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Original Article

Effectiveness of STP on Knowledge and Practice Regarding CPR among Students

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Abstract

Background: Cardiac arrest is an emergency condition among the people in the hospitals as well as out-of-hospitals in the community. Bystander's plays a pivotal role in the early management of cardiac arrest by performing cardio pulmonary resuscitation. The present study was aimed to improve the cardiopulmonary resuscitation (CPR) skills through structured teaching programme (STP) among students of senior secondary school.

Materials & Methods: Evaluative approach and pre-experimental one group pre-test post-test design was adopted for this study followed by STP on CPR skills. Using a probability sampling, simple random sampling technique was used to select students of age 12-18 years from urban senior secondary schools of Udaipur. The data was collected, tabulated, and analyzed using descriptive and inferential values by IBM statistical package for social sciences (SPSS; version 23) software.

Results: The mean SD of the knowledge score of pre-test was 6.89±2.89 whereas mean SD of the post-test knowledge score was 15.08±2.43. The mean SD of the Practice score of pre-test was 3.40±1.45 whereas the mean SD of the Practice score of post-test was 7.28±1.71. There was a positive correlation (r-0.58) between the knowledge and Practice score. There was a significant association between Practice score and the occupation of the father of the students.

Conclusions: It was observed that the increasing the number of trained school students can play pivotal role as a bystander with the victims of sudden cardiopulmonary collapse in the community to provide CPR. So, the STP and demonstration using manikin on CPR skills among school going students of urban senior secondary school is effective to enhance their knowledge and Practice score related to CPR and increase the positive outcomes.

Keywords: Effectiveness; Practice; Knowledge; CPR, School; Students; Structured teaching programme.

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Introduction

Death can occur at any time due to any cause. However, death in certain instances can be prevented by giving CPR on time by the school children. CPR is a technique used in cardiac arrest to establish heart and lung function until advanced life support is available[1].

CPR may not save the victim even when performed properly, but if started within 4 minutes of cardiac arrest and defibrillation is provided within 10 minutes a person has a 40 percent chance of survival[2].CPR provides

oxygenated blood to the brain and the heart, long enough to keep vital organs alive until the victim is transferred[3]. During those critical minutes CPR can provide oxygenated blood to the victim's brain and the heart, dramatically increasing his chance of survival. And if properly instructed, almost anyone can learn and perform CPR[4]. CPR is now become the most preferred method[5].

STP regarding CPR skills is to create next generation as qualified lifesavers to any victim by giving school students the opportunity to learn CPR skills and creating more qualified lifesavers in our communities. The CPR skills enable school students to learn the lifesaving skills of CPR through STP.

Materials & Methods:

Study Design and Setting: The present study was conducted during May 2022 to July 2022 and used evaluative approach, a pre-experimental, one-group pre-test, post-test design to evaluate the CPR skills before and after administration of STP and demonstration on manikin among sixty students of urban senior secondary schools at Udaipur, Rajasthan.

Development of tool: The content validity of the self-structured knowledge questionnaire and practice check list on CPR skills was determined by sending them to the panel of experts; Whereas STP includes the procedures and skills regarding CPR. After seeking their valuable comments and suggestions, tools were modified. The test-retest method was used for the reliability of the data and it was found 0.82 which suggests that tool was highly reliable.

Data Collection Process: Data were collected from May 2022 to July 2022. The investigator administered the tool to those who were willing to participate after introducing and explaining the purpose of the study. Time to fill up, the pretest questionnaire was given to the respondents and practice checklist on CPR was assessed. Next day CPR was demonstrated on manikin and allowed the participant to Practice score CPR on manikin every day. After seven days, the investigator administered posttest on knowledge questionnaire and assessed their skills on performing CPR through the observational checklist. Baseline data were collected for knowledge and Practice score by administering questionnaire and practice checklist before and after STP and demonstration on manikin respectively.

Plan for data analysis: Descriptive statistics viz. mean, standard deviation, percentage, and frequency were used to describe the demographic characteristics of the study participants. The significance of difference between the mean pre-test and post-test knowledge score regarding CPR was calculated using paired 't' test. The association between demographic variables and pre-test knowledge and practice checklist score regarding CPR was determined by chi-square test. We set the statistical significance level at $p<0.05$ and 95% confidence interval. Results are presented using Tables and Figures.

Ethical consideration: Ethical approval was obtained from the institutional ethics committee vide letter no. TCN/UDR/2021-22-112, Dated 3/02/2022. Assurance was given to the participants regarding the confidentiality**.**

Results

The demographic variables that the majority number of adolescents, 80% was in the age group of 13-15 years, 24% were having one sibling, 22% were having two siblings, and 70% were living in joint family and majority 53% of adolescent were received information from teachers, 15% received information from television.

Level of Knowledge Adolescent regarding CPR.

The pretest knowledge score of adolescent 36 (60%) had inadequate knowledge, 21 (35 %) had moderately adequate knowledge and 3 (5%) had adequate knowledge and posttest knowledge score of adolescent 13 (21.66%) had moderately adequate knowledge & 47 (78.33%) had adequate knowledge. (Table no.-1)

The pretest Practice score of adolescents 43 (71.6%) had Unfavorable Practice score& 17 (28.3%) had favorable Practice score and posttest. Practice score of adolescents 4 (6.60%) had Unfavorable Practice score, 15 (25%) had favorable Practice score and 41 (68.30%) had most favorable knowledge.

