



EFFECT OF SKILL TRAINING PROGRAMME ON KNOWLEDGE AND SKILL OF ASHA WORKERS ON ADULT CARDIO PULMONARY RESUSCITATION

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Abstract

The study was aimed to evaluate the effect of skill training programme on knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation in selected panchayats of Kozhikode District. The study was conducted at MCH Unit Cheruppa, PHC Peruvayal and PHC Perumanna from 25.01.2020 to 22.02.2020 among 54 ASHA workers of Mavoor, Perumanna and Peruvayal panchayats. The objectives of the study were to assess the knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation, to evaluate the effect of skill training programme on knowledge and skill and to find out the association of knowledge and skill of ASHA workers with selected socio personal variables. The study was based on Modified Stuffle Beam's CIPP model. The research design selected for this study was pre experimental one group pre test post design. Fifty four ASHA workers in the above mentioned settings who met the inclusion criteria were selected for the study. The tools used were a questionnaire and a checklist to assess the knowledge and skill respectively. The study variables were measured prior to the skill training programme and the intervention was given. Two weeks after the intervention, the critical study variables were reassessed with the same tool and mannequin. Among the 54 participants, three were absent during the post test. The data collected from the 51 participants were analysed using descriptive and inferential statistics. The findings of the study showed that 68.6 % of participants had average knowledge and all of them had poor skill on adult cardio pulmonary resuscitation before the intervention. 70.6% of participants were obtained excellent knowledge and 72.5% obtained good skill on adult cardio pulmonary resuscitation after the skill training programme. The result showed a significant improvement in the subjects in terms of knowledge ($t = 19.48$, $df = 50$, $p < 0.001$) and skill ($t = 47.04$, $df = 50$, $p < 0.001$) of adult cardiopulmonary resuscitation. The study concluded that the skill training programme was an effective method to improve the knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation.

Key words: skill training programme; knowledge; skill; ASHA workers; adult cardio pulmonary resuscitation.

Introduction

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 the family, whereas when a person dies we are in sorrow because he passed from us. Death can occur at any time due to any cause. But death can be prevented, for instance; death due to cardiac arrest can be prevented by cardio pulmonary resuscitation in time. Cardio pulmonary resuscitation is a technique used in cardiac arrest to establish heart and lung function until more advanced life support is available¹

Cardiovascular disease is a leading cause of global mortality, accounting for almost 17 million deaths annually, which is 31% of global mortality. In developing countries, it causes twice as many deaths as human immunodeficiency virus, malaria and tuberculosis combined. It is estimated that 40-50% of all cardiovascular deaths are sudden cardiac arrest deaths and about 80% of these are caused by ventricular tachy arrhythmias. Sudden cardiac arrest remains a major public health problem.²

About 1.15 lakh people die due to cardiac arrest every day in the world. The mortality was increasing due to lack of awareness on cardio pulmonary resuscitation (CPR) About 1.15 lakh people die due to cardiac arrest every day in the world. The mortality was increasing due to lack of awareness on cardio pulmonary resuscitation (CPR).³

A number of studies have confirmed that CPR can be lifesaving when provided by a well-trained person. In several large investigations, the prompt delivery of CPR has served as an important predictor of survival.⁴

As the ASHA workers are the basic health volunteers in the community, they are always there in contact with the people at grass root level. It would be helpful to equip them with the skill training programme on adult cardio pulmonary resuscitation, to improve their knowledge and skill and thereby save the life of people in the community with cardiac arrest.

Problem statement

A study to evaluate the effect of skill training programme on knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation in selected Panchayats of Kozhikode District.

Purpose of the study

Purpose of the study is to evaluate the effect of skill training programme on knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation.

Objectives

- Assess the knowledge on adult cardiopulmonary resuscitation among ASHA workers.
- Assess the skill on adult cardio pulmonary resuscitation among ASHA workers
- Evaluate the effect of skill training programme on knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation.
- Find out the association between the knowledge on adult cardio pulmonary resuscitation with selected sociopersonal variables.
- Find out the association between the skill on adult cardio pulmonary resuscitation with selected sociopersonal variables.

