

Effectiveness of Computer Assisted Teaching and Skill Development Program on Knowledge and Practice Regarding BLS among Staff Nurses Working in Selected Hospital, Amritsar, Punjab

Vijayalakshmi

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Abstract

Context: Many emergencies are there in the life of human being, among that Cardiac arrest being world's largest killer disease leads to death of around 17.3 million/year in India. Sudden Cardiac arrest needs to be managed with BLS. Nurses are having prime role in providing BLS and need to be trained.

Aim: The overall aim of the study is to assess and train the staff nurses on knowledge and practice skill regarding Basic Life support (BLS).

Setting and Design: Research design for study was pre-experimental one group pretest and posttest design.

Methods and Material: The samples of 30 staff nurses were selected to collect data by using purposive sampling technique. The tool used were demographic variables, structured knowledge Questionnaire regarding BLS, and checklist on BLS to evaluate practical skills.

Statistical analysis used: The collected data were tabulated, analyzed and interpreted by using descriptive and inferential method.

Results: The results showed that in pretest majority 73.3% of staff nurses have average knowledge, 26.7 % having poor knowledge and in posttest majority 80% had developed good knowledge only 20% had average knowledge. In practice skill, the pretest finding revealed that 56.7% staff nurses had good practice skill while most of the staff nurses 43.3% had poor practice skill whereas in the posttest all 100% had developed good practice skill regarding BLS.

Conclusion: Findings concluded that computer assisted teaching and skill development program were very effective in improving knowledge and skill regarding BLS among staff nurses.

Keywords: Knowledge; Practice; Basic life support; Computer assisted teaching; Skill development program.

Author's Affiliations: Principal, S.B.S Institute of Nursing, Amritsar 143601, Punjab, India.

Corresponding Author: Vijayalakshmi, Principal, S.B.S Institute of Nursing, Amritsar 143601, Punjab, India.

E-mail: Vijayal2006@gmail.com

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INTRODUCTION

Numerous emergencies cause immediate danger to life of people involved like Heart attacks, stroke, Cardiac arrest and trauma, Respiratory arrest, choking etc. Among these Cardiac arrest deaths remain major cause of mortality in the world (Nadkani UM, 2019).¹ One

Indian dies in every 29 seconds because of heart problems and around 25 thousand new cases develop every day. But not all the heart attacks causes' deaths of every four persons, they were saved and now only two lose their lives. Sudden Cardiac arrest needs to be managed by BLS which is an emergency medical procedure (*Medical news* 2020).² Training on BLS would increase staff nurses self-esteem related to BLS practice and contribute to anxiety management.

Problem Statement

A pre experimental study to assess the effectiveness of computer assisted teaching and skill development programme on knowledge and practice regarding BLS among staff nurses working in selected hospitals, Amritsar.

Objectives

1. To assess the pre-test knowledge and practice scores regarding BLS among staff nurses working in selected hospital, Amritsar.
2. To assess the post-test knowledge and practice scores regarding BLS among staff nurses working in hospital, Amritsar.
3. To compare the pre-test and post-test knowledge scores regarding BLS among staff nurses working in selected hospital, Amritsar.
4. To compare the pre-test and post-test practice scores regarding BLS among staff nurses.
5. To find out the association between pre-test knowledge and demographic variables regarding BLS among staff nurses working in selected hospital, Amritsar.
6. To find out the association between pre-test practice and demographic variables regarding BLS among staff nurses working in selected hospital, Amritsar.

Hypothesis

H_1 : There will be significant difference between pre-test and post-test knowledge scores regarding BLS.

H_2 : There will be significant difference between pre-test and post-test practice scores regarding BLS.

H_3 : There will be significant association between pre-test level of knowledge regarding BLS among staff nurses with their selected demographic variables.

H_4 : There will be significant association between

pre-test level of practice regarding BLS among staff nurses with their selected demographic variables.

MATERIALS AND METHODS

Research approach: Quantitative evaluative approach.

Research Design: Apre experimental Research design with one group pre-test and post-test design was used (*Suresh K Sharma*2021).³

Setting of the study: The study was conducted in Life Kare hospital, Amritsar.

Sample Size: 30 Staff Nurses.

Sampling Technique: Convenient sampling technique.

Description of tool:

The tool consists of 3 parts:

Part I: Socio demographic variables: It consist of 6 items for obtaining information from staff nurses such as age in years, gender, previous knowledge about BLS, qualification and experience in years.

Part II: Structured knowledge questionnaire on BLS is used to assess the level of knowledge among staff nurses. It consists of 24 items related to BLS.

