**EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIO PULMONARY RESUSCITATION AMONG STUDENTS OF PPG COLLEGE OF ARTS AND SCIENCE, COIMBATORE**.



**By**

**Reg. No: 301711102**

**A DISSERTATION SUBMITTED TO THE TAMIL NADU**

**Dr. M. G. R. MEDICAL UNIVERSITY, CHENNAI IN**

**PARTIAL FULFILLMENT OF REQUIREMENT**

**FOR THE DEGREE OF MASTER OF**

**SCIENCE IN NURSING**

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**APPROVED BY THE DISSERTATION COMMITTEE ON OCTOBER 2018**

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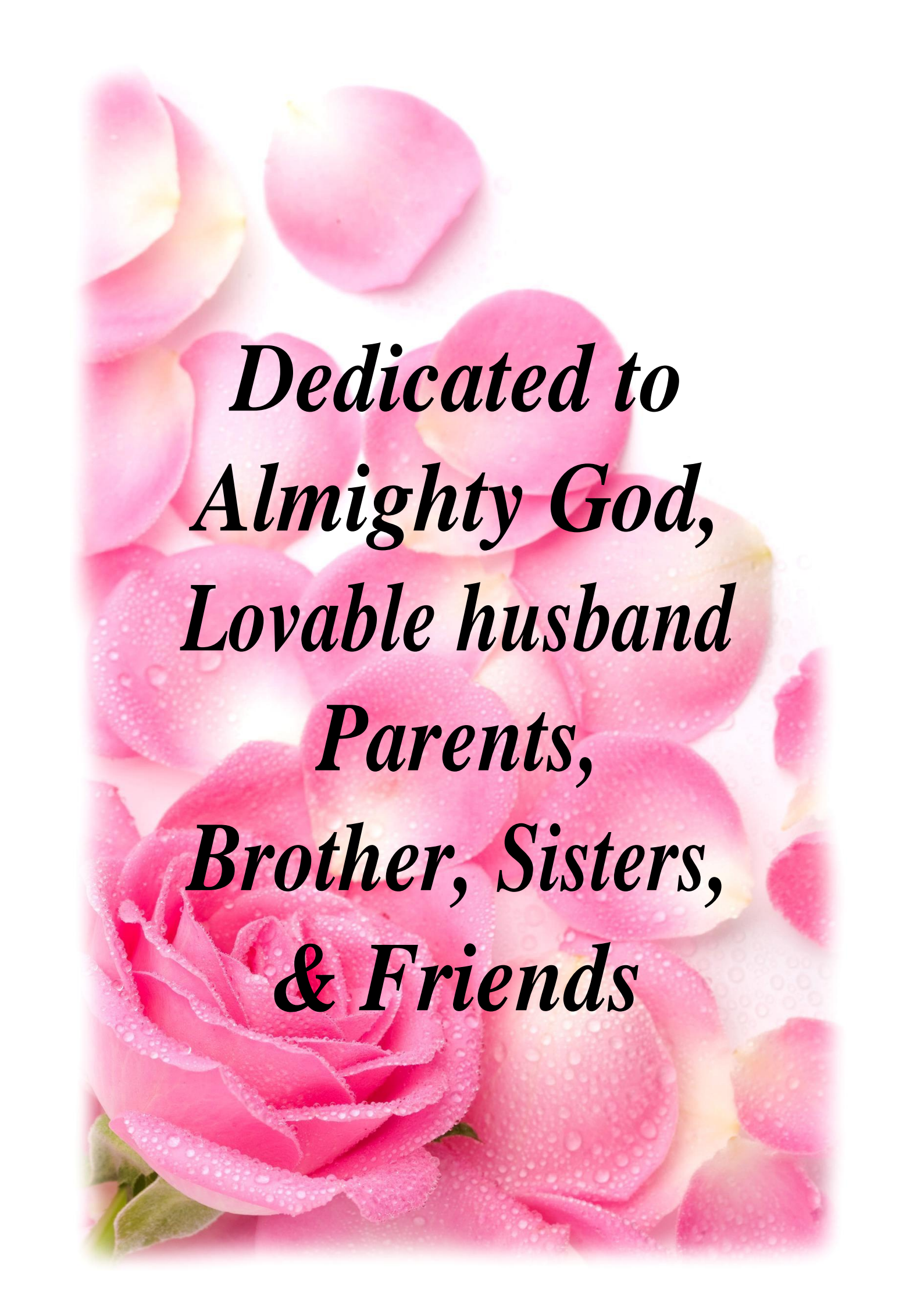PPG College of Nursing,
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*Dedicated to Almighty God, Lovable husband Parents, Brother, Sisters, & Friends*

# ACKNOWLEDGEMENT

*Gratitude can never be expressed in words, but this is only a deep perception*

*which makes the words to flow from one's inner heart*

I bow in reverence to the **Lord Almighty**, the foundation of the knowledge and wisdom whose salutary benign benison enabled me to achieve this target.

I would do injustice, if I fail to thank my Husband **Mr.Rajaseker** and my mother **Mrs.Thilagavathy** and Brother **Mr.sankara narayanan** and my friend for the psychological and economical support for completing this study successfully. Words are beyond expression for the commendation and meticulous care, fervent prayers of **my parents** and **my sisters** for nurturing my cherished dream into a reality through their continuous challenging encouragements.

I am grateful to **Dr. L. P. Thangavelu, F.R.C.S.,** chairman and **Mrs. Shanthi Thangavelu, M.A.,** Correspondent, P.P.G groups of Institutions, Coimbatore who helped us in making the project a great success.

It is my long felt desire to express my profound gratitude and exclusive thanks to **Prof. Dr. P. Muthulakshmi, M.Sc(N)., M.Phil., Ph.D.,** Principal, Professor And Head Of The Department Of Maternity Nursing. It is a matter of fact that without her esteemed suggestions, highly scholarly touch piercing insight at every stage of the study, this work could not have been presented in the manner it has been made. I also express my gratitude for her valuable guidance and help in the statistical analysis of data which is the core of the study.

It is a great privilege to express my sincere thanks and deep sense of indebtedness to my esteemed subject guide **Prof. R.Umamaheswari, M.Sc(N)** Department of medical surgical nursing, for her keen support, encouragement, guidance, valuable suggestions and constructive evaluation which have enabled me to shape this research as a worthy contribution.