Operational definition

Effect refers to the accomplishment on bringing changes in knowledge and skill of ASHA workers on adult cardio pulmonary resuscitation as measured by knowledge questionnaire and performance checklist.

Skill training programme refers to a systematically planned teaching programme by means of lecture cum demonstration on adult cardio pulmonary resuscitation (CPR) - chest compression, mouth to mouth ventilation one rescuer method and application of automated external defibrillator (AED). It consists of two sessions. First one hour session for the lecture cum discussion on various aspects of adult cardio pulmonary resuscitation including anatomy and physiology of cardio pulmonary system, cardio respiratory arrest and steps of adult cardio pulmonary resuscitation. It is imparted with the LCD projector and power point slides. Next session is the demonstration of adult cardio pulmonary resuscitation with the help of mannequin and AED for 30 minutes. After these sessions there will be, detailed demonstration of adult cardio pulmonary resuscitation by three subgroups of six ASHA workers for 2 hours. Each group will get a chance to practice and to clear their doubts. Return demonstration will be there by each ASHA worker with the same mannequin and AED.

Knowledge refers to the awareness of ASHA workers about anatomy and physiology of cardio pulmonary system, cardio respiratory arrest, adult cardio pulmonary resuscitation as measured by a questionnaire.

Skill refers to the ability of performing adult cardio pulmonary resuscitation in terms of assessing the victim and activating emergency response, performing high quality chest compressions, performing effective mouth to mouth ventilation and application of Automated External Defibrillator (AED), as measured by a checklist.

Adult Cardio Pulmonary Resuscitation (CPR) refers to providing chest compression, mouth to mouth ventilation, application of automated external defibrillator on any victim who attained puberty – Identified by hair growth on underarm of boys and developed breast in girls- who is in cardiac arrest.

Socio personal variables refers to age

, religion, marital status, type of family, socio economic status of family, educational qualification, area of work and years of experience, as measured by questionnaire.

ASHA worker refers to Accredited Social Health Activist (ASHA) are the female community health workers of Mavoor, Perumanna and Peruvayal panchayats.

Hypotheses

H1: There is significant difference in the mean pre-test and post-test knowledge scores of ASHA workers on adult cardio pulmonary resuscitation

H2: There is significant difference in the mean pre-test and post-test skill scores of ASHA workers on adult cardio pulmonary resuscitation

H3: There is significant association between knowledge score and selected socio personal variables.

H4: There is significant association between the skill score and selected socio personal variables.

Conceptual Framework

This study is based on modified Stufflebeam's evaluation model of planned programme

Methodology

The research design selected for the study was pre experimental one group pre test post test design. The sample of this study comprised of randomly selected 54 sample.

Tools and technique Tools

Tool I: Knowledge questionnaire Tool II: Performance checklist **Reliability**

Reliability was assured using Cronbach's alpha for questionnaire (0.77) and interrater correlation for checklist (0.93).

The technique

Self report and observation

Ethical consideration

Obtained approval from Institutional Ethics Committee of Government Nursing College, Kozhikode and administrative sanction from Medical officer of Kunnamangalam FHC, Perumanna PHC, Peruvayal PHC and administrative Officer of MCH Unit Cheruppa. The investigator had undergone certified training in Basic Life Support (CPR and AED) programme instruction.

