A Study to Assess the Effectiveness of Planned Demonstration Programme on Cardiopulmonary Resuscitation in Terms of Practice among Higher Secondary Students of HV Vidyalaya School, Surat

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Abstract

Background of the Study: 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 someone dies, we grieve because he/she is no more with us. Death can occur at any cause. However death in certain instances can be prevented. For instance death due to cardiac arrest can be prevented by giving Cardio Pulmonary Resuscitation (CPR) in time. Cardio Pulmonary Resuscitation is a technique used in a cardiac arrest to establish heart and lung function until more Advance Cardiac Life Support (ACLS) is available.

Aim of the Study: To Assess the Effectiveness of Planned Demonstration Programme on Cardio Pulmonary Resuscitation.

Material and Methods: The study was conducted at H.V.Vidhyalay School of Surat. The researcher used Non-probability convenient sampling method to select 30 higher secondary students. A Planned Demonstration Programme and an Observational Checklist were developed to assess the practice of the students. Content validity of the developed tool was established by 4 experts and necessary notification was made as suggested by them. Reliability of an observational checklist was done by inter rater technique and the tool was found to be reliable.

Conclusion: The findings of the study showed that the structured teaching programme was very effective in improving the level of knowledge.

Keywords: Cardiopulmonary Resuscitation; Advance Cardiac Life Support.

Introduction

Basic Life Support (BLS) is the level of medical care which is used for patients with life threatening illness or injuries until the patient can be given full medical care at hospital. It can be provided by medical personnel, including emergency medical technicians, paramedics and by easy persons who have received BLS Training. It is generally used in the pre hospital settings and can be provided without medical equipment's.

CPR can consist of many different things, but the initial, vital part is BLS. Cardio means "of the heart" and Pulmonary means "of the lungs" Resuscitation is a medical word that means "to revive" or "bring back to life". Many people who handle emergencies such as police officer, fire-fighters, paramedics,

doctors and nurses are all trained to do CPR. Many other non medical persons like lifeguards, teachers, and students of higher secondary schools and may be your mom or dad knows how to do CPR too. People can start getting credible work experience at an earlier age, which will only help them out more down the road. And since the courses are so short, it dose not have to interfere with high school.

The absence of normal breathing to be the main sign of cardiac arrest in a non-responsive victim. Once CPR has started, it is now recommended that the rescuer should only stop if the victim shows signs of regaining consciousness such as coughing, opening his eyes, speaking or moving purposefully as well as breathing normally.

The advantage of the training is also essential for parents of small children and teachers, adolescents at play and sunstroke. When an emergency strikes, all of a sudden immediate medical help is not available on the spot. The training in BLS equips trained persons to help, save life promptly and effectively in such emergencies instead of being were helpless out workers.

In India, very spars data are available about survival after CPR. Among those who survive, survival rates vary substantially between countries due in large part to community differences in the chain of survival. To improve survival after cardiac arrest, care must be optimized at each point along the cardiac arrest continuum including a rapid emergency response, provision of CPR by by standers, delivery of high quality chest compressions with minimal interruptions by first responders, rapid defibrillation, and optimization of post resuscitation care. Out of Hospital Cardiac Arrest (OHCA) is a leading cause of death in first world countries. The estimated incidence in the United States is about 1/1000 population per year (15% - 20% of all deaths). If victims of OHCA can receive immediate and appropriate treatment, they have a 30%-70% chances of survival.

In India 98% population is not trained in the basic lifesaving technique of CPR, shows a survey conducted by Lybrate, an online doctor consultation platform. This is the most crucial and basic procedure to save a life in the event of sudden cardiac arrest. The pan survey shows that less than 2% of the 1,00,000 surveyed agreed to be knowing the technique, while only 0.1% said they have ever performed it on someone in case of an emergency .6% of the people surveyed were from Bangalore, out of that, 4.5% of the people knew about CPR, 4.3% of male and 4.8% of female from Bangalore knew about CPR, reveals the study.