Part III: Structured practice checklist on BLS is used to assess the level of practice among staff nurses. It consists of 10 items related to BLS.

Scoring criteria:

For each correct response 1 mark will be given

Knowledge Level	Score	Percentage
Poor knowledge	0 - 8	0-33%
Average knowledge	9 - 16	34-66%
Good knowledge	17 - 24	67-100%

Practice Level	Score	Percentage
Poor practice	0 - 5	1-50%
Good practice	6 - 10	51-100%

and 0 mark for incorrect answer.

Data collection procedure

Before proceeding with the study formal permission was taken from the medical director of selected hospital. The researcher gave necessary information about the study to subjects and

obtained consent from the participants. For the pre-test, questionnaire was given to the participants for knowledge assessment and observation checklist for practise skill evaluation. After that, computer assisted teaching and skill development programme was given to the participants following

which doubts were clarified. Then post-test was conducted to evaluate the knowledge and practice of all the participants by giving same structured knowledge questionnaire and observation checklist. Collected data were coded, tabulated and analysed by descriptive and inferential statistics.

Statistical Analysis

Data Analysis	Method	Purpose
Descriptive statistics	Frequency, Percentage, Mean, Standard deviation	To describe the demographic variables of staff nurses To assess the pre and post-test knowledge and practice regarding BLS.
Inferential statistics	Paired T test Chi-square test	To compare the pre and post-test knowledge and practice regarding BLS. To find the association between pre-test knowledge and practice regarding BLS among staff nurses with selected demographic variables.

RESULTS AND DISCUSSION

Table 1: Frequency and Percentage Distribution of Demographic Variables.

N=30		
Demographic Variables	Frequency (f)	Percentage (%)
<i>Age</i>		
21-25 years	19	63.3
26-30 years	8	26.7
31-35 years	3	10
<i>Qualification</i>		
ANM	6	20
GNM	13	43.3
B.Sc Nursing	11	36.7
<i>Previous knowledge on BLS</i>		
Yes	30	100
No	0	0
<i>If yes source of information</i>		
Books and journals	5	16.7
Friends and family	3	10
Health personnel	22	73.3
<i>Experience</i>		
0-2 years	14	46.6
2-4 years	11	36.7
> 5 years	5	16.7
<i>Any special training course taken</i>		
Yes	6	20
No	24	80

Findings related to Demographic variables of Staff Nurses (Table 1).

- According to their age, most of the staff nurses 19 (63.3%) were in 21-25 years of age, followed by few 8 (26.7%) were in 26-30 years of age and very few 3 (10%) were in 31-35 years of age.
- Regarding qualification, most of the staff nurses 13 (43.3%) had completed GNM, few 11 (36.7%) had completed B.Sc Nursing and very few 6 (20%) had completed ANM.
- In regard to previous knowledge on BLS among staff nurses, mostly all of them 30 (100%) had previous knowledge on BLS whereas most of the staff nurses 22 (73.3%) got information from health personnel, 5 (16.7%) got information from books and journals and very few 3 (10%) got information from friends and family.
- As per experience, most of the staff nurses 14 (46.6%) had 0-2 years of experience, few 11 (36.7%) had 2-4 years of experience and very few 5 (16.7%) had above 5 years of experience.
- Regarding any special training course taken on BLS, most of the staff nurses 24 (80%) had not taken any special course and only few 6 (20%) had taken special course on BLS.

Objective 1: To assess the pre-test knowledge and practice regarding Basic Life Support among staff nurses.

Present study results revealed that during pre-test majority 22 (73.3%) had moderate knowledge and 8 (26.7%) had in adequate knowledge regarding Basic Life Support whereas regarding practice majority 17 (56.7%) had adequate practice and 13

(43.3%) had inadequate practice regarding Basic Life Support. (Fig. 1 & 2).

