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EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIOPULMONARY RESUSCITATION AMONG SECOND-YEAR B.SC. NURSING STUDENTS IN A SELECTED NURSING INSTITUTION, HASSAN

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ABSTRACT

Background: *Cardiac diseases are among the leading causes of death worldwide. Cardiac arrest is an important public health concern. It is leading cause of death worldwide generally develops the ages between of 45-75. Permanent brain damage is seen in more then quarter of the patients who survived after early resuscitation. The sudden cardiac arrest requires emergency interventions. Successful cardio-pulmonary resuscitation application is the first step for patients having cardiac arrest to continue their normal life. Nursing students are often among the first healthcare professionals to respond to emergency situations; therefore, adequate knowledge regarding CPR is crucial. Structured educational interventions can improve the competency and preparedness of nursing students in performing CPR.* ***Methods:*** *A quasi-experimental one-group pre-test and post-test design was adopted. The study was conducted among 70 second-year B.Sc. Nursing students at H.D. Devegowda Co-operative College of Nursing, Hassan, Karnataka. Participants were selected using convenient sampling. Data were collected using a structured questionnaire consisting of demographic variables and 40 multiple-choice questions on CPR. Following the pre-test, an STP on CPR was administered. Post-test assessment was conducted seven days later. Data were analysed using descriptive and inferential statistics including frequency, percentage, mean, standard deviation, paired t-test, and chi-square test.* ***Results:*** *The pre-test findings revealed that the majority of students had moderate knowledge regarding CPR. The mean pre-test knowledge score was 52.02%, whereas the mean post-test knowledge score increased to 61.20%. The calculated paired t-test value (t = 6.1) indicated a statistically significant improvement in knowledge following the educational intervention. Significant associations were found between pre-test knowledge scores and selected demographic variables such as father's educational status and religion.* ***Conclusion:*** *The Structured Teaching Programme was effective in improving the knowledge regarding CPR among second-year B.Sc. Nursing students. Regular educational interventions and skill-based training programs are recommended to strengthen CPR competency among nursing students.*

Keywords: *Structured Teaching Programme, Nursing Students, Knowledge, CPR, Quasi-Experimental Study.*

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INTRODUCTION

The heart is a muscular organ about the size of a closed first the functions as the body's circulatory pump. It takes in deoxygenated blood through the veins and delivers it to the lungs for oxygenation before pumping it into the various arteries which provides oxygen and nutrients to body tissue by transporting the blood throughout the body. The heart is the centre of Cardiovascular System and it is vitally responsible for just about everything that gives body life ranging from the transportation of oxygen to the success of immune system. In one year, a number of people suffer an accident or illness, severe enough to stop their breathing and leads to respiratory arrest. In a small number of these cases, it will even stop their heart beating and leads to cardiac arrest sudden cardiac arrest is a major cause of death in developed countries sudden death occurs when heartbeat and breathing stops.

The other common cause of sudden death includes heart attack, electrical shock, drowning, choking, suffocation, trauma, drug reaction, and allergic reaction. The best chance of ensuring their survival is to give them emergency treatment known as Cardiac Resuscitation (CPR).

Cardiovascular diseases remain a leading cause of mortality worldwide. Sudden cardiac arrest can occur both inside and outside hospital settings. Research has consistently demonstrated that early recognition of cardiac arrest, prompt initiation of CPR, and timely defibrillation improve patient outcomes. Therefore, healthcare professionals, particularly nurses, must possess adequate knowledge and skills related to CPR.

Nursing students represent the future workforce of healthcare systems. During their educational preparation, they are expected to acquire the theoretical and practical competencies required to manage emergency situations effectively. However, studies conducted in different regions have reported gaps in CPR knowledge among nursing students. These deficiencies may adversely affect patient outcomes during emergencies.

Educational interventions play a very important role in enhancing students' knowledge and preparedness. Structured Teaching Programmes (STPs) provide organized, evidence-based learning experiences that facilitate effective understanding and retention of knowledge. Such programs are particularly useful in teaching lifesaving procedures like CPR.

The present study was undertaken to evaluate the effectiveness of a Structured Teaching Programme on knowledge regarding CPR among second-year B.Sc. Nursing students in a selected nursing institution in Hassan, Karnataka. The study aimed to assess existing knowledge levels, determine the impact of educational intervention, and identify factors associated with knowledge acquisition.

