A STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIOPULMONARY RESUSCITATION AMONG FIRST-YEAR B.Sc. NURSING STUDENTS AT RVS COLLEGE OF NURSING, KANNAMPALAYAM, COIMBATORE

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ABSTRACT

Sudden cardiac arrest continues to be a major global public health concern, where timely intervention is critical for survival. This study investigated the impact of a structured teaching programme on the cardiopulmonary resuscitation (CPR) knowledge of first-year B.Sc. Nursing students at RVS College of Nursing, Kannampalayam. A quasi-experimental one-group pre-test and post-test design was employed. Thirty students were selected through convenience sampling and assessed using a standardized questionnaire before and after the intervention. The mean pre-test score was 8.4 (SD = 2.9), which increased to 15.6 (SD = 1.7) in the post-test. Paired t-test analysis demonstrated that this improvement was statistically significant (t = 17.22, p < 0.05). The results suggest that the structured teaching programme effectively enhanced CPR knowledge among the participants.

Keywords: Nursing students, structured teaching programme, cardiopulmonary resuscitation, knowledge.

INTRODUCTION

Health is acknowledged as a fundamental human right, and the ability to respond efficiently during emergencies is crucial for ensuring equitable health outcomes. **Sudden cardiac arrest (SCA)**, defined as the abrupt cessation of cardiac activity, consciousness, and pulse, is a leading cause of mortality worldwide. Early initiation of **cardiopulmonary resuscitation (CPR)** and prompt defibrillation significantly improve survival

chances. According to the **American Heart Association (2024)**, the survival rate to hospital discharge after out-of-hospital cardiac arrest (OHCA) in the U.S. is around 9.1%, reflecting trends from 2015 to 2022, with a temporary decline during the COVID-19 pandemic. In Ireland, bystander CPR rates reached 85% in 2023; however, survival to hospital discharge remained low at 8.4%. Across Europe, OHCA occurs at rates between 27 and 91 per 100,000 people annually, with survival rates ranging from 0% to 18%.

Despite improvements, gaps remain in CPR knowledge, training, and performance quality. In India, only 17% of first-year medical students had formal basic life support training, although 95% were aware of CPR. Nursing education is particularly important, as nurses often act as first responders in clinical and community settings. Recent research from **Jammu & Kashmir (2024)** revealed that many nursing students have below-average to average knowledge of CPR.

Structured teaching programmes (STPs) have been shown to enhance CPR knowledge among healthcare students. For example, a study in **Dehradun (2023)** demonstrated notable improvements in students' CPR knowledge following an STP. In this context, the present study aimed to evaluate the effectiveness of a structured teaching programme in improving CPR knowledge among first-year B.Sc. Nursing students at RVS College of Nursing, Kannampalayam, Coimbatore.

STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of a structured teaching programme on CPR knowledge among first-year B.Sc. Nursing students at RVS College of Nursing, Kannampalayam, Coimbatore.

OBJECTIVES

1. To assess pre-test and post-test knowledge of CPR among first-year B.Sc. Nursing students.
2. To compare knowledge scores before and after the structured teaching programme.
3. To examine associations between post-test knowledge scores and selected demographic variables.

ASSUMPTIONS

1. Higher knowledge levels are expected to support more effective emergency-care behavior.
2. First-year B.Sc. Nursing students may have limited initial knowledge of CPR.
3. Structured teaching programmes can improve CPR knowledge in these students.

DELIMITATIONS

1. The study was limited to first-year B.Sc. Nursing students at RVS College of Nursing, Kannampalayam.
2. The sample included 30 students selected via convenience sampling.
3. Only knowledge was assessed; practical skills were not evaluated.
4. The post-test was conducted shortly after the intervention; long-term retention was not measured.

METHODOLOGY

A quasi-experimental, one-group pre-test and post-test design was used to evaluate the effectiveness of a structured teaching programme on CPR knowledge among first-year B.Sc. Nursing students at RVS College of Nursing, Kannampalayam, Coimbatore. Thirty students were selected using non-probability convenience sampling.

Conceptual Framework: Albert Bandura's Social Learning Theory guided the study, emphasizing learning through observation, imitation, and feedback. The structured teaching programme allowed students to observe CPR demonstrations, practice under guidance, and receive reinforcement through post-test evaluation. Baseline knowledge was assessed in the pre-test, followed by the teaching intervention and a post-test to measure knowledge acquisition.

Data Collection: A structured questionnaire covering demographics and CPR knowledge was used, validated by nursing experts. Informed consent was obtained prior to data collection. The intervention included a PowerPoint presentation and live CPR demonstration. The post-test was conducted seven days later to assess knowledge improvement.

Data Analysis: Descriptive statistics (frequency, percentage, mean, standard deviation) summarized the data. Inferential statistics, including paired t-test for pre- and post-test comparison and chi-square test for associations with demographic variables, were applied. Ethical considerations, including voluntary participation, confidentiality, and informed consent, were strictly followed.

RESULTS

The study included 30 first-year B.Sc. Nursing students: 22 (73%) females and 8 (27%) males. Most participants identified as Hindu (83%), followed by Christian (13%) and Muslim (4%). Prior knowledge of CPR was obtained from books (53%), media (43%), and school (4%). All students expressed interest in nursing.

Pre-test results indicated limited CPR knowledge, with a mean score of 8.6 (SD = 2.9) out of 20, representing below-average understanding. Following the structured teaching programme, post-test scores improved significantly, with a mean of 16.2 (SD = 1.7). Paired t-test analysis confirmed the improvement was statistically significant (t = 18.45, $p < 0.05$), indicating the intervention's effectiveness.

Chi-square analysis revealed no significant relationship between post-test scores and demographic variables such as sex, religion, or prior CPR knowledge source ($p > 0.05$), suggesting the programme was equally effective across all participant groups.