The data collection process began with the identification of subjects. Subjects were selected from Mavoor, Perumanna and Peruvayal panchayats, based on inclusion and exclusion criteria on 20.01.20. Panchayats were selected by convenience sampling method and the sample were selected based on random sampling using lottery method. After explaining the purpose and nature of study to the subjects through direct communication, informed consent had taken from subjects. Subjects have assured the full freedom to quit the study throughout. Socio personal data and knowledge were assessed by using a questionnaire and skill on adult cardio pulmonary resuscitation was assessed by using a checklist. Pre test at MCH Unit Cheruppa was conducted on 25.01.2020, 18 ASHA workers had gathered in the seminar hall. Each ASHA worker's pre test skill in performing adult cardio pulmonary resuscitation was assessed on a mannequin and AED with a checklist, in a separate room. Total 30 minutes was taken for that. Then conducted a pre test to assess the existing knowledge on adult CPR with a questionnaire, 30 minutes was given for this. After that skill training programme was conducted. Training programme included the lecture cum demonstration on adult cardio pulmonary resuscitation (CPR) - chest compression, mouth to mouth ventilation one rescuer method and application of automated external defibrillator (AED). There were two sessions. First one hour session for the lecture cum discussion on various aspects of adult cardio pulmonary resuscitation including anatomy and physiology of cardio pulmonary system, cardio respiratory arrest and steps of adult cardio pulmonary resuscitation. It was imparted with the LCD projector and powerpoint slides. Next session was the demonstration of adult cardio pulmonary resuscitation with the help of mannequin and AED for 30 minutes. They were given a tea break followed by this. After these sessions there was, detailed

demonstration of adult cardio pulmonary resuscitation by three subgroups of six ASHA workers for 2 hours. Each group got a chance to practice and to clear their doubts. After lunch break, return demonstration was done by each ASHA worker. In the same process, pre test were conducted with 18 ASHA workers at both PHC Perumanna and PHC Peruvayal from 9am to 4pm on 27.01.2020 and 28.01.2020 respectively. Change in knowledge and skill of ASHA workers were reassessed after two weeks at MCH Unit Cheruppa, PHC Perumanna and PHC Peruvayal on 13.02.2020, 14.02.2020, 15.02.2020 and 22.02.2020 from 9am to 12pm respectively. During post test, the change in skill on adult CPR was assessed first with checklist as in pre test. Total one and half hours taken for this. After that change in knowledge on adult CPR was assessed by using same questionnaire. As in pre test, only 30 minutes was given for this. Total 51 ASHA workers were present at the time of post test, 3 were absent as compared to pre test.

Analysis and Findings

Section I. Socio personal variables

Among the participants 49% were belong to 46-50 years of age. Majority of participants 80.4% were belong to Hindu religion and 92.2% of them were married. Majority (78.4%) of the participants were belong to nuclear family. Among the participants 51% were having high school education. Among the participants 56.9 % were having 11– 15 years of work experience, and all of them (100%) are working in rural area. Among the participants, 37.3% were belong to lower middle class family and 29.4% of participants belong to upper middle class family.

Section II: Knowledge of participants on adult cardio pulmonary resuscitation before and after skill training programme

Among the participants 68.4% had average knowledge, 21.6% had good knowledge and 10% had poor knowledge on adult cardio pulmonary resuscitation before skill training programme. The post test score indicates that majority of the participants (70.6%) obtained excellent knowledge and 29.4% obtained good knowledge on adult cardio pulmonary resuscitation.

Section III: Skill of participants on adult cardio pulmonary resuscitation before and after skill training programme

All the participants (100%) had poor skill on adult CPR before skill training programme. The post test score indicates that majority of them (72.54%) obtained good skill after skill training programme and 27.45% obtained average skill on adult CPR.

Section IV: Effect of skill training programme on knowledge of adult cardiopulmonary resuscitation.