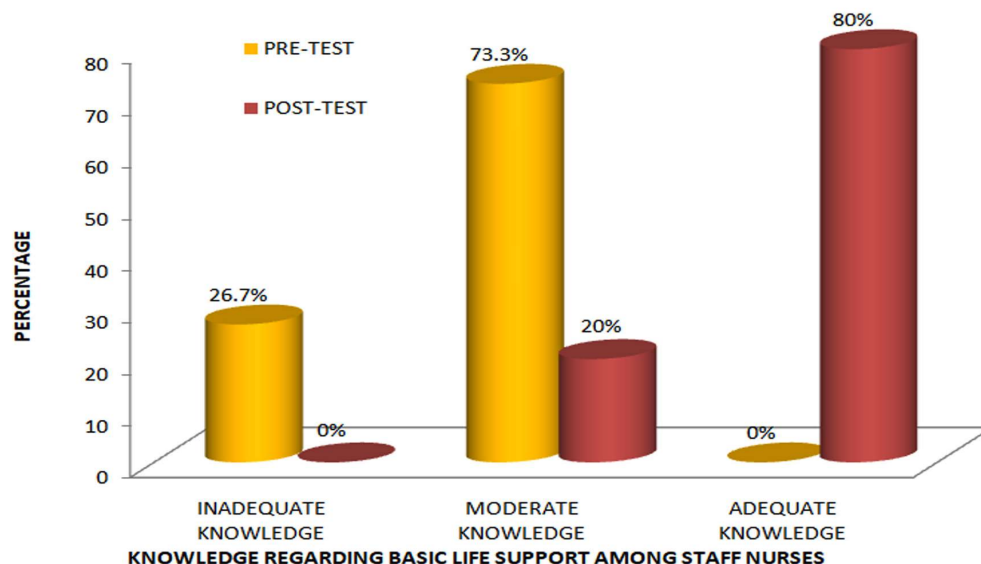


Fig 1: Pre-test and post-test level of knowledge regarding Basic Life Support among staff nurses.

Similar study was carried by Prasad M (2017)⁴ to assess the knowledge and practice of nurses on BLS revealed that majority 65% of nurses had moderate knowledge and 53% had moderate practices on BLS.

Objective 2: To assess the post-test knowledge and practice regarding Basic Life Support among

staff nurses.

Present study results showed that during post-test majority 24 (80%) had adequate knowledge and 6 (20%) had moderate knowledge regarding Basic Life Support while regarding practice post-test all the staff nurses 30 (100%) had adequate practice regarding Basic Life Support. (Fig. 1 & 2)

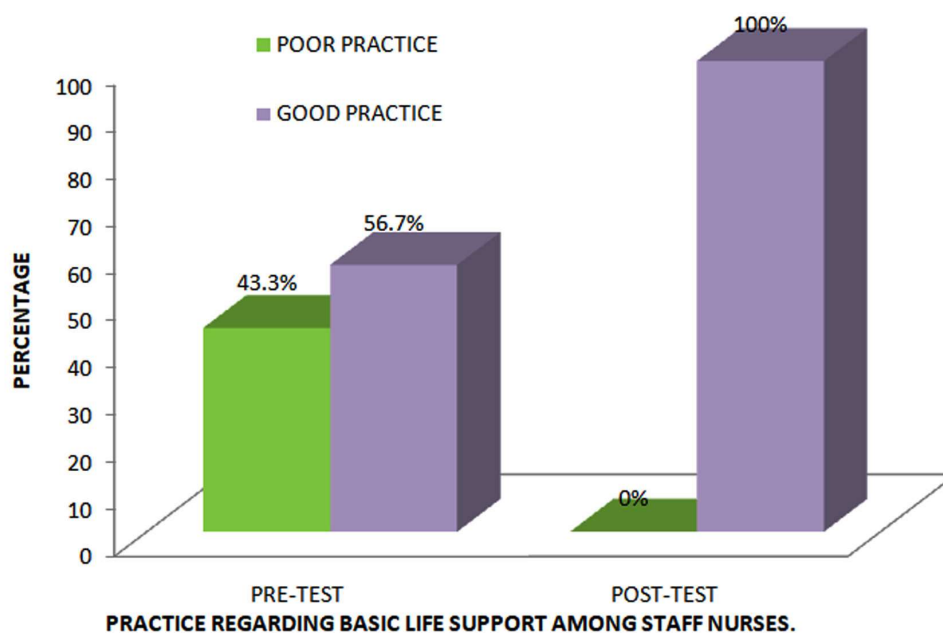


Fig 2: Pre-test and post-test level of practice regarding Basic Life Support among staff nurses.

Study was supported by Ravichander K (2016)⁵ assessed the effectiveness of structured teaching programme on knowledge and practice regarding BLS among staff nurses. Results revealed that maximum 88% staff nurses had adequate knowledge and 12% had moderate knowledge. More over majority 95% staff nurses had adequate practice and 5% had moderate practice on BLS.

Objective 3: To compare the pre-test and post-test knowledge score regarding Basic Life Support

among staff nurses.

Findings showed that mean pre-test knowledge score was 10.23 ± 2.315 and in post-test mean knowledge score was 18.27 ± 1.946 with mean difference of 8.03 and t -value 17.71 ($df=29$, $p=0.001$) which was found statistically highly significant at $p<0.05$. So H1 hypothesis is accepted. Findings indicated that structured teaching programme was effective in improving the knowledge regarding Basic Life Support among staff nurses. (Table 2)

Table 2: Effectiveness of structured teaching programme on knowledge regarding Basic Life Support among staff nurses.