**Table 1: Pre-Test and Post-Test Knowledge Scores of First-Year B.Sc. Nursing Students (N=30)**

Knowledge Score	Mean	Standard Deviation	t-value	Significance (p)
Pre-Test	8.6	2.9	18.45	<0.05*
Post-Test	16.2	1.7		

*Significant at $p < 0.05$

Graph 1: A bar graph illustrating the mean pre-test and post-test knowledge scores of students clearly shows the substantial increase in knowledge after the intervention. The X-axis represents the pre-test and post-test, while the Y-axis represents the mean score.

Pre test Vs post test CPR knowledge score
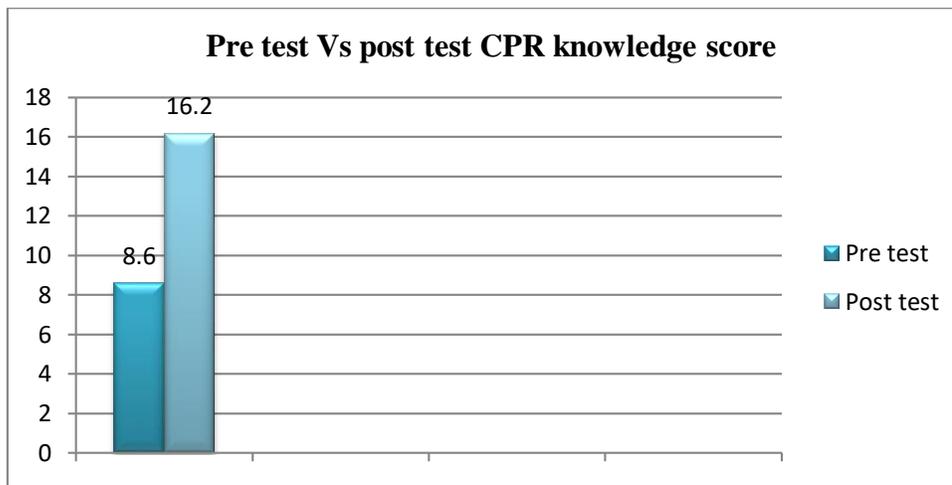
Graph 2: A pie chart displaying the sources of CPR knowledge before the intervention highlights that more than half of the students had learned about CPR from books, followed by media, and very few from school.
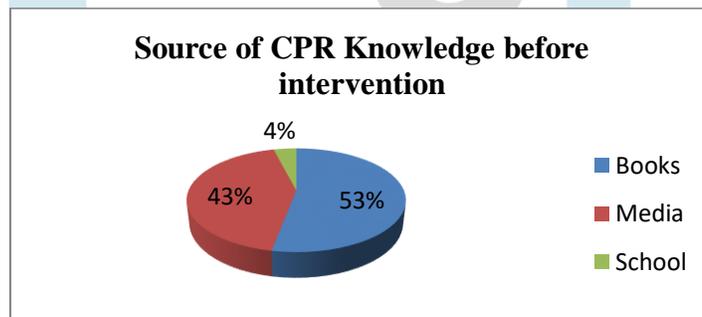
These results indicate that the structured teaching programme was highly effective in improving the CPR knowledge of first-year B.Sc. Nursing students, regardless of demographic differences.

DISCUSSION

The findings of this study demonstrate a significant improvement in CPR knowledge among first-year B.Sc. Nursing students following the structured teaching programme, with mean scores rising from 8.4 at baseline to 15.6 post-intervention. These results align with similar research in comparable contexts. For instance, Koranga et al. (2023) observed enhanced CPR knowledge among undergraduate students in Uttarakhand after an educational intervention. Likewise, Devi and Kumari (2024) reported below-average pre-intervention CPR knowledge among nursing students in Jammu & Kashmir, highlighting the widespread need for structured education. Globally, studies emphasize the importance of targeted CPR training, as both awareness and practical competence remain suboptimal among healthcare students and the general population. The present study underscores the effectiveness of structured teaching programmes in improving CPR knowledge and reinforces their value in nursing education.

CONCLUSION

Structured teaching programmes are effective in significantly enhancing CPR knowledge among first-year B.Sc. Nursing students. The observed improvement in post-test scores supports the incorporation of structured CPR training early in nursing curricula to strengthen students' preparedness for emergency situations.

LIMITATIONS

1. The small sample size (n = 30) and use of convenience sampling may limit the generalizability of the findings.
2. Only theoretical knowledge was evaluated; practical CPR skills were not assessed.
3. Post-test assessment was conducted shortly after the intervention, so long-term knowledge retention was not examined.
4. The study was conducted at a single institution, which may restrict the applicability of results to other settings.

IMPLICATIONS

- **Nursing Practice:** Structured teaching programmes can be implemented in both clinical and community settings to improve nursing students' emergency response capabilities.
- **Nursing Education:** Early integration of CPR training in nursing curricula, including hands-on practice and simulation exercises, is recommended to strengthen skill acquisition.
- **Administration:** Nursing institutions and hospitals should allocate resources for regular CPR training, simulation exercises, and refresher courses to maintain competency.
- **Research:** Future studies should investigate long-term retention of CPR knowledge, practical skill performance (compressions and ventilations), and compare different teaching methods. Multi-center research could enhance the generalizability of findings.

RECOMMENDATIONS

- Conduct similar studies with larger, multi-center samples.
- Compare the effectiveness of various teaching methods, such as video-assisted instruction versus simulation-based learning.
- Include longitudinal follow-up to assess knowledge retention and practical skill proficiency.
- Incorporate hands-on training with manikins to reinforce learning.

CONFLICT OF INTEREST

The study was conducted independently, without external influence or bias affecting the research process or outcomes.

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