



A study to evaluate the effectiveness of planned teaching programme on basic life support in terms of knowledge and practice among college going students of selected colleges of Ahmedabad city

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Abstract

A study to assess effectiveness of planned teaching programme on knowledge and practice regarding Basic Life Support among college going students of Ahmedabad city. The objectives of the study were : 1.To assess the knowledge regarding basic life support before and after administration of planned teaching programme among college going students of selected colleges of Ahmedabad city.2.To assess the practice regarding Basic Life Support before and after administration of planned teaching programme among the college going students of selected colleges of Ahmedabad city.3.To identify the association between pre-test knowledge scores and demographic variables among the college going students of selected colleges of Ahmedabad city.4.To identify the association between pre-test practice scores and demographic variables among the college going students of selected colleges of Ahmedabad city. Pre-experimental one group pre-test posttest, convenient sampling techniques for 60 samples used. Analysis and Interpretation of Data related to Demographic variables of the samples. It shows the demographic characteristic of college going students, out of 60 samples, in age, majority 24(40%) were 18-20 year old, 21 (35%) were between 21-23 years old and only 15 (25%) were aged 24 years and more. In gender majority, 37(61.7%) were male and 23 (38.3%) were females. With respect to native language, majority 48 (80%) speak Gujarati, 10(16.7%) were Hindi language, 1 (1.7%) were English and other language speakers. In area of residency, 31 (51.7%) reside in urban area and 29 (48.3%) reside in rural area. Regarding previous knowledge on BLS, majority 52 (86.7%) responded no and only 8 (13.3%) responded yes. The pre-test mean score was 10.27, while the post-test mean score was 20.57. The mean difference between pre and posttest was 10.3. The standard deviation (SD) for the pre-test was 4.05, and for the post-test, it's 3.52. The paired 't' test value was 35.949 with a p-value < 0.001, indicating a statistically significant improvement from pre to post-test.

The degrees of freedom (df) for the analysis were 59. This suggests a substantial increase in knowledge levels after the intervention. Hence the research hypothesis H₀ is rejected and H₁ was accepted. This indicates that the planned teaching programme was effective in increasing the knowledge of college going students regarding Basic Life Support. The mean pre-test practice score is 6.30+1.63 with mean percentage 42%. Whereas the mean post-test practice score was 12.78+1.96 with mean percentage 85.2%. Total percentage of practice gain was 43.2%. The comparison of pre-test and post-test practice scores. The pre-test mean practice score was 6.30, while the post-test mean score was 12.78. The mean difference between pre and post-test was 6.48. The standard deviation (SD) for the pre-test was 1.63, and for the post-test, it's 1.96. The paired 't' test value was 25.832 with a p-value < 0.001, indicating a statistically significant improvement from pre to post-test. The degrees of freedom (df) for the analysis were 59. This suggests a substantial increase in practice levels after the intervention. Hence research hypothesis H₂ was accepted. This indicates that the planned teaching programme was effective in increasing the practice of college going students regarding Basic Life Support. Association between pre-test knowledge score and demographic variables of college going students, it shows the presence of significant association between pre-test knowledge score with age and knowledge on BLS demographic variables, whereas for the rest of the demographic variables there was no significant association. Hence we accept the hypothesis H₃ for mentioned demographic variables. Association between pre-test practice score and demographic variables of college going student. Reveals that all demographic variables has the calculated chi square value less the table value, at 0.05 level of significance. Thus it shows there is no significant association between post-test practice score and demographic variables. Hence we reject the hypothesis H₄.

Keywords: Effectiveness, planned teaching programme, knowledge, practice, basic life support, students

Introduction

Basic Life Support (BLS) refers to a level of medical care applied to victims of life-threatening illnesses and injuries before arrival at a health institution or before professional help is provided. Having adequate knowledge of BLS and an understanding of cardiopulmonary resuscitation can save the lives of victims of life-threatening medical emergencies and sudden cardiac arrest (SCA). These procedures and knowledge are usually performed in situations where there is a danger to life until further standard care is provided at the health facility.

Sudden cardiac arrest (SCA) is when the heart stops beating or functioning abruptly which will eventually lead to the aborted blood supply to vital organs such as the brain; and if not treated immediately, sudden death or serious disability will happen. The result of SCA situations is mainly dependent on the time at which resuscitation is begin in which late intervention may end up with damage to heart rate and brain function due to lack of oxygen in these areas. For BLS providers to initiate resuscitation as quickly as possible need adequate knowledge and understanding to recognize signs of clinical symptoms, thereby the time

between identification of symptoms and initiation of CPR can be reduced. (Muhiddin T., et.al, 2022)

