



A STUDY TO ASSESS THE EFFECTIVENESS OF DEMONSTRATION OF BASIC LIFE SUPPORT AMONG YOUNG ADULTS IN SELECTED COLLEGE AT MANGALORE

Nursing

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ABSTRACT

Cardiopulmonary arrest is a life-threatening emergency requiring immediate Cardiopulmonary Resuscitation (CPR) to improve survival. Adequate knowledge and skills in Basic Life Support (BLS) among young adults, especially nursing students, are essential. This study aimed to assess the effectiveness of a BLS demonstration on knowledge and CPR skills among young adults. A quantitative pre-experimental design was used among 50 students selected through non-probability sampling at Srinivas Institute of Nursing Sciences, Mangalore. Data were collected using a structured questionnaire and skills demonstration checklist. Post-test scores showed significant improvement compared to pre-test scores ($t=17.827$; $t=14.732$). The study concludes that BLS demonstration effectively improved CPR knowledge and skills.

KEYWORDS

Basic Life Support, Cardiopulmonary Resuscitation, Demonstration, Knowledge, Young Adults.

INTRODUCTION

Cardiopulmonary Resuscitation (CPR) is an emergency life-saving procedure involving chest compressions and rescue breathing provided to a victim who is presumed to be in cardiac arrest. Cardiac arrest is a major cause of mortality worldwide and accounts for a large proportion of sudden deaths each year. It is estimated that about 30,000–40,000 deaths occur annually due to cardiac arrest, contributing to nearly 65% of total deaths. Cardiac arrest can occur both inside and outside hospital settings; however, out-of-hospital cardiac arrest has a higher incidence and lower survival rate globally.¹

Although the guidelines for managing in-hospital and out-of-hospital cardiac arrest are almost similar, differences in the environment, availability of equipment, and immediate response can influence patient outcomes. Studies have shown significant variability in survival rates between pre-hospital and in-hospital cardiac arrest cases.² Therefore, it is essential for healthcare professionals and students to acquire and maintain adequate knowledge and skills in CPR and remain updated with the latest guidelines. The guidelines published by the American Heart Association (AHA) and the European Resuscitation Council are considered the gold standard for the management of cardiac arrest and other life-threatening emergencies.³

CPR is the combination of chest compressions and rescue breathing that helps maintain blood circulation and oxygen delivery to vital organs such as the brain and heart until advanced medical care becomes available. Early and effective CPR can significantly reduce mortality by maintaining oxygenated blood flow and preventing brain damage, which may occur within a few minutes of oxygen deprivation.⁴

Basic Life Support (BLS) is performed to maintain circulation and respiration through CPR until advanced life support arrives. Current guidelines recommend chest compressions at a depth of 5–6 cm and a rate of 100–120 compressions per minute. Emphasis is placed on early, high-quality chest compressions, especially for untrained rescuers.⁵ CPR primarily aims to restore partial blood flow to vital organs and delay tissue death until normal heart rhythm is restored.⁶

Promoting awareness of BLS training among young adults and students is essential, as early education improves confidence, motivation to help others, and overall safety culture. The World Health Organization also advocates the introduction of BLS training in schools.⁷ Defibrillation, which involves delivering an electric shock to the heart, is often required in certain cardiac conditions such as ventricular fibrillation or ventricular tachycardia.⁸ Therefore, nursing students must receive adequate training and regular practice in CPR through teaching and simulation laboratories to enhance their knowledge and practical skills.⁹

Objectives

- To determine pretest knowledge score regarding basic life support demonstration.
- To determine the effectiveness of basic life support demonstration in terms of gain in post test score.
- To determine the association between pretest score regarding basic life support demonstration and demographic variables

RESEARCH METHODOLOGY

Research methodology refers to the systematic procedures used by the investigator to conduct the study from identification of the problem to analysis and interpretation of data. The present study aimed to assess the effectiveness of demonstration of Basic Life Support (BLS) among young adults in a selected college in Mangalore.

Research Approach

A quantitative research approach was used to evaluate the effectiveness of demonstration on Basic Life Support among students.

Research Design

Pre-experimental one-group pretest–posttest design was adopted. Schematic Representation

Pre-test	Intervention	Post-test
O1	X	O2

Key:

- O1 – Pre-test assessment of knowledge and skills regarding BLS
- X – Demonstration on Basic Life Support
- O2 – Post-test assessment after demonstration

Variables

- Independent Variable: Demonstration on Basic Life Support.
- Dependent Variables: Knowledge and skills regarding BLS.

Research Setting

The study was conducted at Srinivas Institute of Nursing Sciences, Valachil, Mangalore.

Population

Target Population: Young adults studying in a selected college in Mangalore.

Accessible Population: Students studying at Srinivas Institute of Nursing Sciences.

Sample and Sampling Technique

Sample Size: 50 students.

Sampling Technique: Non-probability convenience sampling.

Inclusion Criteria

Students present during data collection.

Students of both genders.

