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Research Article

Effect of basic life support training programme on knowledge and practice among administrative employees of health institutes, Navi Mumbai

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Abstract

Background: Basic Life Support (BLS) competency is considered a fundamental skill not only for health care workers but also for other non-medical personnel such as administrative employees. Administrative employees are the people who are working for 24 hours in the hospital along with healthcare professionals. Patients who are visiting hospitals first come to the inquiry desk for inquiry and meet the non-medical personnel, such as administrative staffs; In case any person falls there with cardiac arrest the administrative staff should have some knowledge and practice regarding BLS to save the life of that person before the medical team arrives. **Aim:** The objectives of the study are to assess the knowledge regarding Basic Life Support among administrative employees before and after the training programme and to assess the practice regarding Basic Life Support among administrative employees before and after the training programme. **Materials and methods:** Quantitative research approach and quasi-experimental one group pre-test post design was used. The non probability convenient sampling method was used to select 60 administrative employees as a study subject. **Results and conclusion:** The mean knowledge score of subjects in pre-test was 4.90 and in post-test was 9.78 and overall mean practice score of subjects in pre-test was 3 and in post-test 16.15. There is no significant association between pre-test knowledge and practice score in relation to BLS and selected aspects of socio-demographic variables. Equal positive response to the demonstration and teaching was found really useful to administrative employees who will help them to take prompt decisions, perform cardiopulmonary resuscitation and save many lives of cardiac arrest victims.

Keyword: Effect, Training programme, Knowledge, Practice, Basic Life Support, Administrative Employees.

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1. Introduction

Basic Life Support (BLS) refers to the service healthcare providers and public safety professionals provide to patients who are experiencing respiratory arrest, cardiac arrest or airway obstruction. BLS includes psychomotor skills for performing high-quality cardiopulmonary resuscitation (CPR), using an automated external defibrillator (AED) and relieving an obstructed airway for patients of all ages [1].

Basic Life Support (BLS) is the provision of treatment designed to maintain adequate circulation and ventilation to the patient in cardiac arrest, without the use of drugs or specialist equipment. Basic Life Support (BLS) includes recognition of signs of sudden cardiac arrest (SCA), heart attack, stroke, and foreign-body airway obstruction (FBAO); and cardiopulmonary resuscitation (CPR) [2].

About 92% cardiac arrest victims die before reaching the hospital, but statistics prove that if more people knew CPR, more lives could be saved. Immediate CPR can double or even triple a victim's chance of survival [3]. Today basic CPR not only includes the traditional skills of chest compressions and rescue ventilation but also, when indicated, rapid on-scene defibrillation through the availability and use of an automated external defibrillator (AED). The main issue, however, is how to better facilitate and ensure that all potential rescuers will be trained and ready to perform these life-saving actions [4].

Tim Piepho, et.al [6] (2011) conducted a study on Lay basic life support: the current situation in a medium-sized German town. The study investigates BLS skill

and knowledge of German laypersons in a public community place and examines the effect of the interval between the last BLS course and present skills in cardiopulmonary resuscitation (CPR). It was verified that Lay persons who attended a BLS course more than 10 years ago showed a significant lack of BLS knowledge and failed more often to deliver chest compressions and rescue breathing. The study demonstrates that current CPR guidelines for BLS are not followed by lay persons in a medium-sized town in Germany. These data suggest that CPR refresher courses, as well as implication of BLS guidelines in daily life, are warranted.

Need for the study

We should keep in mind that CPR's main objective is to promote an artificial circulation of oxygen throughout the body, especially the brain and heart, until the spontaneous return of all vital functions [5].

The study conducted by The International Liaison Committee on Resuscitation (ILCOR) recommends that strategies should be implemented that promote cardiopulmonary resuscitation (CPR) training in the workplace. Sim M S [10] (2009) conducted a study on Non-medical employees at a hospital who were trained to conduct basic life support (BLS). Subject background information, test results and survey findings were examined and factors affecting BLS skill acquisition were studied. According to total checklist scores, subjects achieved a mean (SD) score of 8.66 (3.57). 22.3% performed all 13 skills. Based on 5-point overall competency ratings, 43.7% of subjects were rated as "competent", "very good" or "outstanding". Age (<40 years and ⩾40 years) was the only factor that significantly affected skill acquisition (skill acquisition by those ⩾40 years of age was poorer than by those aged <40 years). It was verified that Traditional BLS training is less effective in individuals aged ⩾40 years.

Administrative employees are the people who are working for 24 hours in the hospital along with healthcare professionals. Patients who are visiting hospitals first come to the inquiry desk for inquiry and meet the non-medical personnel, such as administrative staffs; In case any person falls there with cardiac arrest the administrative staff should have some knowledge and practice regarding BLS to save the life of that person before the medical team arrives.