The International Liaison Committee on Resuscitation (ILCOR) was formed in 1992 to coordinate the efforts of resuscitation worldwide. The ILCOR representatives come from various countries such as the United States, Canada, Australia, New Zealand, and from the European, Asian, and African continents. In 2000, the committee published the first resuscitation guideline. In 2005, the committee published the International Consensus on Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC) Science with Treatment Recommendations. Since 2010, the committee has provided materials for regional resuscitation providers such as the European Resuscitation Council and American Heart

Association to write their guidelines. Since 2015, ILCOR has used a new methodology called Consensus on Science with Treatment Recommendations (COSTR) to evaluate the quality of the latest evidence available and to reach a conclusion on the best treatments available in resuscitation. Using the COSTR methodology, ILCOR also started to conduct yearly reviews and published updates on the latest evidence in resuscitation, changing it from the previous 5-yearly review on resuscitation. CPR provided in the field increases the time available for higher medical responders to arrive and provide ALS care. An important advance in providing BLS is the availability of the Automated external defibrillator or AED. This improves survival outcomes in cardiac arrest cases. (Hallstrom A.P., et. al, 2021)

In India, the Sudden Cardiac Death rate in those >35 years of age was estimated 39.7/100,000 with male/female ratio of 4.65. Therefore, BLS is important to learn and train for each and every health personnel as they are the first who interact with the patient especially nurses as they are in direct contact with the patient day and night. Not only the health personnel should be trained but non-medical professionals also should be trained for BLS as no one knows when and where an emergency can occur. (Thakur V. and Singh R., 2021)^[31]

The administration of Basic Life Support (BLS), with particular emphasis on Cardiopulmonary Resuscitation (CPR), is an essential component of cardiac survival. CRP is an emergency critical care technique that aims to maintain adequate breathing and perfusion until the etiology of the cardiac arrest is identified and resolved. Thus, early diagnosis, quick and efficient CPR, and prompt defibrillation are vital for a satisfactory resuscitation result following a cardiac arrest. A trained BLS provider's fundamental skills may be able to lower the fatality rate associated with cardiac arrest in people with cardiovascular disease. Everyone in the community, including medical staff, and students, should be knowledgeable about BLS. Knowledge of BLS should be extended beyond medical staff to the entire public. (Alkarrash M.S., et. al, 2023)^[10, 12] Out-of-hospital cardiac arrest (OHCA) is the loss of functional cardiac mechanical activity in association with an absence of systemic circulation, occurring at a setting outside of the hospital. OHCA is a common, time-critical disease and is a major cause of mortality and morbidity globally. Despite advances in healthcare, mortality in OHCA remains high, with the pooled incidence of return of spontaneous circulation at 29.7%, and survival to admission at 22.0% for patients to whom cardiopulmonary resuscitation was initiated. Observed variations in OHCA outcomes are multifactorial. Contributors to OHCA

outcomes include factors such as local differences in the community aspects of the chain of survival including early bystander cardiopulmonary resuscitation (CPR) and defibrillation with an automated external defibrillator (AED).

A study done in Sweden has shown that survival rates are proportional to the rates of bystander CPR, which are linked to the percentage of the population who are CPR trained. Bystander CPR and AED use are crucial determinants of patient outcomes, and prior CPR or AED training is associated with performing bystander CPR and AED. However, the prevalence of the population trained in CPR or AED training is likely to vary by geographical region and has been reported to be as low as 2.4%. Worldwide, efforts have been made to improve access to CPR or AED training by various organizations, such as the American Heart Association, the Red Cross societies and the Laerdal Foundation. These may include strategies such as incorporating basic life support (BLS) training into educational curriculum in public schools and training BLS skills at community institutions. Beyond in-person courses, BLS training may be offered on online platforms as well, such as an interactive website by the Resuscitation Council UK. Data regarding the prevalence of CPR or AED training across the globe and which subpopulations have the poorest access to BLS training is hence urgently needed to guide targeted public health and educational initiatives that promote BLS training among laypersons. (Priscilla T., et. al, 2023)

Objectives

1. To assess the knowledge regarding basic life support before and after administration of planned teaching programme among college going students of selected colleges of Ahmedabad city.
2. To assess the practice regarding basic life support before and after administration of planned teaching programme among the college going students of selected colleges of Ahmedabad city.
3. To identify the association between pre-test knowledge scores and demographic variables among the college going students of selected colleges of Ahmedabad city.
4. To identify the association between pre-test practice scores and demographic variables among the college going students of selected colleges of Ahmedabad city.

Hypothesis

H0: There is no difference between pre-test and post-test knowledge & practice scores at 0.05 level of significance.

H1: The mean post-test knowledge scores of the students will be significantly higher than the mean pre-test knowledge scores after the administration of the planned teaching program on basic life support as evidenced by structured knowledge questionnaire at 0.05 level of significance.

H2: The mean post-test practice scores of the students will be significantly higher than the mean pre-test practice scores after the administration of the planned teaching program on basic life support as evidence by the observational checklist scale at 0.05 level of significance.