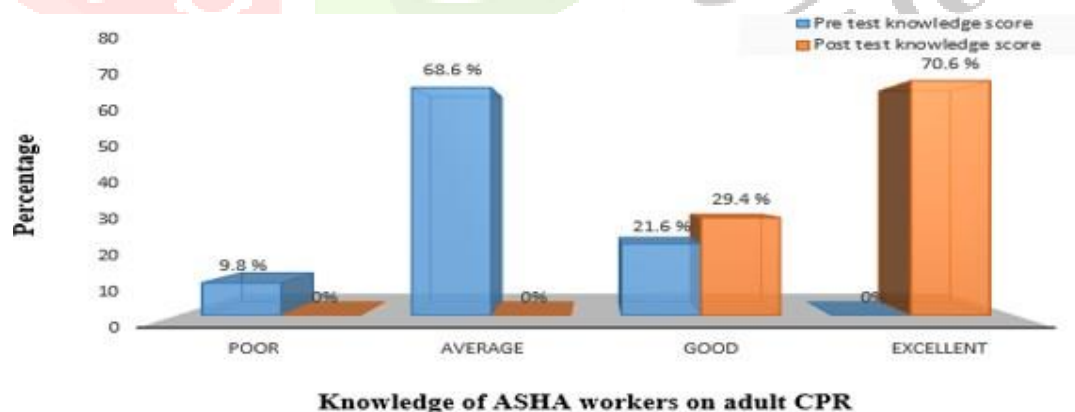


Figure 1: Distribution of participants based on level of knowledge on adult cardio pulmonary resuscitation before and after skill training programme.

Figure 1 depicts that 68.6 % of participants had average, 21.6% had good and 9.8% had poor knowledge on adult cardio pulmonary resuscitation before skill training programme. The post test score indicates that 70.6 % of participants obtained excellent knowledge and 29.4% obtained good knowledge after skill training programme.

There was statistically significant difference between pre test and post test mean knowledge score before and after intervention ($t = 19.48$) ($df = 50$), $p < 0.001$. Hence the null hypothesis was rejected and research hypothesis was accepted. It was concluded that the skill training programme was effective in improving the knowledge on adult cardio pulmonary resuscitation among ASHA workers.

Section V: Effect of skill training programme on skill of adult cardio pulmonary resuscitation

All the participants had poor skill on adult CPR before skill training programme and majority of them (72.5 %) obtained good skill and 27.5% obtained average skill on adult CPR after skill training programme.

Table 1

Significance of difference in the mean skill scores of ASHA workers on adult cardiopulmonary resuscitation before and after skill training programme.

(n=51)

Skill score	Mean	S.D.	Paired 't' value	p-value
Before intervention	2.10	0.83	47.04	0.000**
After intervention	16.98	2.19		

** Significant at 0.001 level

Table 1 depicts that there was statistically significant difference between the mean pre test and post test skill scores of ASHA workers on adult cardio pulmonary resuscitation ($t = 47.04$) ($df = 50$), $p < 0.001$. Hence the null hypothesis was rejected and research hypothesis was accepted. It is inferred that the skill training programme was effective in improving the skill of ASHA workers on adult cardio pulmonary resuscitation

Section VI: Association of knowledge on adult cardio pulmonary resuscitation with selected socio personal variables**Table 2**

Association between knowledge of ASHA workers on adult cardio pulmonary resuscitation with selected socio personal variables.

(n=51)

Characteristics	χ^2 value	df	p-value
Age	6.47	8	0.56
Religion	9.51	4	0.05
Marital status	2.96	4	0.57
Type of family	2.08	4	0.72
Socio economic status	5.53	8	0.69
Educational qualification	1.50	4	0.83
Years of experience	8.39	2	0.02*

*Significant at 0.05 level

Table 2 depicts that there was no statistically significant association between the knowledge of ASHA workers on adult CPR and the selected socio personal variables like age, religion, marital status, type of family, socio economic status of family, and educational qualification. Computed chi square value suggest a p-value greater than 0.05. Hence the null hypothesis was accepted for these variables. There was statistically significant association between knowledge and years of experience of ASHA workers as the computed $\chi^2 (2) = 8.39$, $p < 0.05$ level. Hence the null hypothesis was rejected for this variable.