Taking into account the importance of such activity, the present study intended to check the knowledge and practice on BLS among administrative employees working in health institutes [11].

Statement of the problem

"Effect of Basic Life Support training programme on knowledge and practice among administrative employees of health institutes, Navi Mumbai."

Objectives of the study

- To assess the knowledge regarding Basic Life Support among administrative employees before and after the training programme
- To assess the practice regarding Basic Life Support among administrative employees before and after the training programme.

Assumptions

1) Administrative employees may have some knowledge regarding Basic Life Support
2) Knowledge may influence practice
3) Training programme may enhance knowledge and improve practice.

Hypothesis

H_{01}- There will be no significant difference in the knowledge regarding BLS among Administrative employees before and after training programme.

H_{02} – There will be no significant difference in the practice regarding BLS among Administrative employees before and after training programme.

2. Methodology

Research approach

A quantitative research approach.

Research design

Quasi-experimental one group pre-test post-test design was selected.

Variables

Independent variable-Training programme regarding Basic Life Support.

Dependent variable - Knowledge and Practice regarding Basic Life Support among administrative employees.

Setting

The study was conducted in selected hospital and educational institutes of Kamothe which include colleges of Nursing, Dental, and Physiotherapy.

Sample

Administrative employees.

Sampling technique

Non probability convenient sampling technique.

Sample size

60 administrative employees participated in the study.

Sampling criteria

Administrative employees who:

- are willing to participate

- are present at the time of data collection
- have a minimum educational qualification of 12th Standard

Tool
The tool used for this study was
1) Structured knowledge questionnaire
2) Observation checklist

Structured knowledge questionnaire contained 15 statements and observation checklist contained 20 statements. The scale was administered among the subjects before and after the training programme regarding Basic Life Support.

Description of the tool
The objective of the structured questionnaire was to assess the knowledge score of administrative employees on the following aspects.

Tool I – Structured knowledge questionnaire
Section A- Demographic data

Section B – Questionnaire. Structured multiple choice questionnaire was used.
Tool II- Observation checklist

It had 20 items with two responses i.e. yes and no. With every action performed, was given a score of one (1) and zero (0) for not performing the desired action.

Data collection process
Prior to data collection, the investigator took permission from the respective authorities and study subjects. The Investigator selected subjects who met the inclusion criteria. A pre-test in the form of questionnaire and observation check-list was administered. The investigator carried out a training programme with the help of CPR manikin on the same day as an intervention. The post-test was given on the eighth day using the same tool.

3. Results and discussion

1) Demographic data of the subjects

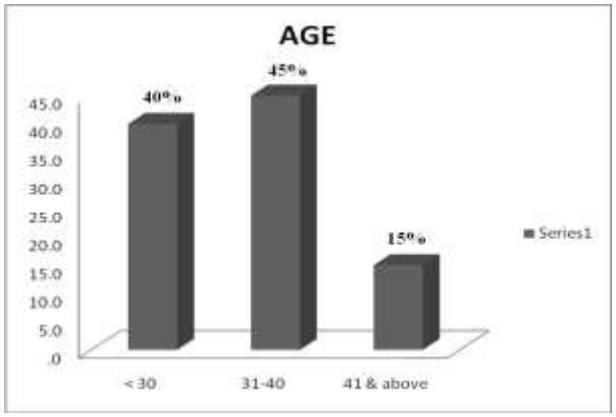

Figure No 1: Distribution of administrative employees based on Age

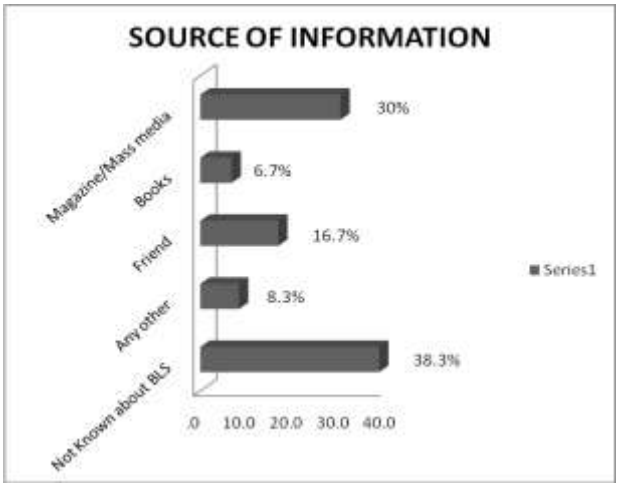

Figure No 2: Distribution of administrative employees based on Source of Information

2) Assessment of the knowledge and practice of subjects regarding BLS

Table No 2: Overall knowledge scores regarding Basic Life Support

n = 60

Knowledge	Pre-test		Post-test	
	f	%	F	%
Good	0	0	17	28.3
Average	21	35	42	70
Poor	39	65	1	1.7

Table 2 shows that 21 (35%) of the sample had an average knowledge and 39 (65%) had poor knowledge during pre-test while the majority of sample 42 (70%) had an average knowledge and 17 (28.3%) had good knowledge during post-test.