H3: There will be a significant association between pretest knowledge scores and demographic variables among college going students.

H4: There will be a significant association between pretest practice scores and demographic variables among college going students.

Material and Methods

Research Approach

A quantitative research approach was used for this study.

Research Design

Pre-experimental one group pre-test post- test design was adopted for this study.

Variables

- 1. Demographic variable:** Age, Gender, Native Language, Area of Permanent Residency, Previous Knowledge.
- 2. Independent variables:** Planned teaching programme is the independent variable.
- 3. Dependent variables:** Knowledge and Practice of students is the dependent variable.

Research Setting

The setting for the study was selected colleges in Ahmedabad city. The selected colleges of Ahmedabad city is selected according to zones of Ahmedabad city.

Target Population: In this study, the target population consisted of all selected Commerce colleges going students of Ahmedabad city.

Sample: It refers to the college going students who fulfilled the inclusive criteria.

Sample Size: A sample consists of a subset of the units that compose the population. The sample comprised of the 60 students in selected colleges who are pursuing B.Com. degree in Ahmedabad city.

Sampling Technique: The investigator adopted Nonprobability convenient sampling technique to select the samples. The sample who met the criteria for sample selection were selected.

Criteria For Sample Selection

Inclusive criteria:

- Undergraduate Students of selected colleges of Ahmedabad city.
- Selected Colleges of Ahmedabad city.
- Students who are available during the period of data collection and willing to participate in the programme.
- Students who are able to understand English language.

Exclusive criteria

A) Students who have attended programme related to Basic life support.

Selection of Tool For Data Collection

Part I: It consisted of Demographic variables. All items in this part were categorized as follow : Age variable was grouped into 18-20 years, 21-23 years and 24 years and above, Gender was classified into Male, Female and Transgender, Native Language was categorized into Gujarati, Hindi, English and Others, Area of Permanent Residency was grouped into Rural and Urban and Previous Knowledge categorized into Yes and No.

Part II: Structured knowledge questionnaire consisted of 30 items to assess knowledge regarding Basic Life Support.

Each items carried 1 mark. Maximum score of questionnaire was 30. Investigator gave "0" mark for wrong and "1" mark for correct answer. If the knowledge score was 0 to 10 than it may considered as poor knowledge, if the knowledge score was 11 to 20 than it may considered as average knowledge and if the knowledge score was 21 to 30 than it may considered as good knowledge.

Part III: Investigator had used observational checklist. The tool consisted of 15 statements regarding practice about Basic Life Support. Investigator prepared items were subdivided in sub area of the content related to Basic Life Support as follows: Initiation of CPR, Checking for Responsiveness, Circulation, Chest Compressions (Adult), Airway Management, Breathing Assessment / Ventilations (Rescue Breaths), Evaluation and Overall Technique. If the practice score was 0 to 05 than it may considered as poor practice, if the practice score was 06 to 10 than it was considered as average practice and if the practice score was 11 to 15 than it was considered as good practice.

Procedure For Data Collection

Data collection is the gathering of information needed to address of research problem. Before starting data collection, formal permission has been obtained from the Principals of selected colleges of Ahmedabad city. The investigator had addressed her to the samples and the objectives of this research study. Informed consent was obtained by each sample. The Questionnaire were distributed to all the samples and collected on completion by investigator. The researcher thanked all the respective Principals and samples for their cooperation.

The main study data collection was done from 07/02/2025 after obtaining formal permission from selected colleges of Ahmedabad city. The data were collected in selected colleges of selected city setting as per the permission. Also investigator had explained about the purpose of the study, the need for filling questionnaire accurately and honestly to the samples. The Questionnaire was distributed among the samples and was collected by the researcher on completion. Data collection was processed every day. Investigator had found that all the samples and informant gave good cooperation during data collection process.

Analysis And Interpretation of the Data

Major findings of the study are presented under following sections and heading:

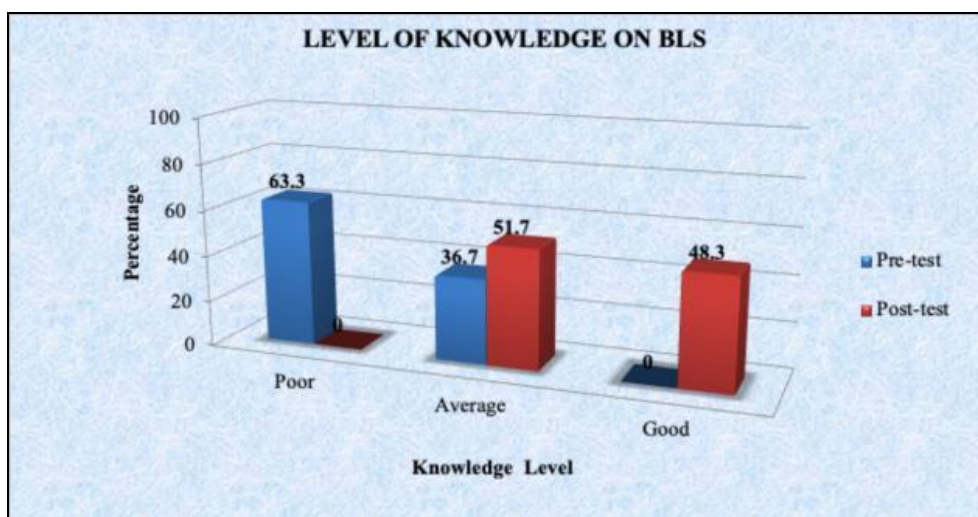
The obtained data are organized and presented in the following sections:

