

# A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Basic Life Support among Selected Arts and Science College Students in Puducherry

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## ABSTRACT

**Background:** Basic Life Support (BLS) and Cardiopulmonary Resuscitation (CPR) are critical skills that significantly increase survival rates in victims of out-of-hospital cardiac arrest. While health professionals are trained in these skills, knowledge among non-medical undergraduate students is often inadequate. This study aimed to evaluate the effectiveness of a Structured Teaching Programme (STP) on BLS knowledge among Arts and Science students in Puducherry. **Methods:** A pre-experimental research design (one-group pre-test post-test) was conducted among 80 students at PSV Arts and Science college in Puducherry. A validated, structured questionnaire was used to assess knowledge levels before and after the intervention. Data were analyzed using paired t-tests and Chi-square analysis. **Results:** The baseline (pre-test) knowledge was overwhelmingly inadequate (82.5%), with a mean score of  $11.28 \pm 4.34$ . Following the STP, knowledge scores improved significantly (mean  $23.23 \pm 4.22$ ;  $t = 18.02$ ,  $p < 0.001$ ), with 65% of students achieving adequate knowledge and 35% achieving moderately adequate knowledge. Significant associations were found between pre-test knowledge and Religion ( $p=0.022$ ), Mother's Education ( $p=0.017$ ), and Prior CPR knowledge ( $p=0.043$ ). **Conclusion:** The structured teaching programme was highly effective in bridging the knowledge gap regarding Basic Life Support. Integrating BLS training into the general undergraduate curriculum for all disciplines is essential to enhance the readiness of student communities as first responders.

**KEYWORDS:** Basic Life Support, Cardiopulmonary Resuscitation, Structured Teaching Programme, Undergraduate Students, Puducherry, Nursing.

## 1. INTRODUCTION:

Basic Life Support (BLS) is the immediate assistance provided to individuals experiencing critical emergencies such as cardiac arrest, respiratory failure, or airway obstruction, until professional medical help arrives. It primarily includes cardiopulmonary resuscitation (CPR), airway management, breathing support, and the use of automated external defibrillators (AEDs). Prompt and effective BLS significantly increases the chances of survival and reduces complications during emergencies (American Heart Association, 2020).

Cardiac diseases rank among the top causes of mortality globally (World Health Organization, 2024). Sudden cardiac arrest demands urgent intervention and can happen to individuals of any age group. Life-saving measures are crucial to preventing deaths associated with sudden cardiac arrest (Poudel & Yadav, 2023). The American Heart Association highlights the importance of ensuring that individuals are skilled in cardiopulmonary resuscitation techniques.

The global incidence of out-of-hospital cardiac arrest (OHCA) is approximately 55 cases per 100,000 individuals each year. OHCA is a significant public health concern. However, the proportion of individuals trained in CPR varies widely and has been reported to be low. Basic Life Support helps nearly 50,000 people each year survive until emergency medical services arrive when performed correctly (Yan et al., 2020; Patel et al., 2025).

College students, especially those pursuing Arts and Science degrees, usually do not receive formal training in BLS, yet they frequently spend time in public places where emergencies may occur. Several research studies have reported inadequate knowledge of BLS among non-medical students (Priya Dharshini et al., 2023; Nutan Kumari et al., 2023; Mao et al., 2021).

The present study titled “A study to assess the effectiveness of structured teaching programme on knowledge regarding Basic Life Support among selected Arts and Science college students in Puducherry” aims to evaluate how effectively a structured teaching program can enhance the knowledge of Arts and Science College students regarding BLS.

## 2. STATEMENT OF THE PROBLEM

A study to assess the effectiveness of structured teaching programme on knowledge regarding Basic Life Support among selected Arts and Science college students in Puducherry.

## 3. OBJECTIVES

- To assess the level of knowledge regarding basic life support among selected Arts and Science College students.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding basic life support among selected Arts and Science College students.
- To find out the association between the pre-test knowledge level regarding basic life support and selected demographic variables.

## 4. HYPOTHESIS

**H<sub>1</sub>:** There is a significant increase in the level of knowledge regarding basic life support among selected Arts and Science college students after the structured teaching programme.

**H<sub>2</sub>:** There is a significant association between pre-test knowledge regarding basic life support among selected Arts and Science college students with selected demographic variables.

## 5. METHODS AND MATERIALS

**5.1 Study Design and Setting:** The study employed a quantitative pre-experimental one-group pre-test and post-test design. The setting was PSV Arts and Science College, Mullodai, Bahour, Puducherry.

**5.2 Participants:** A sample of 80 students was selected using non-probability convenience sampling technique. Inclusion criteria included undergraduate students (BBA, BCA, B.Com., B.Sc.) who were willing to participate.

**5.3 Instrument:** Data were collected using a structured questionnaire consisting of demographic variables and 30 knowledge-based items on BLS, validated by experts.

**5.4 Procedure:** A pre-test was conducted, followed immediately by a structured teaching programme on BLS (including PowerPoint, video, and demonstration with a mannequin). A post-test was administered one week later using the same questionnaire.

## 6. RESULTS:

### Section A: Demographic Variables

Most participants were aged 17-19 years (82.5%), male (55%), Hindu (93.8%), first-year students (65%), from rural areas (58.8%), and had prior CPR knowledge (56.3%).