Table No 3: Overall practice scores regarding basic life support n = 60

Practice	Pre-test		Post-test	
	f	%	f	%
Good	0	0	56	93.3
Average	0	0	4	6.7
Poor	60	100	0	0

Table 3 depicts that out of 60 samples (100%) had a poor practice score on Basic Life Support in the pre-test and in the post-test majority of sample 56 (93.3%) had good practice score and 4 (6.7%) had an average score on Basic Life Support in the post-test.

3) Effectiveness of training programme on knowledge and practice of subjects regarding BLS

Table No 4: Distribution of Sample based on Significance of difference in pre-test & post-test mean knowledge scores regarding Basic Life Support among administrative employees before and after the Training programme n= 60

Knowledge	Mean	SD	Difference mean	Wilcoxon signed rank test	p-value	Level of significance
Pre-test	4.90	1.782				
			4.88	6.700	0.000	$p < 0.05$
Post-test	9.78	2.164				

The mean pre-test knowledge was 4.90 with a standard deviation of 1.782 whereas the post-test mean was 9.78 with a standard deviation of 2.164. Since the data does not follow a Normal distribution, a non-parametric equivalent of student t-test, Wilcoxon Signed Rank test was applied to find whether there is any significant difference between the Pre and Post Knowledge test. A p-value of 0.00(<0.05) indicates that there is the statistically significant difference between the Pre and Post-test in Knowledge. Hence, the null hypothesis H_0 is rejected and research hypothesis (H_1) is accepted. The educational intervention was found to be effective in improving the knowledge of study participants regarding Basic Life Support.

Table No 7: n=60

Item wise total Mean Score for Practice	Pre-test Mean	Post-test Mean
Assessment and Activation	2.50	3.77
Adult Compressions	0.30	3.23
Adult Breath	0.12	4.08
Automated External Defibrillator (AED)	0.05	4.13
Resume Compressions	0	0.92

Table No 5: n = 60

Practice	Mean	SD	Difference mean	Wilcoxon signed rank test	Level of significance
Pre-test	3.00	1.010			
			13.15	6.769	$p < 0.05$
Post-test	16.15	2.110			

p-value-0.000

The mean pretest practice was 3.00 with a standard deviation of 1.010 whereas the post-test mean was 16.15 with a standard deviation of 2.110. Since the data does not follow a Normal distribution, a non-parametric equivalent of student t-test, Wilcoxon Signed Rank test was applied to find whether there is any significant difference between the Pre and Post practice test. A p-value of 0.00(<0.05) indicates that there is the statistically significant difference between the Pre and Post-test in practice. Hence, the null hypothesis H_0 is rejected and research hypothesis (H_1) is accepted. The educational intervention was found to be effective in improving the practice of study participants regarding Basic Life Support.

4) Comparison of overall item wise mean scores on knowledge and practice

Table No 6: n=60

Item wise total Mean Score for Knowledge	Pre-test Mean	Post-test Mean
Assessment and Activation	1.33	2.68
Adult Compressions	1.20	2.35
Adult Breath	0.35	1.15
Automated External Defibrillator (AED)	1.53	3.17

5) An analysis of data related to association between selected variables and pre-test knowledge of subjects regarding BLS

Table No 8: n = 60

SN	Demographic Variable	Df	X^2 cal	X^2 tab	p-value
1	**Education**	2	0.216	5.99	0.897
a	12 & above				
b	Graduate				
c	Post Graduate				
2	**Working Department**	3	2.979	7.82	0.395
a	Hospital Employee				
b	Nursing College				
c	Dental College				
d	Physiotherapy College				

In order to find the relationship between knowledge and selected demographic variables, Chi-square test used. The study shows that there was no significant association between pre-test knowledge score in relation to education and working departments that is calculated value is 0.216 and 2.979 respectively.

Conclusion

During the study, it was observed that all the subjects were very conscious and interested to learn. The results of pre-test of the study revealed that there is a low level of knowledge and practice about BLS. In post-test there is a significant gain in knowledge and practice is seen. The results indicated that equal positive response to the training programme was found really useful to them.

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