

Effectiveness of Demonstration Regarding Knowledge and Skill on Cardio-Pulmonary Resuscitation among Housekeeping Staff in Tertiary Care Hospital

Amit M. Nikam¹, Mahadeo B. Shinde²

¹Student, Krishna Institute of Nursing Sciences, Karad 415110, India

²Professor, Department of Medical Surgical Nursing, KINS, Karad 415110, India

Abstract: Heart attack is the leading cause of deaths in the India. CPR can be life-saving first aid and increases the person's chances of survival if started soon after the heart has stopped beating. This study aimed to improve knowledge and skills regarding cardiopulmonary resuscitation among housekeeping staff working in tertiary care hospital. **Objectives:** To assess the knowledge regarding skill of cardio-pulmonary resuscitation among housekeeping staff. To determine the effectiveness of demonstration regarding knowledge & skill on cardio-pulmonary resuscitation among housekeeping staff. To correlate knowledge with skill of cardio-pulmonary resuscitation among housekeeping staff. **Methodology:** 80 Housekeeping Staff were selected by Non-Probability Purposive sampling technique from tertiary care hospital. One group Pre-test Post test design was used. Self structured knowledge questionnaire was used. Data was analyzed by using instat software 3.06 Version. **Results:** In majority of the samples 37 (46.25 %) belong to age group of 31 to 40 years. In terms of gender, 46 (57.5%) subjects were Males. Educational status of the subjects 42 (52.5%) are Secondary, where as 58 (72.5%) had previous knowledge about cardiopulmonary resuscitation the Majority of source of information was Mass Media 22 (27.5%) in the study population. The mean post test knowledge score 15.025 (SD=2.877) of housekeeping staff was significantly higher than their pre test knowledge score 10.925 (SD=2.755). The calculated paired t value 14.647 is greater than table value (t=1.664) at 0.05 level of significance. There is positive correlation of knowledge with skill when compared pre-test to post test (pre-test $r = 0.4091$, $p=0.0002$) and (post-test $r = 0.7563$, $P= <0.0001$). **Conclusion:** The study concluded that the demonstration regarding cardio-pulmonary resuscitation was effective in improving the knowledge and skills regarding cardio-pulmonary resuscitation among housekeeping staff.

Keywords: Knowledge, Demonstration, Cardiopulmonary Resuscitation, Housekeeping Staff, Tertiary Care Hospital

1. Introduction

Cardiac arrest occurs when the heart ceases to produce an effective pulse and circulate blood [1]¹. Cardiac arrest is the leading cause of deaths in India. As per the statistics, one-fifth of the deaths in India are from Coronary Heart Disease. By the year 2020, it will account for one-third of all the deaths in the country [2]². As per World Health Organization census statistics mortality due to cardiac causes has crossed mortality due to all cancers together. Approximately 4280 out of every one lakh people die every year from Sudden Cardiac Arrest in India alone [3]³.

According to article dated in zee news [4]⁴ Cardiac arrest is the number one killer in India, with the increasing lifestyle pressures in today's generation, the incidence of cardiac arrest is rising. An increasing number of people living in urban area and the younger generation are becoming victims for cardiac death, Cardiac arrest takes an approximately 25 lakh lives yearly.

2. Literature Review

There are many purposes for reviewing the literature before conducting a research study: [5] The most important one is to determine what is already known about the topic that you wish to study. Research is ongoing process that builds on

previous knowledge. It also serves as basis in clarification and formulation of problem. It makes researcher know what research has been done in particular areas, thus, avoids duplication. The review of literature is necessary to narrow the problem to be studied. It helps researcher to get acquainted to relevant theory, research strategy, and specific procedure tools, instruments that may be helpful in conducting the research. The researcher can capitalize on the success as well as the errors of other investigators. [5]

Learning is the addition of new knowledge and experience interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [6] [10]. The planned teaching programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers regarding non-curative care of terminally ill cancer patients [7]. The structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [8]. Another Study concluded that

the structured education program on knowledge is effective as a teaching strategy [9].

