4%

importance and objectives of CPR, and safety precautions during CPR had the lowest mean scores of 2.3 ± 1.1 , 2.9 ± 0.9 , 2.5 ± 1.2 respectively (table - 4.2.4). Hence, it was interpreted that the knowledge of students was not similarly distributed between the areas of CPR (cardiopulmonary resuscitation).

Further, none of them have remained with very poor, poor, average or good knowledge after an intervention (table - 4.3.1). Hence, it was interpreted that the huge difference in knowledge percentage in post-test was due to an effect of VATM regarding CPR (cardiopulmonary resuscitation) students studying in selected colleges.

Testing of hypothesis

HO: There will be no statistically significant difference between the pre-test and post-test knowledge scores regarding CPR among students after the administration of the Video Assisted Teaching Module.

Paired 't' test was computed to find out the significant difference between pre-test and post-test knowledge score on CPR among college students. Highly significant difference ($p < 0.0001$) was found with a 't' value of 2.3 between a pre-test & post-test knowledge score on CPR among college students. (Table-4.4.1).

Table-4.4.1: Significant difference between pre-test and post-test knowledge score on CPR (cardiopulmonary resuscitation) students studying in selected colleges.

n=126

Overall	Mean	SD	Mean Difference	t-value	p-value
Pre Test	13.2	3.8	17.2	2.3	0.0001
Post Test	30.4	1.5			Sp < 0.05

Hence, it was interpreted that the higher scores of students were due to an effect of VATM on CPR (cardiopulmonary resuscitation) students studying in selected colleges.

Therefore, the VATM on CPR (cardiopulmonary resuscitation) students studying in selected colleges was considered as effective. However, the difference observed between pre-test & post-test knowledge score value was true difference; hence a research hypothesis was accepted.

Table-4.4.2: Area wise significant difference between pre-test and post-test knowledge on CPR (cardiopulmonary resuscitation) students studying in selected colleges.

n=126

Area	Pre - test	Post - test	t - value	P - value
	Mean ± SD	Mean ± SD		
General information on CPR (Cadio Pulmonary Resuscitation)	2.3 ± 1.1	4.2 ± 0.6	17.26	0.0001*** S.p<0.05
Importance and objectives of CPR	2.9 ± 0.9	4.1 ± 0.6	13.85	0.0001*** S.p<0.05
Safety precautions during CPR	2.5 ± 1.2	7.5 ± 0.9	41.06	0.0001*** S.p<0.05
Steps of CPR for adult and child	5.4 ± 2.4	14.4 ± 1.1	39.71	0.0001*** S.p<0.05
Overall	13.2 ± 3.8	30.4 ± 1.5	51.52	0.0001*** S.p<0.05

*P value<0.0001***highly significant, P value<0.001**moderately significant, P value<0.05* significant, NS-not significant*

Paired 't' test was computed to find out the significant difference between area wise pre-test and post-test knowledge score on CPR (cardiopulmonary resuscitation) students studying in selected colleges. Highly significant difference ($p < 0.0001$) was found with a 't' value of 41.06 in the area of safety precautions during CPR when compared to other areas.

However, the calculated 't' value was similar ($p^{\wedge} < 0.0001$) in the areas of steps of CPR for adult and child 't' value = 39, 71 and General information on CPR (Cadio Pulmonary Resuscitation) ($\wedge t' = 17.26$) (table-4.4.2). Hence, it was interpreted that the difference observed between pre-test & post-test area wise knowledge score of students were due to an effect of VATM on CPR (cardiopulmonary resuscitation) students studying in selected colleges.

VI. DISCUSSION

The discussion is presented according to the objectives of the study.

Objective 1

To assess the effectiveness of a Video Assisted Teaching Module (VATM) on knowledge regarding Cardiopulmonary Resuscitation (CPR) among students studying in selected colleges of Maharashtra. Distribution of Mean & SD knowledge scores on CPR before intervention shows that 72 of them had an average knowledge with a mean score of 12.8 plus/minus 1.5. However, the overall knowledge mean score was 13.2 plus/minus 3.8. Hence, it was interpreted that students had poor mean knowledge scores on CPR (cardiopulmonary resuscitation) before intervention. Areas wise Mean & SD knowledge scores on CPR shows the higher mean score (5.4 ± 2.4) for the area of steps of CPR for adult and child whereas the area pertinent to General information on CPR (Cadio Pulmonary Resuscitation), importance and objectives of CPR, and safety precautions during CPR had the lowest mean scores of 2.3 ± 1.1 , 2.9 ± 0.9 , 2.5 ± 1.2 respectively.

In pre-test, 72 students had good knowledge (35.5%) & only 3 had very good knowledge (63.8%) whereas in the post-test, the overall knowledge was increased to 84.4% revealing very good knowledge on CPR (cardiopulmonary resuscitation). Further, none of

them have remained with very poor, poor, average or good knowledge after an intervention.

Objective 2

The overall knowledge percentage was 36.6% in pre-test, whereas after an intervention the percentage of knowledge on steps of CPR for adult and child was significantly increased to (84.4%) Similarly, the post-test knowledge percentages were increased irrespective of specific areas of steps of CPR. However, the knowledge area of general information on CPR (Cadio Pulmonary Resuscitation) had the highest increase in percentage (84.1%) when compared to other knowledge areas of CPR to importance and safety.

Objective 3

The overall area wise Mean knowledge score was 13.2±3.8 before intervention whereas it was slightly changed to 30.4±1.5 after an intervention without making any significant difference in the mean values. Similarly, in all the areas of CPR to reduce accident cases the pre-test and post-tests knowledge mean scores were more or less similar.

However, the knowledge area of CPR to reduce accident cases had the highest increase in Mean score 14.4±1.1 when compared to other areas of CPR to reduce accident cases. Hence, it was interpreted that the huge difference in Mean knowledge scores in post-test was due to an effect of VATM on regarding CPR (cardiopulmonary resuscitation) students studying in selected colleges.

Objective 4

Paired 't' test was computed to find out the significant difference between pre-test and post-test knowledge score on CPR among college students. Highly significant difference ($p < 0.0001$) was found with a 't' value of 2.3 between a pre-test & post-test knowledge score on CPR among college students. Hence, it was interpreted that the higher scores of students were due to an effect of VATM on CPR (cardiopulmonary resuscitation) students studying in selected colleges. Therefore, the VATM on CPR (cardiopulmonary resuscitation) students studying in selected colleges was considered as effective. However, the difference observed between pre-test & post-test knowledge score value was true difference; hence a research hypothesis was accepted.

VII. CONCLUSION

The findings of this study are expected to provide valuable evidence regarding the usefulness of video-assisted teaching in nursing and health education. If found effective, the module can be incorporated into college health education programs, orientation sessions, and first-aid training activities. This will help prepare students to respond confidently and appropriately during medical emergencies, thereby contributing to improved community health outcomes and increasing survival rates from sudden cardiac arrest. The study may also encourage educational institutions and policymakers to include CPR training as a regular component of the college curriculum, promoting a culture of emergency preparedness and life-saving skills among young adults.

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