N=30						
Level of Knowledge	Mean	SD	Mean D	t value	df	P value
Pre-test	10.23	2.315	8.03	17.71	29	0.001*
Post-test	18.27	1.946				

* $p<0.05$ level of significance

Similar Study was carried out by Filmon Ghirmai. *et al.*, (2022)⁶ and the findings showed that before training, the mean score of the study participant on knowledge questions was 9.58/20 and none of the respondents got a pass mark. Immediately after the training the mean score of the study participants was increased to 15.9/20 and 55.0% of the study participant got a passing mark. Nurses' knowledge was improved from their pre-training scores, which clearly indicated a positive response in Basic Life Support knowledge after training.

Objective 4: To compare the pre-test and post-test

practice score regarding Basic Life Support among staff nurses.

Findings revealed that mean pre-test practice score was 5.77 ± 1.194 and in post-test mean practice score was 8.57 ± 1.104 with mean difference of 2.80 and t -value 9.815 ($df=29$, $p=0.001$) which was found statistically highly significant at $p<0.05$. So H2 hypothesis is accepted. Findings indicated that structured teaching programme was effective in improving the practice regarding Basic Life Support among staff nurses. (Table 3)

Table 3: Effectiveness of skill development programme on practice regarding Basic Life Support among staff nurses.

N=30						
Level of Practice	Mean	SD	Mean D	t value	df	P value
Pre-test	5.77	1.194	2.80	9.815	29	0.001*
Post-test	8.57	1.104				

* $p<0.05$ level of significance

The mean post-test practice scores (7.8) of experimental.

Related study was conducted by Swati Sharma *et al.*, (2017)⁷ and revealed that the mean post-test practice scores (7.8) of experimental group was higher than their mean pre-test practice scores (2.9) with a mean difference of 4.9. the ' t ' value of 14.62 for df 11 was found to be statistically significant at 0.05 level of significance.

Objective 5: To find out the association between pre-test knowledge regarding Basic Life Support among staff nurses with selected demographic variables.

Results revealed that demographic variables

such as age, qualification, source of information, experience and any special training course taken, were not found significantly associated at $p<0.05$ level with pre-test level of knowledge regarding Basic Life Support among staff nurses. So H3 hypothesis is rejected.

Objective 6: To find out the association between pre-test practice regarding Basic Life Support among staff nurses with selected demographic variables.

Result revealed that experience of staff nurses was found significantly associated at $p<0.05$ level. So H4 hypothesis is accepted for this variable. But other demographic variables such as age,

qualification, source of information and any special training course taken, were not found significantly associated at $p < 0.05$ level with pre-test level of practice regarding Basic Life Support among staff nurses. So H4 hypothesis is rejected for these demographic variables.

CONCLUSION

The findings of the study concluded that during pre-test majority 22 (73.3%) had moderate knowledge whereas during post-test majority 24 (80%) had adequate knowledge and all the staff nurses 30 (100%) had adequate practice skill regarding Basic Life Support. After administration of computer assisted teaching and skill development programme, the knowledge and practice of staff nurses were improved regarding BLS and was found very effective.

Implications of the Study

Nursing Education

- The knowledge and practice regarding BLS is more important for the nurses in the practice in order to provide quality of care for the cardiac arrest victims.
- The present study emphasized on educating the staff nurses to improve their knowledge on BLS and cardio-pulmonary resuscitation.

Nursing Practice

- Educate the staff nurses by updating their skills in performing CPR to the cardiac arrest victim as per the manual.
- To improve the skills of nursing practice, continuous training sessions to be implemented.

Nursing Administration

- Nursing administrators should take initiative and be involved in organizing various sessions to update the skills among staff nurses in performing CPR/BLS.
- Nursing administrators should ensure to provide continuous education to the nurses in updating their knowledge and practice skills to perform effective basic life support.

Nursing Research

- Nursing research can be conducted among the staff nurses to ensure the skills among nurses in performing the BLS/ ACLS.

- Experimental research study can be conducted among the staff nurses to assess the skills among nurses.

Limitations

- The present study was limited to 30 staff nurses.
- The present study was limited to staff nurses.

Recommendations

- The study can be conducted on large sample size.
- The study can be conducted at different settings and population.
- The follow up study can be conducted to assess the practice of staff nurses on BLS.

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Conflict of interest

This study is self-funded research work. So there is no conflict of interest.

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