Cardiopulmonary resuscitation (CPR) is a combination of techniques, including chest compressions, designed to pump the heart to get blood circulating and deliver oxygen to the brain until definitive treatment can stimulate the heart to start working again. CPR is a life-saving first aid and increases the person's chances of survival if initiated soon after the heart has stopped beating. If no CPR is performed, it needs only three to four minutes for the person to become brain dead due to a lack of oxygen [11].

Resuscitation can mean the difference between life and death and early intervention with Cardio Pulmonary Resuscitation (CPR) can and will save lives. By learning about cardiopulmonary resuscitation, you could save someone's life [12].

According to Response Institute due to the serious operations sometimes performed at dental offices, dentists and dental assistants have CPR requirements. Nursing home employees, daycare staff, lifeguards, babysitters, flight attendants, prison personnel and general office staff at doctors' offices may be required to obtain CPR certifications depending on particular job duties and company policies [13].

3. Problem Statement

"Effectiveness of demonstration regarding knowledge and skill on cardio-pulmonary resuscitation among housekeeping staff in selected tertiary care hospital Karad."

4. Objectives

- 1) To assess the knowledge regarding skill of cardio-pulmonary resuscitation among housekeeping staff in selected tertiary care hospital Karad.
- 2) To determine the effectiveness of demonstration regarding knowledge & skill on cardio-pulmonary resuscitation among housekeeping staff in selected tertiary care hospital Karad.
- 3) To correlate knowledge with skill of cardio-pulmonary resuscitation among housekeeping staff in selected tertiary care hospital Karad.

Assumption

Demonstration will help to improve knowledge and skill regarding cardio-pulmonary resuscitation among housekeeping staff.

Hypothesis:

H₀ - There will be no significant difference between knowledge & skill regarding cardio-pulmonary resuscitation before & after demonstration.

H₁ - There will be significant difference between knowledge & skill regarding cardio-pulmonary resuscitation before & after demonstration.

5. Materials & Methods

The research design adopted for the study was One group Pre-test Post test design with evaluative approach. Study was carried out in Krishna hospital and Medical Research center, Karad which is NABH accredited. Non-probability Convenient sampling technique was used to select 80 samples.

Description of the Tool:

Section I: Socio-demographic variables.

Section II: Part A: Questionnaire on knowledge of General Concept of Cardio-Pulmonary Resuscitation.

Part B: Questionnaire on Knowledge of Procedure of Cardio-Pulmonary Resuscitation.

Section III: An observational checklist regarding skills of Cardio-Pulmonary Resuscitation consisting 25 steps. Each correct step carried '1' score & the missing step carried '0' score.

Ethical Clearance

The study was approved by the Institutional Ethical Committee of the Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, before the commencement of study. Formal permission to conduct the study was obtained from Principal, Krishna Institute of Nursing Sciences, Karad, Medical Director as well as sanitary department Krishna Hospital and Medical Research Centre Karad.

Organization & Presentation of data:

The collected data is tabulated, analyzed, organized and presented under the following headings.

Section I: It deals with the analysis of demographic data of the samples.

Section II: Part A: Consisted questionnaire on knowledge of General Concept of Cardio-Pulmonary Resuscitation.

Part B: Consisted questionnaire on knowledge of Procedure of Cardio-Pulmonary Resuscitation.

Section III: It deals with analysis of skills of Cardio-Pulmonary Resuscitation among housekeeping staff.

Section IV: It deals with analysis of correlation of knowledge with skill of cardiopulmonary resuscitation.