Objectives of the Study

- To assess the level of practice regarding Cardio Pulmonary Resuscitation among higher secondary students of HV Vidhyalaya school of Surat before and after planned demonstration Programme.

- To determine the effectiveness of planned demonstration programme among higher secondary students of H.V. Vidhyalaya school of Surat by comparing the pre-test and post-test practice score.

Material and Methods

The study was conducted at H.V.Vidhyalay School of Surat. The researcher used Non-probability convenient sampling method to select 30 higher secondary students. A Planned Demonstration Programme and an Observational Checklist were developed to assess the practice of the students. Content validity of the developed tool was established by 4 experts and necessary notification was made as suggested by them. Reliability of an observational checklist was done by inter rater technique and the tool was found to be reliable.

Ethical Consideration

The study was proposed and submitted to the ethical committee, Vibrant Nursing College and experts on the committee approved the study. All respondent were carefully informed about the purpose of the study and their part during the study. Informed consent for the study was obtained from all participants. Thus, the investigator followed the ethical guidelines, which issued by the research committee. Necessary permission to conduct the study was requested and obtained from the Vibrant Nursing College Surat, Principal of H.V School Surat. The study was done without any violation of human rights.

Results

In the above table 1, it can be seen that the practice area was divided into 5 sub areas i.e. checking scene safety, Assessment and activation, Cycle 1 of CPR, Cycle 2 of CPR and Evaluation. The Mean pre-test score of area related to Checking scene safety was 0.23 (7.67%) and Mean post-test score was 2.8 (93.33%). Hence the gain in this area was 85.66%. The Mean pre-test score of area related to Assessment and activation was 0.67 (16.75%) and Mean post-test score was 3.6 (90.00%). Hence the gain in this area was 73.25%. The Mean pre-test

Alka Tajne/ A Study to Assess the Effectiveness of Planned Demonstration Programme on Cardiopulmonary Resuscitation in Terms of Practice among Higher Secondary Students of HV Vidyalaya School, Surat

11

score of area related to Cycle 1 of CPR was 0.77 (12.83%) and the Mean post-test score was 5.5 (91.67%).

Table 1: Area wise Mean, Mean percentage and Percentage gain of pre-test and post-test Practice scores on Practice of Cardiopulmonary Resuscitation.

(N=30)

Task	Max. score	Pre-test score		Post-test score		% gain
		Mean score	%	Mean score	%	
Checking Scene Safety	3	0.23	7.67%	2.8	93.33%	85.66%
Assessment and Activation	4	0.67	16.75%	3.6	90.00%	73.25%
Cycle 1 of CPR	6	0.77	12.83%	5.5	91.67%	78.84%
Cycle 2 of CPR	2	0.7	35.00%	2	100.00%	75.00%
Evaluation	1	0.57	57.00%	1	100.00%	43.00%
Total	16	2.94	25.85%	14.9	95.00%	69.15%

Hence the gain in this area was 78.84%. The Mean pre-test score of area related to Cycle 2 of CPR was 0.70 (35.00%) and the Mean post-test score was 2 (100.00%). Hence the gain in this area was 75.00%. The Mean pre-test score of area related to Evaluation was 0.57 (57.00%) and the Mean post-test score was 1 (100.00%). The data in the table further indicates that the post-test mean percentage practice scores in all content areas were higher than the pre-test mean percentage practice scores.

Table 2: Mean, Median, Standard deviation of Pre-Test and Post-Test Practice Scores of Higher Secondary Students on Procedure of Cardiopulmonary Resuscitation.