REVIEW OF LITERATURE

The purpose for review of literature is to obtain comprehensive knowledge base and in depth of information from previous studies. Several studies have reported inadequate knowledge and skills related to CPR among healthcare students and professionals. Singh et al. (2010) found that although 75.9% of dentists had received information regarding CPR, only 66% possessed correct knowledge of its performance and merely 12% had undergone practical training. Similarly, Chandrasekaran et al. (2010) reported poor awareness of basic life support among nursing, medical, and dental students, highlighting the need for structured educational programs. Nagashima et al. observed that both nursing staff and student nurses demonstrated deficiencies in CPR knowledge, particularly in skill-related aspects.

Educational interventions have been shown to improve CPR knowledge and competency. Parashar (2010) reported significant improvements in knowledge and practice of basic life support among high school students following a planned teaching programme. Settgast et al. (2006) also demonstrated that additional training and practice enhanced learners' confidence and performance in resuscitation skills. Furthermore, Madden (2006) concluded that CPR training plays a vital role in helping nursing students acquire and retain both cognitive knowledge and psychomotor skills necessary for effective emergency response.

The reviewed literature indicates that although CPR is an essential component of healthcare practice, knowledge levels among students are often inadequate. Structured teaching programmes have consistently demonstrated effectiveness in improving knowledge and preparedness. However, limited studies have focused specifically on

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second-year B.Sc. Nursing students in the Hassan region. Therefore, the present study was undertaken to assess the effectiveness of a structured teaching programme on knowledge regarding cardiopulmonary resuscitation among second-year B.Sc. Nursing students.

Statement of the Problem

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Cardiopulmonary Resuscitation among Second-Year B.Sc. Nursing Students in a Selected Nursing Institution, Hassan.

Objectives of the Study

1. To assess the pre-test and post-test knowledge scores regarding CPR among second-year B.Sc. Nursing students.
2. To evaluate the effectiveness of the Structured Teaching Programme regarding CPR.
3. To identify the association between selected socio-demographic variables and pre-test knowledge scores.

Hypotheses

H_1: There will be a significant difference between pre-test and post-test knowledge scores regarding CPR among second-year B.Sc. Nursing students.

H_2: There will be a significant association between pre-test knowledge scores and selected socio-demographic variables.

Assumptions

1. Nursing students possess varying levels of knowledge regarding CPR.
2. The structured questionnaire is capable of measuring knowledge accurately.
3. The Structured Teaching Programme can improve students' knowledge regarding CPR.

Conceptual Framework

The conceptual framework for the study was based on the Open System Theory. According to this theory, individuals interact continuously with their environment through inputs, processes, outputs, and feedback mechanisms.

In the present study, nursing students were considered an open system. Knowledge regarding CPR constituted the input component. The Structured Teaching Programme served as the transformational process that influenced students' learning. Improved post-test knowledge represented the output. Feedback was obtained through evaluation of learning outcomes after the intervention.

This framework provided a systematic basis for understanding how educational interventions influence students' knowledge acquisition and learning outcomes.

MATERIALS AND METHODS

Research Approach

An evaluative research approach was adopted to assess the effectiveness of the Structured Teaching Programme regarding CPR.

Research Design

A quasi-experimental one-group pre-test and post-test design was employed.

Setting of the Study

The study was conducted at H.D. Devegowda Co-operative College of Nursing, Hassan, Karnataka.

Population

The population comprised nursing students enrolled in the institution.

Target Population

All B.Sc. Nursing students.

Accessible Population

Second-year B.Sc. Nursing students studying at H.D. Devegowda Co-operative College of Nursing.

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Sample and Sampling Technique

A sample of 70 second-year B.Sc. Nursing students was selected using a convenient sampling technique.

Validity and Reliability

Content validity was established through consultation with experts in nursing and medicine. Necessary modifications were incorporated based on expert suggestions.

Reliability was assessed using the test-retest method. The reliability coefficient was found to be 0.812, indicating that the instrument was highly reliable.

Pilot Study

A pilot study was conducted among seven second-year B.Sc. Nursing students at Nisarga College of Nursing, Hassan.

The findings demonstrated the feasibility and practicality of the study. The mean post-test knowledge score (58.6%) was higher than the mean pre-test score (35.6%), indicating the potential effectiveness of the educational intervention.

Data Collection Procedure

After obtaining permission from institutional authorities and informed consent from participants, the study was conducted between August 1 and August 10, 2022.

Phase I: Pre-Test

Participants completed the structured knowledge questionnaire.