Section I

Table 1: Distribution of subjects according to socio-demographic variables, **N=80**

Sr. No.	Socio-Demographic Variables	Frequency (F)	Percentage %
1	Age in years		
	a) 20-30	29	36.25
	b) 31-40	37	46.25
	c) 41-50	11	13.75
2	d) 51 & above	0	3.75
	Gender		
	a) Male	46	57.5
3	b) Female	34	42.5
	Education		
	a) No formal education	3	3.75
	b) Primary	18	22.5
	c) Secondary	42	52.5
	d) Higher secondary	11	13.75

	e) Graduate	6	7.5
4	Previous knowledge		
	a) Yes	58	72.5
	b) No	22	27.5
5	Source of Information		
	a) Mass Media	22	27.5
	b) Newspaper	9	11
	c) Television	7	9
	d) Other	20	25
	e) Not attempted	22	27.5

The data presented in Table No. 1 indicates that majority of the samples 37 (46.25%) belong to age group of 31 to 40 years. In terms of gender, 46 (57.5%) subjects were Males. Educational status of the subjects 42 (52.5%) are Secondary, where as 58 (72.5%) had previous knowledge about cardiopulmonary resuscitation the Majority of source of information was Mass Media 22 (27.5%) in the population.

Section II

Table No. 2: Distribution of subjects according to Mean, Median, Mode, SD, and Range of pre and post test effectiveness of demonstration regarding cardio-pulmonary resuscitation knowledge among housekeeping staff in selected tertiary care hospital Karad.

Table 2: Depicts that the pre test knowledge regarding cardio-pulmonary resuscitation knowledge mean (10.925.) & median (11) whereas in post test mean (15.025) & median (15)

Area of analysis	Mean	Median	Mode	S.D	Min – Max
Pre test.	10.925	11	11	2.755	3-11
Post test	15.025	15	15	2.877	7-21

Section III

It deals with section wise analysis of skills of Cardio-Pulmonary Resuscitation among housekeeping staff

Table 3: Distribution of subject on skill of cardiopulmonary resuscitation

Section wise skill Score	Frequency	Percentage
ASSESSMENT		
Best	67	83.75
Poor	13	16.25
CIRCULATION		
Best	49	61.25
Poor	31	38.75
AIRWAY		
Best	21	26.25
Poor	59	73.75
BREATHING		
Best	40	50
Poor	40	50

Table No. 3 depicts that the majority of housekeeping staff demonstrated in Assessment section 67 (83.75%) best skill and 13 (16.25%) were poor, then in Circulation section majority of 49 (61.25%) were best and 31 (38.75%) were poor, Airway section goes with 59 (73.75%) were poor and 21 (26.25%) were best, the last Breathing section had 40 (50%) best and poor skills regarding cardiopulmonary resuscitation.

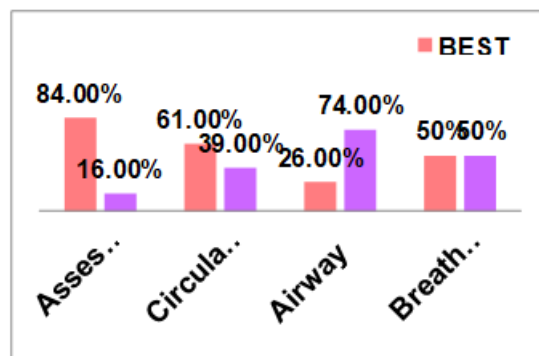


Figure 1: Graph showing area wise distribution of subjects according to section wise analysis of skills of Cardio-Pulmonary Resuscitation among housekeeping staff.

Section IV

Table 4: It deals with analysis of correlation of knowledge with skill of cardiopulmonary resuscitation among housekeeping staff.

Pretest Knowledge with skill score	r value = 0.4091
	P value = 0.0002
Post test Knowledge with skill score	r value = 0.7563
	P value = <0.0001

Table No. 4 depicts that there is positive correlation of knowledge with skill of cardiopulmonary resuscitation among housekeeping staff (pre test $r = 0.4091$ $p = 0.0002$) and (post test $r = 0.7563$, $P = <0.0001$) considered extremely significant.