(N=30)

Practice Score	Mean	Mean diff.	Median	SD	Calculated t-value	Tabulated t-value
Pre-test	2.94	11.96	3	0.27	13.4	2
Post-test	14.9		15	1.89		

Significant at 0.05 level DF (29), t value= 2.00

The data presented in table 2 shows the comparison between pre-test and post-test practice score obtained by the samples on procedure of Cardiopulmonary Resuscitation. There was total 16 items in Structured Observational Checklist for practice. The data presented in the table also indicates that the Mean post-test practice score 14.90 is higher than the Mean pre-test practice score 2.94 with a Mean difference of 11.96. The findings also showed that the Standard Deviation of pre-test is 0.27 and post-test practice score is 1.89. Thus, it

indicates that Planned Demonstration Programme was effective in increasing the practice of the higher secondary students. Percentage distribution of higher secondary students regarding practice on Cardiopulmonary Resuscitation. As the calculated value of 't'> the tabulated value of 't' (13.40>2.00), the null hypothesis H01 was rejected and H0 hypothesis was accepted that the mean post-test practice score is significantly higher than the mean pre-test practice score at 0.05 level of significance.

Table 3: Percentage distribution of higher secondary students regarding practice on Cardiopulmonary Resuscitation.

Score	Interpretation	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1-8	Poor	30	100%	0	0%
9-16	Good	0	0%	30	100%

Table 3 shows that, out of 30 samples 30 (100%) had poor practice score in pre-test practice score. But in post-test practice score there was increase in practice of the samples by 30 (100%) which is very good score. Therefore, it is concluded that post practice score is higher than the pre practice score. Hence the Planned Demonstration Programme was effective in increasing practice on Cardiopulmonary Resuscitation (CPR).

Discussion

This study addressed to assess the effectiveness of a planned demonstration programme regarding Cardiopulmonary Resuscitation in terms of Practice among Higher Secondary Students of H. V. Vidyalaya School of Surat. The investigator used an Observational Checklist for assessment of practice among higher secondary students. In this study, 30 samples participated. In relation of the finding of the study, it was revealed that out of 30 samples, 30 (100%) had poor practice score of pre-tests. In the column of post-test of practice, it shows that out of 30 samples whole 30 (100%) students had very good practice on Cardiopulmonary Resuscitation. Thus, it indicates that the Planned Demonstration Programme was effective in increasing the practice of the Higher Secondary Students on Cardiopulmonary Resuscitation.

The presented study can be supported with the Vatsala Rao et al., (2019) a quasi-experimental study was conducted, with a post-test design, to compare the effect of two self-instructional modules and demonstration method of teaching cardiopulmonary resuscitation in terms of knowledge and practice

among 2nd year B.Sc. Nursing Students of selected college of Ahmedabad. 60 samples were selected using convenience sampling technique and were randomly allotted to the group demonstration and self-study module. A knowledge questionnaire consisting of 36 multiple choice questions was used to assess knowledge and an observational checklist of cardiopulmonary resuscitation steps were used to assess the practice.

The study revealed that the mean difference in the post-test knowledge scores in between two groups was statistically significant. The demonstration group had a post-test mean of 27.43 and the self-instructional module group had a post-test mean of 21.6. There was also a significant difference in the acquisition of skills from pre-test to post-test. The demonstration group should the least amount of errors on post-test with an adjusted mean of 13.4 as compared to self-instructional module group's adjusted mean of 8.83. It was concluded that demonstration is more effective as compared to self-instructional module for teaching Cardiopulmonary Resuscitation.

Conclusion

The following conclusion can be drawn from the study findings:

Practice deficit exit in all the areas of Cardiopulmonary Resuscitation. The planned demonstration programme was found to be effective in enhancing the practice of samples regarding cardiopulmonary resuscitation. Thus, the planned demonstration programme can be used for the large population in different settings.

The investigator concluded that there was significance increase in the mean post-test score as compared to mean pre-test score of practice after administration of planned demonstration programme. In practice the calculated t value was greater than tabulated t value at 0.05 level of significance which was statistically significant the null hypotheses were rejected, and research hypotheses were accepted so, investigator concluded that higher secondary students gained significant increase in practice that planned demonstration programme was effective.

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