1. Analysis and Interpretation of the demographic variables of the samples.
2. Analysis and Interpretation of data related to pretest and post-test knowledge score of the samples including effectiveness of planned teaching program.
3. Analysis and Interpretation of data related to pretest and post-test practice score of the samples including effectiveness of planned teaching program.
4. Analysis and Interpretation of data related to association between pre-test knowledge score with demographic variables.
5. Analysis and Interpretation of data related to association between pre-test practice score with demographic variables.
6. Frequency and percentage wise distribution of samples based on demographic variables.

[n=60]

Sr. No	Demographic variables	Variable	Frequency (f)	Percentage (%)
1	Age in years	18 - 20 years	24	40.0
		21 - 23 years	21	35.0
		24 years & above	15	25.0
2	Gender	Male	37	61.7
		Female	23	38.3
		Transgender	0	0
3	Native language	Gujarati	48	80.0
		Hindi	10	16.7
		English	1	1.7
		Other	1	1.7
4	Area of residency	Rural	29	48.3
		Urban	31	51.7
5	Previous Knowledge on BLS	Yes	8	13.3
		No	52	86.7

In pre-test, majority, 38 (63.3%) samples had poor knowledge level, 22 (36.7%) sample had average knowledge level and none of the sample had good knowledge level. Whereas in post-test, 29 (48.3%) samples had good knowledge level, 31 (51.7%) samples had average knowledge level. This shows the shifting of knowledge from poor to average and good.



Frequency and percentage distribution of pre-test and post-test level of practice regarding BLS among college going students [n=60]

Practice level	Score	Pre test		Post test	
		F	%	F	%
Poor practice	0-5	23	38.3	0	0
Average practice	6-10	37	61.7	12	20.0
Good practice	11-15	0	0	48	80.0
		60	100%	60	100%

Association between pre-test knowledge score and demographic variables of subjects. [n=60]

Sr. No.	Demographic variables	Poor	Average	f	χ^2 value	Table value	df	Remarks
1	Age in years				10.637	5.991	2	S
	18 - 20 years	21	3	24				
	21 - 23 years	11	10	21				
	24 years & above	6	9	15				
2	Gender				0.745	3.841	1	NS
	Male	25	12	37				
	Female	13	10	23				
3	Native language				2.386	7.815	3	NS
	Gujarati	31	17	48				
	Hindi	6	4	10				
	English	0	1	1				
4	Area of residency				1.993	3.841	1	NS
	Other	1	0	1				

	Rural	21	8	29				
	Urban	17	14	31				
5	Previous knowledge on BLS				5.841	3.841	1	S
	Yes	2	6	8				
	No	36	16	52				

S: Significant, NS: Non significant at 0.05 level of significance

Association between pre-test practice score and demographic variables of subjects [n=60]

Sr. No.	Demographic variables	Poor	Average	f	χ^2 value	Table value	df	Remarks
1	Age in years				1.435	5.991	2	NS
	18 - 20 years	11	13	24				
	21 - 23 years	6	15	21				
	24 years & above	6	9	15				
2	Gender				0.010	3.841	1	NS
	Male	14	23	37				
	Female	9	14	23				
3	Native language				2.256	7.815	3	NS
	Gujarati	18	30	48				
	Hindi	4	6	10				
	English	0	1	1				
	Other	1	0	1				
4	Area of r esidency				0.004	3.841	1	NS
	Rural	11	18	29				
	Urban	12	19	31				
5	Previous knowledge on BLS				0.003	3.841	1	NS
	Yes	3	5	8				
	No	20	32	52				

Conclusion

From the above findings it was considered important part of concluding the findings of the study. The present study was aimed at assessing level of knowledge regarding Basic Life Support among college going students. In the present study a sample of 60 students were selected from 6 Government and Private Colleges from Ahmedabad city. A pre-experimental design was adopted for the study with a view to measure the student's knowledge regarding Basic Life Support. The data was collected and analyzed statistically based on the objective of the study. The following conclusion was drawn based on the findings of this study under various objectives.

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