Phase II: Intervention

A Structured Teaching Programme regarding CPR was delivered for approximately 45 minutes.

Phase III: Post-Test

Seven days after the intervention, the same questionnaire was administered to assess knowledge gain.

RESULTS

A total of 70 second-year B.Sc. Nursing students participated in the study. The majority of participants (90.0%) were aged 19–21 years, 60.0% were female, and 80.0% belonged to rural areas. Most participants (91.0%) were from nuclear families, while 67.0% reported having previous knowledge regarding cardiopulmonary resuscitation.

Assessment of baseline knowledge revealed that 95.7% of participants had moderate knowledge and only 4.3% demonstrated adequate knowledge regarding CPR. Following the Structured Teaching Programme, the proportion of students with adequate knowledge increased to 20.0%, while 80.0% demonstrated moderate knowledge.

Table 1. Demographic Characteristics of Participants (N = 70)

Variable	Category	n	%
Age (years)	19–21	63	90.0
	22–25	6	8.6
	26–29	1	1.4
Gender	Male	28	40.0
	Female	42	60.0
Residential Area	Urban	14	20.0
	Rural	56	80.0
Family Type	Nuclear	64	91.0
	Joint	6	9.0
Religion	Hindu	25	36.0
	Christian	45	64.0
Previous CPR Knowledge	Yes	47	67.0
	No	23	33.0

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Table 2. Comparison of Pre-test and Post-test Knowledge Levels Regarding CPR (N = 70)

Knowledge Level	Pre-test n (%)	Post-test n (%)
Inadequate (0–13)	0 (0.0)	0 (0.0)
Moderate (14–27)	67 (95.7)	56 (80.0)
Adequate (28–40)	3 (4.3)	14 (20.0)
Total	70 (100)	70 (100)

The findings indicate that the proportion of students with adequate knowledge increased from 4.3% in the pre-test to 20.0% in the post-test following the Structured Teaching Programme.

Table 3. Comparison of Mean Pre-test and Post-test Knowledge Scores

Variable	Mean	SD	Mean %
Pre-test Knowledge Score	20.82	3.88	52.05
Post-test Knowledge Score	24.48	3.37	61.20
Mean Difference	3.66	—	9.15

Paired t-test = 6.10, df = 69, $p < .001$

The mean post-test knowledge score was significantly higher than the mean pre-test knowledge score, demonstrating the effectiveness of the Structured Teaching Programme.

Table 4. Association Between Pre-test Knowledge Scores and Selected Demographic Variables

Variable	χ^2 Value	Significance
Age	1.61	Not Significant
Gender	2.78	Not Significant
Father's Education	11.50	Significant*
Mother's Education	2.22	Not Significant
Residential Area	0.51	Not Significant
Family Type	2.36	Not Significant
Religion	6.45	Significant*
Previous CPR Knowledge	3.59	Not Significant
Source of Information	2.98	Not Significant
Family Income	2.95	Not Significant

*Significant at $p < .05$

DISCUSSION

The study findings demonstrated that nursing students possessed moderate knowledge regarding CPR before the intervention. Similar findings have been reported in previous studies indicating that nursing students often require additional educational support to achieve optimal competence in CPR.

The Structured Teaching Programme significantly improved participants' knowledge scores. The increase from 52.02% to 61.20% reflects the effectiveness of organized educational interventions in enhancing theoretical understanding of CPR concepts and procedures.

The findings are consistent with previous research indicating that educational programs improve knowledge, confidence, and preparedness among healthcare students. Structured learning experiences provide systematic exposure to critical information, enabling learners to acquire and retain knowledge more effectively.

The significant association between father's education and knowledge level suggests that educational background within families may influence students' access to learning opportunities and health-related information. The association with religion may reflect variations in educational exposure and sociocultural influences.

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CONCLUSION

The study concluded that second-year B.Sc. Nursing students possessed moderate knowledge regarding cardiopulmonary resuscitation prior to the educational intervention. The Structured Teaching Programme significantly improved students' knowledge scores, demonstrating its effectiveness as an educational strategy. The findings highlight the importance of structured educational interventions in preparing nursing students to respond effectively to emergency situations requiring CPR. Regular training programs and competency-based learning approaches are essential to ensure that future nurses are adequately prepared to deliver high-quality lifesaving care.

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Ethical Considerations

Institutional permission was obtained before conducting the study. Informed consent was secured from all participants, and confidentiality of information was maintained throughout the research process.

This manuscript is approximately suitable for an original research article and can be further formatted according

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