I extend my thanks to the **Dissertation Committee Members** for their healthy criticism, supportive suggestions which molded the research.

I take this opportunity to thanks the **Experts** who have done the content

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# ABSTRACT

**Statement of the problem:** A study to assess the Effectiveness Of Structured Teaching Programme On Knowledge And Skill Regarding Cardio Pulmonary Resuscitation Among Students Of PPG College Of Arts And Science, Coimbatore. **Objectives**: 1.To asses the knowledge regarding cardio pulmonary resuscitation among students. 2. To assess the skill in performing cardio pulmonary resuscitation among students. 3. To determine the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students. 4. To reassess the knowledge and skill regarding cardio pulmonary resuscitation among students. 5.To identify the association between pretest knowledge and selected baseline variables. 6.To identify the association between pretest skill score and selected baseline variables. **Methodology:** The research design adopted for this study was a quasi–experimental one group pretest posttest design. Simple random sampling technique was used to select the samples. the sample comprised of 60 degree students of PPG college of arts and science, Coimbatore. **Result:** pre-test mean score of the student was 9.6 and post -test of the mean score was 25.5. And Standard deviation was 27.42. The obtained 't'-value was 3.170. and the mean pre-test skill score was 4.8, post-test skill score was 12.1. And Standard deviation was 16.729. The calculated value 2.413 Therefore it was concluded that there was significant gain in knowledge and skill through structured teaching programme. **Conclusion**: The study was conducted to assess the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of arts and science, Coimbatore. The knowledge and skill of the students gain knowledge who are getting after structured teaching programme. So the investigator rejects the null hypothesis and accepts the research hypothesis.

# CHAPTER-I

# INTRODUCTION

The heart is one of the most vital organs in the human body. The heart beats on an average 72 times per minute in an adult. It works 24 hours a day and 7 days a week. Our heart has a simple but important job. It supplies oxygen rich blood to all our body parts. If our heart stops pumping, oxygen does not reach other vital organs and they stop working. **Donald M, Matthew (2009)**

The heart is a hollow muscular organ. It is 10 cm and is about the size of ones own fist. It weighs about 225 grams in women and is heavier in men (about 310 grams).**Taber, Wilber C.et.al.,(2009)**

Cardiac arrest is a common medical emergency with grave consequences. Cardiac arrest occurs when the heart ceases to produce an effective pulse and fails to circulate blood throughout the body. It is manifested by loss of consciousness, and absence of pulse and blood pressure. The high mortality associated with it can be easily prevented most of the time by some very simple maneuvers and skills. **(Miller BF. Keane,2012)**

Coronary artery disease is the leading cause of sudden cardiac arrest. Approximately 60– 70% of sudden cardiac deaths are related to coronary artery disease. The other causes of cardiac arrest include smoking, lack of physical exercise, obesity, diabetes, previous heart attack and family history of cardiac diseases. **Zheng ZJ. et.al, (2013)**

CPR traditionally has integrated chest compressions and rescue breathing with the goal of optimizing circulations and oxygenation. Rescuer and victim characteristics may influence the optimal application of the components of CPR. Everyone can be a life saving rescuer for a cardiac arrest victim. CPR skills and their applications depends on the rescuer's training, experience and confidence.

Chest compressions are the foundations of CPR . All rescuer's regardless of training should provide chest compressions to all cardiac arrest victims .Because of their importance, chest compressions should be the initial CPR actions for all victims regardless of age. Rescuers who are able should add ventilations to chest

compressions. Highly trained rescuers working together should co ordinate their care and perform chest compressions as well as ventilations in a team based approach. Integrating the critical components of CPR

It has been estimated that more than 7,000,000 people die of sudden cardiac death per year worldwide. In India, the annual incidence of sudden cardiac death accounts for per 1000 population. Almost 2.6 million Indians are predicted to die due to coronary artery disease, in India by 2020. The incidence of sudden cardiac deaths is increased in the age group of 45-75 years. It is also seen that men have a higher incidence of cardiac arrest than females. **Clarence. W.(2012)**

Cardiac arrest results in the cessation of blood supply to the brain leading to depression of breathing as well. Thus this combination of no breathing and circulation causes generalized ischemia, within 4- 6 minutes. Resuscitation is the art of restoring life or consciousness of one apparently dead. Cardiopulmonary resuscitation (CPR) is a simple but effective procedure that allows almost anyone to sustain life in the early critical minutes after cardiac and respiratory arrest. Cardiopulmonary resuscitation involves chest compression, clearing of airway and breathing to normalize blood circulation to the brain and vital organs**. Hitt E.(2010)**

In 2010, the American Heart Association had re- arranged the A-B-C (Airway- Breathing- Compressions) to C-A-B (Compressions- Airway- Breathing). Previously, CPR training had emphasized the airway, breathing and circulation where a rescuer had to open the victims airway by tilting the head back, pinching the nose and breathing into the victims mouth and then give chest compressions. The A-B-C approach was causing delay in starting chest compressions, which is essential for circulation of oxygen rich blood throughout the body. The C-A-B approach allows the rescuer to begin the chest compression immediate**. Hitt E.(2010)**

Early bystander initiated CPR would improve the survival rate of out-of hospital sudden cardiac arrests. Students play an important role as bystanders on and off campus both now and in the future**. Chen ZQ. et.al.,(2014)**

Knowledge of BLS and practice of simple CPR techniques ensures the survival of the patient till experienced medical help arrives and in most cases that itself is sufficient for survival**. Steen PA.(2015**)

Basic CPR can be performed by a trained health care professional and by appropriately trained non- professionals. **Hitt. (2010)**

## NEED FOR THE STUDY

A cardiac arrest can occur at anytime and anywhere even when the health care professionals are not available. By the time the patient is shifted to the hospital it may be too late. If family members know how to give a CPR, it can save the life of the person. Only 1/3 of the adults who have an out of hospital cardiac arrest receive timely and appropriate care**. Chen ZQ. et.al.,(2014)**

CPR can double or triple the victim's chances of survival when commenced immediately. CPR to be taught to the general public because they are the ones available in the crucial minutes before health care professionals' arrives. **Hitt. (2010)**

Bystander CPR followed by advanced cardiac life support has been shown to be effective in the treatment of out-of-hospital sudden cardiac death both in terms of improving the long- term survival of such patients and their neurological outcome. **Chen ZQ. et.al.,(2014)**

Studies have shown that, in case of out- of- home cardiac arrest, bystanders, lay persons or family members attempt CPR in 14% to 45% of the time, and only half of bystanders perform CPR effectively. It was also found that when a cardiac arrest occurs in out of hospital setting, CPR was more commonly given by a bystander who has no connection to the victim than a member of his own family. This is because a stranger can remain calm and think clearly when compared to a family member. Only a minority of bystanders will initiate CPR when a family member collapses in the home. The main reason for not performing CPR was fear of failing. The study highlighted that CPR courses are not reaching to those most likely to be called upon to use this skill. **(Gallagher. EJ. et.al.,2015)**

Since the majority of cardiac arrests occur in an out-of hospital setting there is a strong need for widespread community-based CPR training programs.