There was 33.3% of ASHA workers with 6-10 years of experience having average knowledge score before intervention, 9.8% were having poor and 1.96% of them were having good knowledge score. Among the ASHA workers who were having 11-15 years of experience, 35.29% were having average knowledge score and 19.61% were having good knowledge score before the intervention. It depicts that ASHA workers with increased years of experience were having high knowledge score before the intervention

Section VII: Association of skill on adult cardio pulmonary resuscitation with selected socio personal variables

Table 3

Association between skill of ASHA workers on adult cardio pulmonary resuscitation with selected socio personal variables

(n=51)		
Characteristics	ANOVA	p-value
	F-value	
Age	1.31	0.28
Religion	0.59	0.55
Marital status	0.61	0.55
Type of family	0.16	0.85
Socio economic status	2.36	0.07
Educational qualification	2.85	0.03*
Years of experience	2.04	0.16

*Significant at 0.05 level

Table 3 depicts that there was no statistically significant association between the skill and the selected socio personal variables like age, religion, marital status, type of family, socio economic status of family, and years of experience. Computed one way-ANOVA F-value suggest a p-value greater than 0.05. Hence the null hypothesis was accepted for these variables. There was statistically significant association between ASHA workers skill on adult CPR and their educational qualification, as the computed F-value = 2.85, $p < 0.05$ level. Hence the null hypothesis was rejected for this variable.

The participants with higher secondary education were having higher skill score on adult CPR compared to those who were with high school education, before the skill training programme on adult CPR. It depicts that ASHA workers with higher educational qualification were having high skill score on adult CPR before the intervention.

Discussion

The findings of the present study were discussed in relation to the observations made by the other studies which the investigator reviewed. The present study revealed that skill training programme is effective in improving the knowledge and skill of ASHA workers on adult CPR. The present study findings are consistent with findings of other studies the investigator reviewed.

In the present study, 68.6 % of ASHA workers had average knowledge and all of them had poor skill on adult CPR before the intervention. 70.6 % of participants obtained excellent knowledge and 72.5% obtained good skill on adult CPR after the skill training programme. The result showed a significant improvement in the subjects in terms of knowledge; ($t = 19.48$, $df = 50$, $p < 0.001$) and skill ($t = 47.04$, $df = 50$, $p < 0.001$) of adult CPR. Meanwhile, in a pre experimental study conducted to evaluate the effect of skill training programme on hands only CPR among students found that all of them had poor skill and 68% had good knowledge on hands only CPR before the intervention, 98% of them had good knowledge and 88% of subjects had good skill on hands only CPR after the skill training programme. The result showed a significant improvement in the subjects in terms of knowledge; ($t = 12.51$, $p < 0.001$) and skill ($t = 42.03$, $p < 0.001$) of hands only CPR. The study concluded that skill training programme was an effective method to improve the knowledge and skill of hands only CPR among students.⁵

Conclusion

The findings of the research study showed that skill training programme is effective in improving the knowledge and skill of ASHA workers on adult CPR. The nurse can incorporate the CPR skills as one of the best first aid measure for the management of cardiac arrest victims.

Conflict of interest- Nil

References

1. Sandra M. Nettina. The Lippincott manual of nursing practice. 7th ed, Philadelphia: Lippincott Williams & Wilkins, 2001: 1065-67.
2. Aziz E F, Javed F, Prathap B et al. Strategies for prevention and treatment of sudden cardiac death. Open Access Emergency Medicine. 2010; 2: 99-114 available at www.ncbi.nlm.nih.gov/pmc/articles/PMC3219585.
3. The Hindu. Staff reporter. About 1.15 lakh people die due to cardiac arrest every day in the world. Vijayawada: April 07, 2013 12:13 IST updated: April 07, 2013 12:13 IST.
4. Shiraki T, Osawa K, Suzuki H et al. Incidence and outcomes of out of hospital cardiac arrest in the eastern part of Yamaguchi prefecture. International Heart Journal. 2009; 54: 489- 500.
5. V R Aswathi. Effect of skill training programme on hands only CPR among students. 2019.