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Table no. -1: Comparison of Pretest and Posttest Knowledge and Practice score Regarding CPR skills

	Mean	Mean Difference	Mean %	Standard Deviation	
Knowledge					
Pre-test	6.89	8.19	34.4%	2.89	0.02
Post-test	15.08		75.4%	2.43	
Practice score					
Pre-test	3.40	3.88	34%	1.45	0.09
Post-test	7.28		72.8%	1.71	

Evaluate the Effectiveness of STP.

Illustrates that the mean posttest knowledge score 15.08 was higher than mean pretest knowledge score 6.89. The computed 't' value 5.85 ($p<0.05$) showed that there was a significant difference between the pretest and posttest knowledge score and mean posttest Practice score7.28 was higher than mean pre-test Practice score scores 3.40. The computed't' value 5.30 ($p<0.05$) showed that there was a significant difference between the pretest and posttest mean Practice score. (Fig.-1)

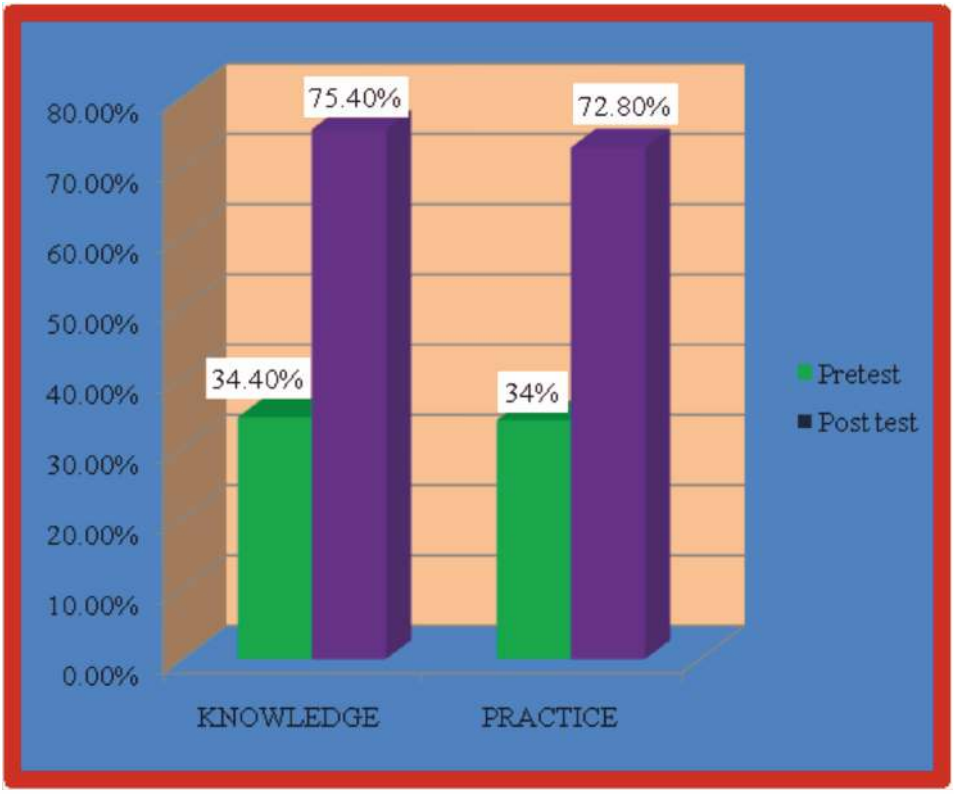

Fig. -1. Bar diagram represents effectiveness of STP on knowledge and Practice score

Relationship between the posttest knowledge score and the posttest Practice score

Table no. 2. The Correlation value 0.56 shows that there is positive relationship between posttest knowledge and Practice score.

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Table –2. Show the correlation between the knowledge and Practice score.

S.N.	Variables	Correlation value	Statistical value
1	Post-test knowledge and post-test Practice score scores	r= 0.56	Positive correlation

There is no association between posttest knowledge and selected demographic variables like age, gender, no. of siblings, type of family, occupation of father, family income.

There is no significant association between posttest Practice score and selected demographic variables like age, gender, number of siblings, type of family, and family income.

But there is a significant association found in the Practice score with the occupation of the father of the adolescents. However, the chi- square value 18.57 established denotes that the association between Practice score and occupation of father is statistically significant at 0.05 levels.

Discussion-

The present study shows an increase in knowledge and practice scores among school students regarding CPR skills. Reviewing the literature, M Meissner et al before training, 29.5% of students performed chest compressions as compared to 99.2% post-training. At the four-month follow-up, 99% of students still performed correct chest compressions[6]. Similar study conducted by Hisamuddin NA Rahman et al the level of knowledge and an attitude of secondary school children was shown to be acceptable prior to the intervention[7]. And Related study conducted by **Pauline's,** to assess the level of knowledge regarding CPR and found that only 2.6% had inadequate knowledge, 44.7% percent had moderately adequately adequate knowledge, 52.7% percent had in adequate knowledge. The researcher concluded that CPR Practice score and knowledge should be refreshed and updated regular. The present study showed that the mean posttest knowledge score 15.08 was higher than mean pretest knowledge score 6.89. The computed 't' value 5.85 ($p<0.05$) and Practice score 7.28 was higher than mean pre-test Practice scores 3.40. The computed 't' value 5.30 ($p<0.05$) showed that there was a significant improve the knowledge of adolescents.

Conclusions: STP is improving the knowledge and skills regarding CPR among adolescents of secondary schools. STP was found significantly effective to improve the knowledge and skills regarding CPR among adolescents of secondary schools. Health education must be an integral part of the health care delivery system at a peripheral level to effectively increase the knowledge of adolescents.

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Conflict of interest: There is no conflict of interest.

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