The researcher assumes that structured teaching may provide necessary knowledge and skill to the college students who are brave and enthusiastic to perform a CPR when health care professionals are not available. Hence the researcher has

undertaken a study to determine the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of Arts and Science, Coimbatore.

**STATEMENT OF THE PROBLEM:**

A quasi experimental study to assess the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG college of arts and science, Coimbatore.

**OBJECTIVES OF THE STUDY:**

1. To assess the knowledge regarding cardio pulmonary resuscitation among students.

2. To assess the skill in performing cardio pulmonary resuscitation among students.

3. To determine the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students.

4. To reassess the knowledge and skill regarding cardio pulmonary resuscitation among students.

5. To identify the association between pretest knowledge and selected baseline variables.

6. To identify the association between pretest skill score and selected baseline variables.

**HYPOTHESIS:**

**H1:**   The mean post test knowledge score of students will be significantly higher than their mean pre test knowledge score at 0.05 level of significance.

**H2:**   The mean post test skill score of students will be significantly higher than their mean pre test skill score at 0.05 level of significance.

**H3:**   There will be a significant association between pre test knowledge and selected baseline variables at 0.05 level of significance.

**H4:** There will be significant association between pre test skill and selected baseline variables at 0.05 level of significance.

**OPERATIONAL DEFINITIONS:**

- **Effectiveness:** In this study, it refers to the change in knowledge score and skill score after structured teaching programme as measured by questionnaire and checklist.

- **Structured teaching programme:** In this study, it refers to a planned teaching strategy on cardio pulmonary resuscitation, which includes meaning, purposes, steps and complications of CPR.

- **Knowledge:** It refers to the understanding of students regarding cardio pulmonary resuscitation, as measured by a structured questionnaire.

- **Skill:** In this study, it refers to the ability of students to perform cardio pulmonary resuscitation as measured by a checklist.

- **Cardio pulmonary resuscitation:** In this study, it refers to an emergency procedure used to temporarily maintain blood oxygenation and tissue perfusion, as well as restore cardiac function, in a person who has suffered cardiopulmonary arrest.

- **Students:** In this study, it refers to candidates studying degree course in an Arts and Science college.

- **College:** In this study, it refers to an institution which offers degree course in Arts and Science, and located in Coimbatore.

**ASSUMPTIONS:**

The study is based on the following assumptions

1. CPR is a lifesaving procedure.

2. Knowledge and skill are required to perform CPR

3. The structured teaching programme may provide necessary knowledge and skill to the students regarding CPR.

**DELIMITATIONS:**

The study was delimited to:

- The degree students of PPG college of Arts and Science.

- Generalization of finding was delimited to the population studied.

- Period of data collection was 6 weeks.

# CHAPTER -II
# LITERATURE REVIEW

Review of literature refers to an extensive, exhaustive and systematic examination of publications relevant to the research project. The typical purpose for analyzing or reviewing existing literature is to generate research question to identify what is known and not known about a topic, to identify conceptual or theoretical tradition within the bodies of literature. The major goal of review of literature is to develop strong knowledge base to carry out research and other non-research scholarly activities in educational and clinical practice settings.

Based on the objectives of the study the literature from various sources were reviewed and arranged under the following sections:

**Section 1:** Importance of bystander initiated cardio pulmonary resuscitation

**Section 2:** Knowledge and skill of public regarding cardiopulmonary resuscitation.

**Section 3:** Effectiveness of structured teaching on knowledge and skill regarding cardio pulmonary resuscitation**.**

## Section 1: Importance of bystander initiated cardio pulmonary resuscitation

A study was done in Ontario city to identify the reaction of people if they witness someone collapsing. Households were randomly contacted and a questionnaire was administered. The result showed that 72% of subjects who witnessed a collapse at home called the police or ambulance when compared to 44% who witnessed a collapse on the street. Other first three actions in home collapse were checking for breathing (120 [28%]), checking for pulse (91 [21%]) and administering CPR (34[8%]). **Cheung BM, (2013)**

A study conducted by the division of emergency medical services, Washington, USA revealed that timelier and comprehensive arrest identification, encouragement and empowering of bystanders are needed to improve the out of hospital cardiac arrest survival. Arrest identification can be simplified so that bystanders can start CPR when a person is unconscious and not breathing normally.

Bystanders should initiate CPR with compressions and consider the addition of rescue breathing based on their CPR training and skills as well as special circumstances of the victim. **Bryan MN, Rachel R. (2014)**

A study conducted by the Swedish cardiac arrest registry involving over 17,000 patients with bystander-witnessed cardiac arrest found that CPR done by by-standers doubled the survival rate (6.2%) and CPR administered by health care professionals tripled the survival rate (10.8%) when compared to no bystander CPR (3.1%). The study concluded that victims of cardiac arrest have a higher chance of survival with bystander CPR**. Levy M.(2015)**

A study conducted in Sweden stressed the importance of bystander cardiopulmonary resuscitation (CPR) prior to the arrival of the emergency medical service. A qualitative method was applied to 19 bystanders who had performed CPR. In the analysis, five main categories and 14 subcategories emerged. The main categories were to have a sense of humanity, to have competence, to feel an obligation, to have courage and to feel exposed. **Vaillancourt C, Grimshaw J, (2015.)**

A study was conducted in Canada among 20 students to assess the importance of bystander initiated CPR. The findings of the study revealed that most cardiac victims collapsed in their homes (85%) and the event was witnessed only 50% of the time. Overall survival rates of out-of-hospital cardiac arrest rarely exceed 5%. While bystander CPR can increase survival of cardiac arrest victims up to four times, bystander CPR rates remain low in Canada (15%). **Vaillancourt C, Grimshaw J. et.al., (2016)**