6. Major Findings & Discussion

- Out of 80 respondents, majority of the samples 37 (46.25%) belong to age group of 31 to 40 years. In terms of gender, 46 (57.5%) subjects were Males. Educational status of the subjects 423 (52.5%) are Secondary, where as 58 (72.5%) had previous knowledge about cardiopulmonary resuscitation the majority of source of information was Mass Media 22 (27.5%) in the population.
- There was significant increase in mean knowledge (mean pre 10.925 SD=2.755 to mean post 15.025 SD=2.877) on knowledge regarding cardio-pulmonary resuscitation among housekeeping staff working in tertiary care hospital.
- The calculated paired t value 14.647 at 0.05 level of significance that proved effectiveness of demonstration regarding knowledge and skills of cardio-pulmonary resuscitation among housekeeping staff.
- There is more positive correlation of knowledge with skill when compared pre-test to post test knowledge score with skill (pretest $r = 0.4091$ $p = 0.0002$) and (post-test $r = 0.7563$, $P = <0.0001$).

The demographic variables were supported by Shrestha Roshana [14] (2012) showed findings as socio demographic characteristics Of 121 responders, 27 were clinical faculty members, 21 faculty members of dental and basic sciences, 29 house officers, and 44 nurses and health assistants. The age of the participants (n=116) ranged from 18 to 61 years

(mean of 30±8 years). Among all the participants, 68 (56%) were male and 53 (44%) were female. A larger proportion of females comprised nurses/HA group (36 of 44) and dental / basic sciences faculty members (13 of 21).

The knowledge regarding cardiopulmonary resuscitation findings were supported by A cross-sectional study by Harshal Gajanan Mendhe & et al [15] (2017) among all the participants 50 were medical interns (50%) and 50 were nursing interns (50%). Study revealed that 36% of MBBS interns and 46% of nursing interns had poor knowledge score.

Also the effectiveness of demonstration goes with similar findings as Prafulla & et al [16]. The data shows that knowledge score, majority 90% subjects had average, 08% subjects had poor and 2% had good knowledge score regarding cardiopulmonary resuscitation before demonstration of CPR and majority, i.e. 86% of subjects had good knowledge score and 14% subjects had moderate knowledge score after teaching and demonstration of CPR. The tabulated 't' value for n-1=49 degrees of freedom was 2.00. The calculated value was 20.600 for knowledge. The calculated 't' value was much higher than the tabulated values at 0.05 level of significance, so null hypothesis (H₀) was rejected.

The skills assessed in this study goes with similar findings of Joshua N. Burkhardt [17]. Findings revealed that knowledge, 94% of participants correctly identified parameters for rate, 58% for hand placement, 74% for depth, and 94% for recoil. Participants identifying an effective rate of ≥100 performed compressions at a significantly higher rate than participants identifying <100 ($\mu=117$ vs. 94, $p<0.001$).

When the knowledge is correlated with skill it shows similarity with study conducted by Gyung Park [18]. These findings revealed that the CPR-related attitude and self-efficacy ($r=.263$ $p=.008$) of participants prior to CPR training revealed a weak correlation, and after training there was a moderate correlation in CPR-related attitude and self-efficacy ($r=.572$ $p<.001$).

7. Scope of Study

This study can make health care team more efficient with CPR technique. Also it can provide basis to conduct periodical training programme for housekeeping staff. This study can form basis for initiating training program for various professionals.

8. Limitations

- The results of the study could not be generalized as the study was conducted in smaller version limiting to Karad Taluka.
- The study was limited to subjects in Karad Taluka
- The data was collected only from those who were present in the study and who are willing to participate in the study.

9. Recommendations

- A large-scale study can be carried out to generalize the findings.
- A comparative study can be conducted on knowledge and skills of nurses in government and private hospitals.
- A similar study can be conducted by using the STP for educating the paramedical professionals and even special groups like people working in industries, transports etc.
- This study can also be conducted on all the people based on the interest who can save the life.

10. Conclusion

The study reveals a positive correlation of knowledge with skills and shows that both are proportional to each other. The housekeeping staff was considered a member of health care team member working in hospital setting. Demonstration proved to be effective in improving knowledge and skills regarding cardiopulmonary resuscitation among house keeping staff.

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Author Profile



Mr Amit Nikam, P. G. Student, Kristna Institute of Nursing Sciences Karad



Dr. M. B. Shinde, Professor, Kristna Institute of Nursing Sciences Karad