Students willing to participate.

Exclusion Criteria

Students who were not cooperative.
Students absent during data collection.

Data Collection Instruments

Tool 1: Demographic Performa (5 items).
Tool 2: Structured knowledge questionnaire (25 MCQs).
Tool 3: Observation checklist for CPR demonstration.

Content Validity

Validity was established by five experts from the institution.

Data Collection Procedure

Permission was obtained from the Principal.
Data were collected on 05-05-2024.
Pre-test, demonstration, and post-test were conducted among 50 participants.

Plan for Data Analysis

Descriptive statistics: Frequency, percentage, mean, and standard deviation.
Inferential statistics: Paired t-test to compare pre-test and post-test scores.

RESULTS AND ANALYSIS

Data analysis is an essential phase of the research process that involves organizing, summarizing, and interpreting collected data to answer research questions and test hypotheses. The present study assessed the effectiveness of Basic Life Support (BLS) demonstration on knowledge and skills among young adults at Srinivas Institute of Nursing Sciences, Valachil, Mangalore. The data were analyzed using descriptive and inferential statistics.

Table 1: Frequency and Percentage Distribution of Demographic Variables (n = 50)

Sl. No	Demographic Variable	Category	Frequency	Percentage
1	Gender	Male	6	12%
		Female	44	88%
2	Age (years)	19–20	2	4%
		21–22	44	88%
		23 and above	4	8%
3	Classroom Performance	Above average (>80%)	12	24%
		Average (50–80%)	38	76%
		Below average (<50%)	0	0%
4	Source of BLS Information	Classroom	38	76%
		Internet	11	22%
		Others	1	2%
5	Previous Experience on BLS	Not witnessed	17	34%
		Witnessed	32	64%
		Performed	1	2%
6	Students' Interest	No interest	11	22%
		Moderate	29	58%
		High interest	10	20%

Description:

Table 1 shows the demographic characteristics of the participants. Most participants were females (88%). The majority belonged to the age group of 21–22 years (88%). Regarding academic performance, 76% had average scores. Most students (76%) had prior information about BLS from classroom teaching. About 64% had previously witnessed BLS, and 58% showed moderate interest in learning CPR.

Table 2: Mean and Standard Deviation of Pre-test and Post-test Knowledge Scores (n = 50)

Category	Mean	Standard Deviation
Pre-test	9.32	2.21
Post-test	18.38	3.07

Description:

Table 2 indicates a significant improvement in knowledge scores after the BLS demonstration. The mean score increased from 9.32 in the

pre-test to 18.38 in the post-test, demonstrating the effectiveness of the educational intervention.

Table 3: Mean and Standard Deviation of Pre-observation and Post-observation Scores (n = 50)

Category	Mean	Standard Deviation
Pre-observation	3.76	1.06
Post-observation	5.34	0.98

Description:

Table 3 shows improvement in practical demonstration skills of CPR. The mean score increased from 3.76 before the demonstration to 5.34 after the demonstration, indicating improved BLS skills.

Table 4: Paired t-test Analysis of Knowledge and Skill Scores

Comparison	Mean Difference	df	t-value
Pre-test vs Post-test Knowledge	9.06	49	17.827
Pre-observation vs Post-observation Skills	1.58	49	14.732

Description:

Table 4 reveals a statistically significant improvement in both knowledge and demonstration skills following the BLS training. The t-values (17.827 and 14.732) indicate that the intervention was highly effective in improving participants' knowledge and practical skills related to Basic Life Support.

DISCUSSION

The present study was conducted to assess the effectiveness of a Basic Life Support (BLS) demonstration on the knowledge and skills of young adults studying at Srinivas Institute of Nursing Sciences, Mangalore. The findings showed that most of the participants were females (88%) and belonged to the age group of 21–22 years (88%). The majority of students (76%) reported that their previous knowledge about BLS was obtained from classroom teaching, and 58% showed moderate interest in learning CPR.

The study results revealed a significant improvement in knowledge scores after the BLS demonstration. The mean pre-test knowledge score was 9.32 ± 2.21 , which increased to 18.38 ± 3.07 in the post-test. The paired t test value ($t = 17.827$) indicated a statistically significant improvement in knowledge following the intervention. Similarly, the practical skills of CPR demonstration also improved. The mean pre-observation score was 3.76 ± 1.06 , which increased to 5.34 ± 0.98 in the post-observation. The t value ($t = 14.732$) confirmed that the improvement in demonstration skills was statistically significant.

The findings also showed that there was no significant association between knowledge levels and demographic variables such as age, gender, classroom performance, and previous experience of BLS. However, students' interest in learning CPR showed a significant association with knowledge levels.

CONCLUSION

The study concludes that the knowledge and demonstration skills regarding Basic Life Support among young adults were inadequate before the intervention. The BLS demonstration significantly improved both knowledge and practical skills. Therefore, regular training and demonstration programs on BLS should be included in nursing education to enhance emergency care competence among students.

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