**Section 2: Knowledge and skill of public regarding cardio pulmonary resuscitation.**

A study was conducted in Germany among family members of patients with cardiac disease to find the attitude towards CPR training and skill in performing CPR. A cross-sectional survey of 100 family members of patients with cardiac disease was conducted in a tertiary care emergency department over a period of 45 days. The most frequently reported barriers to perform CPR were fear of harming the patient, lack of knowledge and skill. Despite a presumed higher risk for sudden

cardiac death, most family members of patients with cardiac disease do not maintain skills in basic CPR. Health care professionals have a major responsibility to significantly alter this through education and routine recommendations to patients families**. Choi HJ.et.al.,(2009)**

A study was done among Chinese college students to assess the awareness and attitude towards cardiopulmonary resuscitation. Students were chosen by stratified cluster sampling technique. The study reported that 28% of students had heard about CPR, and only 3% of the respondents had attended a CPR course. The two major sources of information regarding CPR were television and books. Most respondents expressed a desire to learn CPR (77%), and were willing to disseminate knowledge regarding CPR (73%). The study concluded that efforts should be made to provide more convenient, effective and attractive ways for the public, especially students, to learn CPR**. Chen ZQ. et.al.,(2014)**

A research was conducted on 'Nurses knowledge and skill retention following cardiopulmonary resuscitation training: a review of the literature' by Hamilton R.Poor knowledge and skill retention following cardiopulmonary resuscitation training for nursing and medical staff has been documented over the past 20 years. Cardiopulmonary resuscitation training is mandatory for nursing staff and is important as nurses often discover the victims of in-hospital cardiac arrest. Many different methods of improving this retention have been devised and evaluated. However, the content and style of this training lack standardization. **Hamilton R.Poor(2013).**

A study was conducted in Hong Kong to evaluate the knowledge regarding cardio pulmonary resuscitation among the public. A telephonic interview was used to collect the data. Participants were men and women aged 16 years and older and were selected using random telephone dialing. The study found that knowledge regarding cardiopulmonary resuscitation knowledge was poor among the public. The degree of public preparedness in initiating cardio pulmonary resuscitation was very poor. The most common reason for not taking cardiopulmonary resuscitation training was lack of time. The study emphasized the need for intensified educational efforts and exploration of new approaches to improve the awareness**. Swor R, Domier R, (2010)**

A study was conducted to assess the performance of CPR by bystanders. A structured telephonic interview of adult bystanders of cardiac arrest victims were conducted two weeks after the incident. In 21.2% of patients, the bystander started CPR immediately, and in 33.6% of cases, someone started CPR before the arrival of emergency medical services. Common reasons that the bystander cited for not performing CPR were panic (37.5%), fear of failure (9.1%) and fear of hurting the patient (1.1%). Only 1.1% objected to perform mouth-to-mouth resuscitation. **(Platz E, Schealzle MD,et.al.2010)**

The acknowledged that CPR skill retention begins to decline very early. They have, with a review, recommended as early as 2-4 weeks, after training. From then on, periodic reviews of every 3-6 months until one year are recommended. This information is based on an in-depth review of research that makes specific reference to CPR skill retention, rather than knowledge retention. Discussion within the paper highlights the point that there is a distinction between skill and knowledge retention, as they are not synonymous with each other. The American Heart Association suggest knowledge retention decline at the same rate as skill retention. **Moser, Dracup and Coleman (2014)**

**Section 3: Effectiveness of structured teaching on knowledge and skill regarding cardio pulmonary resuscitation.**

A questionnaire with 20 questions regarding the awareness and skills involved in BLS was used by the authors to assess the levels of awareness to BLS and its practical knowledge. The aspects on which they were interrogated were about the abbreviation of Basic Life Support (BLS), Automated External Defibrillators (AED) and EMS(Emergency Medical Service), sequential steps in BLS, assessment and resuscitation techniques with regard to airway, breathing, circulation in unresponsive victims of different age groups, techniques regarding removal of foreign body obstruction, recognition of early signs of stroke and acute coronary syndrome. **Lynch B,et.al.,( 2010)**

A study was conducted to find the effectiveness of video assisted training on skill regarding CPR among lay persons. Video- assisted CPR training was conducted among laypersons who had not received CPR training during the recent 5 years. Skill was assessed immediately before, immediately after and 8 weeks after the CPR

training using a standardized checklist. The mean performance score for mouth-to-mouth ventilation was 0.24 right before the training, 1.58 right after the training and 0.95 eight weeks after the training. The mean performance scores for chest compression were 0.13, 1.79, and 1.40, right before, right after, and 8 weeks after the CPR training, respectively. The rates of successful mouth-to-mouth ventilation and compression were 11.9%, and 39.1%, respectively. **Hazinski MF.(2010)**

A study was done in Australia to assess the effectiveness of CPR training programme. Two hundred and eighty-five adults between 40 and 70 years old who had no CPR training within the past 5 years were assigned to an untrained control group. Another group was taught CPR using video based self-instruction for 30 minutes. Basic CPR skills were measured by instructor assessment and by a sensored manikin. The result showed that the assessment of unresponsiveness, calling of the emergency telephone number 911, provision of adequate ventilation, proper hand placement, and adequate compression depth was significantly better (t= 18.45, P < 0.05) for the trained group rather than the untrained controls. The trained subjects had a better overall performance and better ventilation performance than untrained subjects. The study concluded that older adults learned the fundamental skills of CPR with half an hour training. **Lynch B,et.al.,( 2010)**

A study was conducted in Dallas, USA to compare retention of skills learned by the traditional multi-hour training of cardiopulmonary resuscitation with those learned in an abbreviated (30 min) course among laypersons. The laypersons were randomized to either the traditional multi-hour group; or the 30-min course group. The skills were tested immediately after training and at 6 months after training. The study concluded that the 30-min course on cardiopulmonary resuscitation was effective as traditional multi-hour courses, even after 6 months. **Can JC. (2011)**

A study was done to find, whether hands-only CPR is effective as the traditional CPR. The bystander had to press hard and fast in the center of the chest, no ratios to remember, no mouth-mouth respiration and no fear of making a mistake. By hands- only CPR rescuers saved nearly a one third of cardiac arrest victims**. Florian E, Testori C. (2014)**