### Section B: Pre-test Knowledge

**Table 1: Pre-test Knowledge Level (N=80)**

| Level of knowledge  | Frequency ( n ) | Percentage ( % ) |
|---------------------|-----------------|------------------|
| Inadequate          | 66              | 82.5             |
| Moderately adequate | 11              | 13.8             |
| Adequate            | 3               | 3.8              |
| <b>Total</b>        | <b>80</b>       | <b>100</b>       |

Mean pre-test score:  $11.28 \pm 4.34$ .

### Section C: Post-test Knowledge

**Table 2: Post-test Knowledge Level (N=80)**

| Level of knowledge  | Frequency (n) | Percentage (%) |
|---------------------|---------------|----------------|
| Inadequate          | 0             | 0.0            |
| Moderately adequate | 28            | 35.0           |
| Adequate            | 52            | 65.0           |
| <b>Total</b>        | <b>80</b>     | <b>100</b>     |

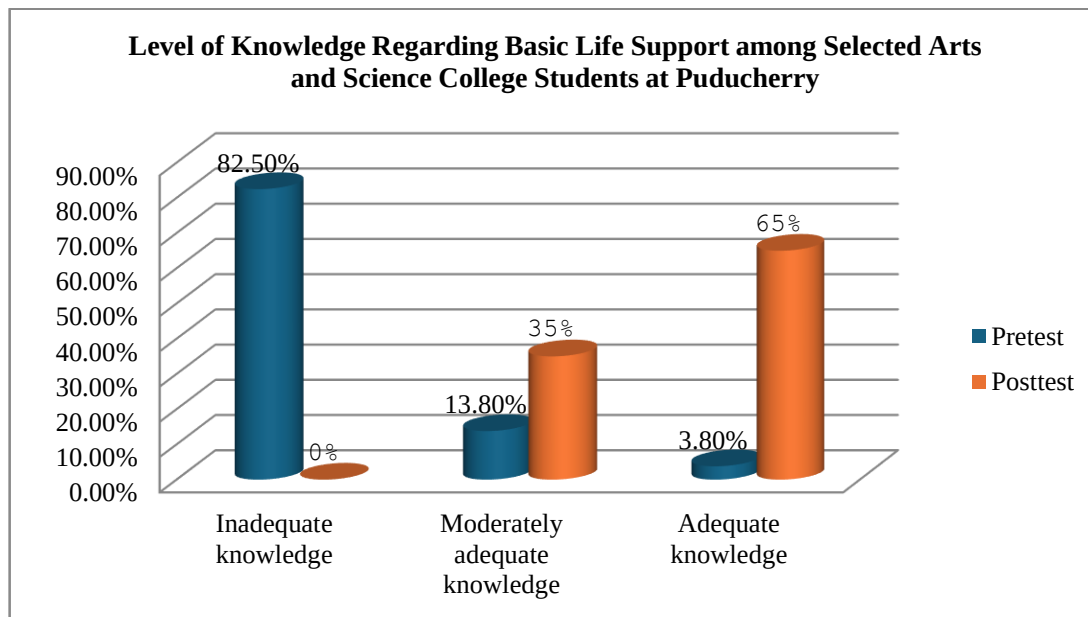
Mean post-test score:  $23.23 \pm 4.22$ .

### Section D: Effectiveness of STP

**Table 3: Comparison of Pre-test and Post-test Scores**

| Knowledge Score | Mean  | SD   | Mean Difference | t- value | df | p- value |
|-----------------|-------|------|-----------------|----------|----|----------|
| Pre-test        | 11.28 | 4.34 | 11.95           | 18.02    | 79 | <0.001*  |
| Post- test      | 23.23 | 4.22 |                 |          |    |          |

Significant at  $p < 0.05$ .



**Figure 1 : Comparison of pre-test and post- test knowledge regarding BLS among Arts and Science students.**

### Section E: Association

Significant associations found with religion ( $\chi^2=11.434$ ,  $p=0.022$ ), mother's education ( $\chi^2=15.421$ ,  $p=0.017$ ), and prior CPR knowledge ( $\chi^2=6.303$ ,  $p=0.043$ ). Other variables were non-significant.

## DISCUSSION:

The findings demonstrate that a structured teaching programme significantly enhances BLS knowledge among arts and science college students. This aligns with previous research highlighting the superiority of structured educational interventions. The high rate of adequate knowledge post-intervention suggests that the programme effectively bridged the knowledge gap.

## LIMITATION OF THE STUDY:

The study was limited to one arts and science college in Puducherry, which may limit the generalizability of the findings. The study measured only knowledge and did not assess skill performance or long-term retention.

## IMPLICATIONS FOR NURSING RESEARCH:

1. Further studies can be carried out with larger samples and in different settings for better generalization.
2. Longitudinal studies can examine retention of knowledge and actual practice of BLS skills.
3. Comparative studies may be conducted between structured teaching and other teaching methods.

## CONCLUSION:

This study concluded that the structured teaching programme was highly effective in improving the knowledge of arts and science college students regarding Basic Life Support. The statistically significant improvement confirms that structured teaching is a powerful method of health education. Structured teaching programmes can be considered a simple, economical, and efficient strategy for promoting emergency preparedness.

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