A study was conducted by the department of emergency medicine, Austria to find the effectiveness of new course design on CPR performance measures. The

standard and a new course design were compared with a prospective controlled study. Six months after the initial training, the confidence of the 66 participants were evaluated. The mean self-confidence was significantly higher in the interventional group than in the control group. The mean chest compression rate in the interventional group (98/min) was closer to the recommended 100 bpm than in the control group (110/min). The time taken for first chest compression (interventional group: 25s, control group: 36s) and time taken for first defibrillator shock (interventional group: 86s, control group: 92s) were significantly shorter in the interventional group. Furthermore, the interventional group participants were safer in handling the defibrillator and started with counter measures against developing shock. **Saraç L, Ahmet O. (2015)**

A study was conducted to investigate the extent to which Irish students acquire and retain CPR cognitive knowledge and psychomotor skills following CPR training. A quasi-experimental time series design was used. CPR knowledge was assessed by a multiple-choice assessment and psychomotor skills were assessed by observing CPR performance on a Resusci-Anne skill-meter manikin. The findings showed that there was an increase in knowledge and skill regarding CPR among students following training programme ($P < 0.05$). The study findings present strong evidence to support the critical role of CPR training in ensuring that student's progress to competent and confident responders in the event of a cardiac related emergency. **Madden C,(2015)**

Another study was conducted to compare the quality of resuscitation between those with a simplified chest compression- only CPR and those with a conventional CPR program. The participants were randomly assigned to either the 120 minute training program of chest compressions only CPR or the 180 minute training program of conventional CPR. Two hundred and twenty three participants were enrolled and 104 in each group completed the study. The result showed that a simplified chest compression only CPR program makes it possible for the general public to perform better than the conventional CPR program. **Nishiyama C,(2015)**

A study was done among 90 students (52 female and 48 male) of physical education and sports college, Turkey to evaluate the effectiveness of traditional, case-based, and web-based instructional methods on acquisition and retention of

CPR skills. Students were assigned randomly to traditional, case-based, and web-based instruction groups. The students were tested for their measurable and observable CPR skills by using a skill reporter manikin and skill observation checklist. The study found that the web- based instruction group performed poorer than the traditional and case-based instruction groups in "terms of compression rate, correct chest compressions, the hand positions, and the percentage of correct ventilations" ($p<.05$). **Lynn PR and Paul EP, (2016)**

A study was done to assess the prevalence and utility of citizen cardio pulmonary resuscitation training among adults aged 25 to 27 years in USA. Twenty-three per cent of the samples were CPR trained. Of these, 13 percent have encountered out-of- hospital cardiac arrests and 38 per cent reported of using their skills in such an emergency. **Robert J, Murphy.et.al., (2016)**

Another study was conducted to determine whether a trained rescuer could teach untrained bystanders to perform basic life support (BLS) during a simulated cardiac arrest. The volunteers were recruited from hospital ancillary staff and relatives of patients attending an emergency department. None had previous formal training in BLS. They were asked to perform BLS without instruction on mannequins. An instructor then gave training while performing BLS. The findings of the study showed that all the 51 volunteers improved in their performance after instruction. **Dare L, Davies P,(2016)**

**CONCEPTUAL FRAME WORK**

Nursing science is deeply involved in the body of knowledge essential to nursing research and practice. Identification of this knowledge base requires the development and recognition of concepts and theories specific to nursing.**potter PA, Perry GA. (2005).**

Conceptual frameworks are interrelated concepts or abstracts that are assembled together in some rational scheme by virtue of their relevance to a common theme. Each conceptual framework proposes a different view of the meta-paradigm concepts which provides clear description of variables, suggesting ways or methods to conduct the study and guiding the interpretation and integration of the significant findings**. Kozier B,Glenora E.(2008)**

In the present study, the investigator adopted a conceptual framework based on **Ludwig Von Bertalanffy's (1968)** General System theory.

According to this model, living systems are open because there is an ongoing exchange of matter, energy and information. In general system theory the systems are composed of both structural and functional components that interact within a boundary which filters the type and rate of exchange with the environment. A structure refers to the arrangement of parts at a given time whereas function is the process of continuous change in the system as matter; energy and information that are exchanged within the environment.

For survival, a system must achieve a balance internally and externally. Equilibrium depends on the systems ability to regulate input and output to achieve a balanced relationship of the interactive parts. The system uses various adaptation mechanisms to maintain equilibrium. Adaptation may occur through accepting or rejecting the matter, energy and information or by accommodating the input and modifying the system responses.

Ludwig open system theory focuses on three aspects;

1. Input

2. Throughput.

3. Output.

## 1. Input:

According to general system theory input refers to the matter, energy or information from the environment into the system. In this study, students of PPG college of Arts and Science and their age, gender, course of study, family history of cardiac diseases were considered as input.

## 2. Throughput

Throughput refers to the process by which matter, energy and information is modified or transformed within the system. In the present study, throughput was planned teaching program regarding cardio pulmonary resuscitation.

## 3. Output:

Output refers to matter, energy and information that are released from the system into the environment. In this study, output was the outcome of structured teaching i.e. changes in the level of knowledge and skill regarding cardiopulmonary resuscitation.

**INPUT**

**THROUGHPUT**

**OUTPUT**

Degree students of PPG College of arts and science

- Age
- Gender
- Course of study
- Family history of cardiac diseases
- Awareness regarding cardio pulmonary resuscitation
- Source of Knowledge regarding CPR

Structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation

Gain in knowledge and skill regarding cardio pulmonary resuscitation

No gain in knowledge and skill regarding cardio pulmonary resuscitation

Feed back

**FIGURE 2.1: CONCEPTUAL FRAME WORK BASED ON LUDWIG GENERAL SYSTEM THEORY (1968)**

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# CHAPTER -III
# METHODOLOGY

Research methodology is a way to solve the research problem systematically. It describes various steps that are generally adopted by the researcher in studying the research problem along with logic behind them and explain why he uses a particular method or technique so that research results are capable of being evaluated by him or by others.

Research methodology includes research approach, design, setting, population, sample and sampling technique, development and description of the tool, content validity, reliability, pilot study, procedure for data collection and plan for data analysis.

## RESEARCH APPROACH

An evaluative research approach was used to assess the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of Arts and Science, Coimbatore.

## RESEARCH DESIGN

The research design is an overall plan for obtaining answers to the research questions being studied and for handling some of the difficulties encountered during the research process. The research design adopted for this study was a quasi–experimental one group pretest- post test design.

$$O^1 \Rightarrow X \Rightarrow O^2$$

$O^1$= Asses the knowledge and skill of the student.
X= providing health education to the students.
$O^2$= evaluate the knowledge and skill after giving health education

**Figure 3.1: Schematic Representation of the research Design**
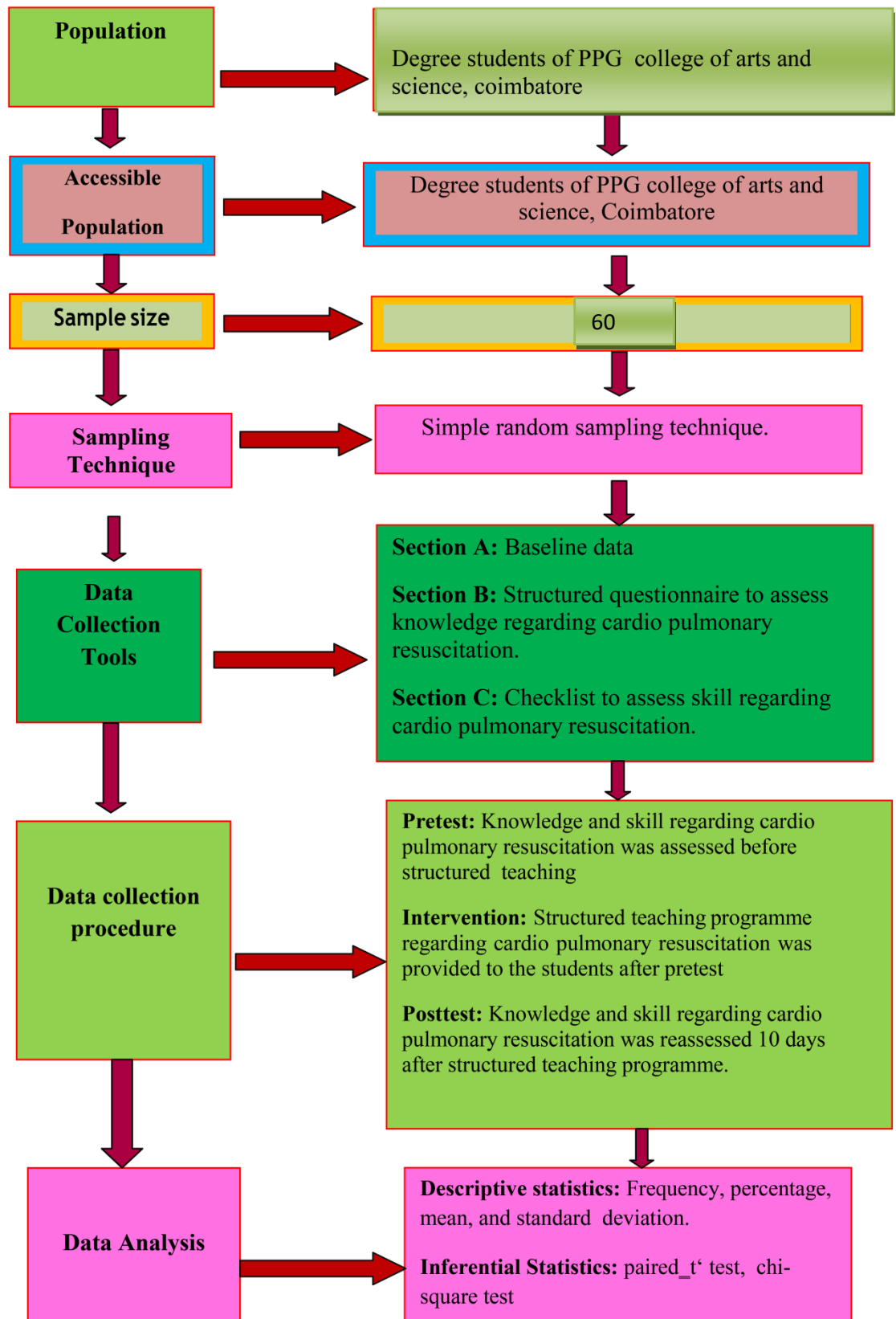
**Figure 3.2: Schematic Representation of the research methodology**

**VARIABLES**

Variables are qualities, properties or characteristics of persons, things or situation that changes or vary. Three types of variables were identified in this study. They were:

**1. Independent variable**

Independent variable is the variable that stands alone and is not dependent on any other. In this study, the independent variable was structured teaching regarding cardio pulmonary resuscitation.

**2. Dependent variable**.

Dependent variable is the variable that is dependent on or caused by another variable, the independent variable. In this study, the dependent variable was knowledge and skill regarding cardio pulmonary resuscitation.

**3. Extraneous variable.**

Any uncontrolled variable that greatly influences the results of the study is called an extraneous variable. In this study, the extraneous variables were age, gender, course of study, family history of cardiac diseases and previous knowledge regarding CPR.

**RESEARCH SETTING**

Research can be undertaken in a variety of settings which are specific places where information is gathered. The investigator has conducted the study in a PPG College of Arts and Science, Coimbatore. The college had pre- university and degree courses such as B.Sc., BCA, B.A and B.com. The geographical proximity, feasibility of conducting the study, availability of samples was considered while selecting the setting.

**POPULATION**

Population includes all possible that could be included in the research. In the present study the population was degree students of PPG college of arts and science, Coimbatore.

**SAMPLE SIZE**

A sample is a subset of population selected to participate in a research study. In the present study, the sample comprised of 60 degree students of PPG college of arts and science, Coimbatore.

**SAMPLING TECHNIQUE**

Sampling is the process of selecting a portion of the population to represent the entire population. Simple random sampling technique was used to select the samples.

```
┌──────────────────────┐
│  PPG colleges of Arts │
│     and science,      │
│      Coimbatore       │
└──────────────────────┘
           ↓
┌──────────────────────┐
│  Selected students in │
│  PPG  college of arts │
│     and science       │
└──────────────────────┘
           ↓
┌──────────────────────┐
│    Simple random      │
│  sampling technique   │
└──────────────────────┘
           ↓
┌──────────────────────┐
│   60 degree students  │
└──────────────────────┘
```
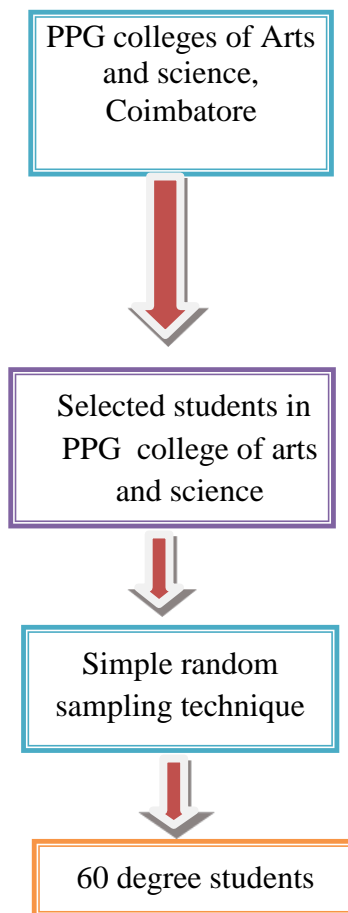
**Figure 3.3: Sampling technique**

**SAMPLING CRITERIA**

**Inclusion criteria**

- Candidates studying degree course in a PPG college of arts and science

- Candidates who are willing to participate in the study.

**Exclusion criteria**

- Students who had similar kind of training within 6 months

- Students who are not available at the time of data collection.

**DATA COLLECTION INSTRUMENT**

Data collection tools are procedures or instruments used by the researcher to observe or measure the key variables in the research problem. The instruments used in this study consisted of three sections:

**Section A:** Baseline data: age, gender, course of study, family history of cardiac diseases and awareness about CPR.

**Section B:** Structured questionnaire to assess the knowledge regarding cardio pulmonary resuscitation.

**Section C:** Checklist to assess the skills regarding cardio pulmonary resuscitation.

**Development of the tool**

The tool was developed based on the review of relevant literature, discussion with experts and experience of the investigator.

**PREPARATION OF BLUEPRINT**

The investigator prepared a blueprint before constructing the questionnaire. The items were distributed according to the content areas based on three domains: Knowledge (26.6%), comprehension (40%) and application (33.3%). The questionnaire was from 5 broad areas of cardiopulmonary resuscitation such as meaning, purpose, assessment, steps and complications.

Preparation of the blue print

⇓

Preparation of tool

⇓

Preparation of criteria for validation

⇓

Validation of the content of the tool

⇓

Establishment of the reliability of the tool

⇓

Pretesting of the tool

⇓

Development of final draft of the tool
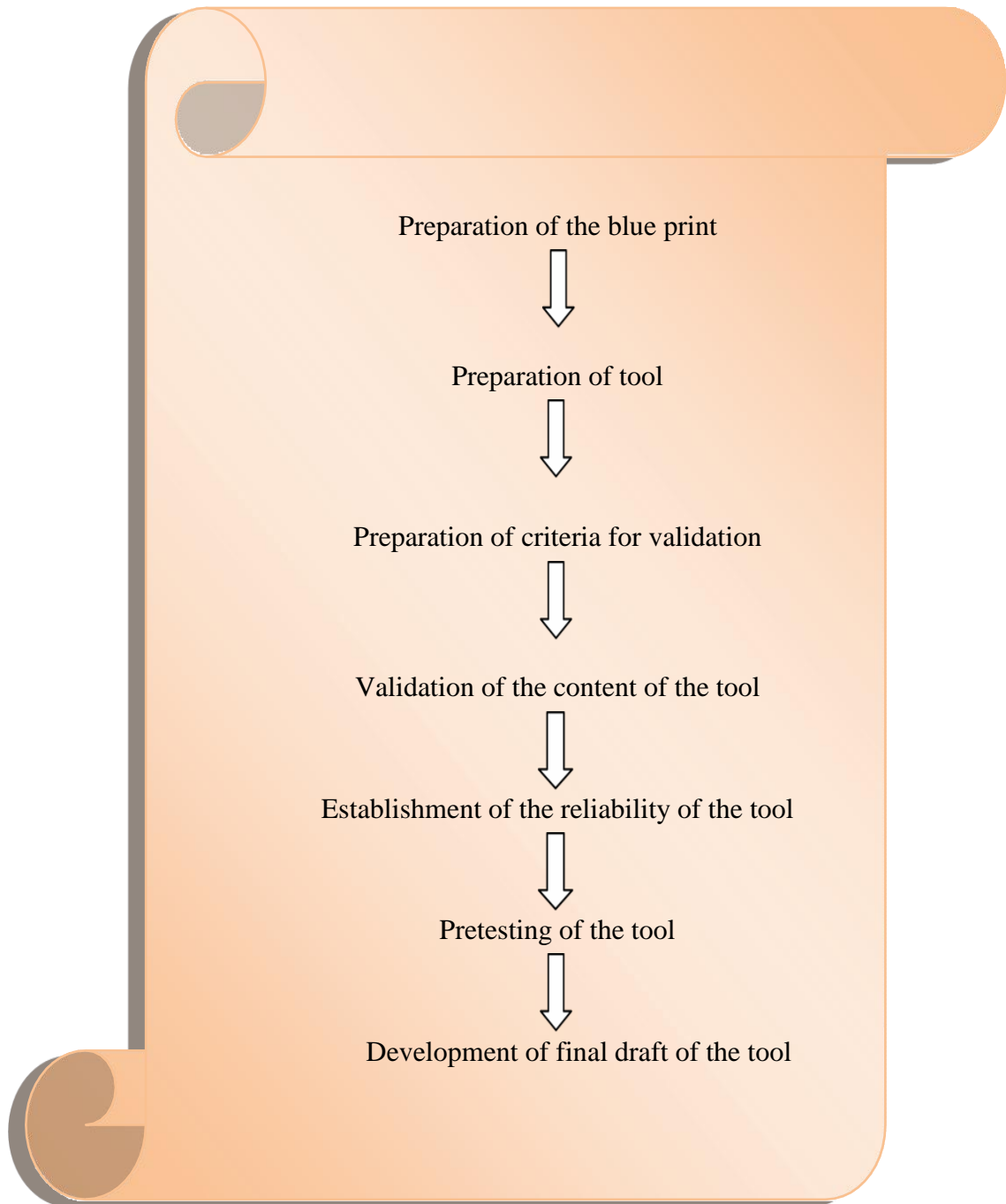
**Figure 3.4: Steps of tool preparation**

**CONTENT VALIDITY OF THE TOOL**

Content validity refers to the degree to which an instrument measures what it is supposed to measure.

The tool was submitted to 5 experts. 4 experts were post graduate from the department of medical surgical nursing and 1 experts were physician. The experts

were requested to give their opinions and suggestions regarding the relevance, adequacy and appropriateness of the items included. The original items were 30. The content validity index was 0.84. Finally 30 items were retained for the final data collection.

## RELIABILITY OF THE TOOL

The reliability of the tool is the degree of consistency with which a tool measures the attribute which is supposed to be measured.

The reliability of the structured knowledge questionnaire was established by using test–retest method. The tool was administered to 10 students of PPG college of arts and science. after obtaining informed consent from the students. Karl Pearson's correlation co-efficient formula was used to find out the reliability. The reliability quotient of the tool was ($r = 0.89$). So the tool was found to be reliable.

The reliability of the checklist was tested by using inter- rater method. The students had to perform cardiopulmonary resuscitation, after obtaining informed consent from the students. The reliability quotient of the checklist was ($r = 0.95$). So the checklist was found to be reliable.

## DEVELOPMENT OF THE FINAL DRAFT OF TOOL

The final draft of the tool was prepared by considering the suggestions from the experts. It comprised of three sections:

**Section A**: Baseline data - age, gender, course of study, family history of cardiac diseases and awareness about CPR.

**Section B:** Structured questionnaire to assess the knowledge regarding cardio pulmonary resuscitation.

**Section C:** Checklist to assess the skill regarding cardio pulmonary resuscitation.

**Section A: Base line data**

Base line data consisted of 6 items such as age, gender, course of study and family history of cardiac diseases, previous knowledge regarding cardio pulmonary resuscitation.

**Section B: Structured Questionnaire to assess the knowledge regarding cardio pulmonary resuscitation.**

A structured questionnaire was used to assess knowledge regarding cardio pulmonary resuscitation. It consisted of 30 items such as meaning, purpose, assessment, steps and complications of cardio pulmonary resuscitation.

**Section C: Checklist to assess the skill regarding cardio pulmonary resuscitation.**

A checklist was used to assess the skill regarding cardio pulmonary resuscitation. It consisted of 15 items.

## PILOT STUDY

Pilot study was done to find the reliability, practicability and feasibility of the study. Pilot study was done in a selected arts and science college. Formal permission was obtained from the principal of the college. The pilot study was conducted on 10 samples after assuring them of anonymity and confidentiality of the collected data. Structured questionnaire was used to assess the knowledge and a checklist was used to assess skill regarding cardio pulmonary resuscitation before and after structured teaching. Structured teaching on cardio pulmonary resuscitation was given after pretest. The data was analyzed using descriptive and inferential statistics. The study was found to be feasible.

## METHOD OF DATA COLLECTION.

The investigator had obtained written permission to conduct the study from the authorities of PPG College of  arts and science, coimbatore. The researcher approached the students and the purpose of the study was explained and confidentiality was assured. Informed consent was obtained from the students before collecting the data. Data was collected using structured questionnaire and a checklist to assess the knowledge and skill regarding cardio pulmonary resuscitation. The structured teaching was given after pretest. Ten days after structured teaching, posttest was conducted using the same questionnaire and checklist.

## PLAN FOR DATA ANALYSIS

Data analysis is the schematic organization and synthesis of research data and the testing of research hypothesis using those data. It was planned to analyze the data on the basis of objectives and hypotheses.

The data were analyzed using both descriptive and inferential statistics.

**Descriptive statistics:-**

Frequency, percentage, means, mean percentage and standard deviation were used to analyze the baseline data of students and their level of knowledge and skill regarding cardio pulmonary resuscitation.

**Inferential statistics:-**

1. Paired 't' test was used to assess effectiveness of structured teaching programme on knowledge and skill regarding cardiopulmonary resuscitation.

2. Chi-square test was used to identify the association between pre-test knowledge and skill with selected baseline variables.

# CHAPTER- IV

# DATA ANALYSIS AND INTERPRATATION

The term analysis refers to the computation of certain measures along with searching patterns of relationship that exist among data groups. In order to achieve the research results the collected data must be processed and analyzed in some orderly coherent fashion so that patterns and relationships can be discerned. Analysis of data is a process by which qualitative information is reduced, summarized, organized, evaluated, interpreted and communicated in a meaningful way.

This chapter deals with the analysis and interpretation of data collected to evaluate the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of Arts and Science, Coimbatore. The data were analyzed using descriptive and inferential statistics based on the objectives of the study.

**PRESENTATION OF DATA:**

The analysis of data is organized and presented under following sections:

**Section I:** Description of demographic characteristics of the student.

**Section II:** Analysis of level of knowledge and skill of subjects regarding cardio pulmonary resuscitation

**Section III:** Analysis of effectiveness of structured teaching programme on knowledge and skill regarding cardiopulmonary resuscitation

**Section IV:** Analysis of association between pretest knowledge and selected baseline variables.

**Section V:** Analysis of association between pretest skill and selected baseline variables.

## SECTION I: DESCRIPTION OF DEMOGRAPHIC CHARACTERISTICS OF THE STUDENT.

**Table.4. 1: Description of demographic characteristics of the student.**

( n=60)

| S. No | Background factor | Frequency | Percentage |
|-------|-------------------|-----------|------------|
| 1 | **AGE OF THE STUDENT** | | |
| | a. 17-19 years | 14 | 23.4% |
| | b. 20-22years | 20 | 33.3% |
| | c. 23-25 years | 20 | 33.3% |
| | d. above25 years | 6 | 10% |
| 2 | **GENDER** | | |
| | a. male | 34 | 56.6% |
| | b. female | 26 | 43.4% |
| 3 | **COURSE** | | |
| | a. BCA | 8 | 13.4% |
| | b. BSc | 14 | 23.3% |
| | c. B.Com | 14 | 23.3% |
| | d. MSc | 12 | 20% |
| | e. MCA | 4 | 6.6% |
| | f. M.Com | 8 | 13.4% |
| 4 | **FAMILY HISTORY OF CARDIAC DISEASE** | | |
| | a. Yes | 12 | 20% |
| | b. No | 48 | 80% |
| 5 | **ARE YOU AWARE ABOUT CPR** | | |
| | a. yes | 16 | 26.6% |
| | b. no | 44 | 73.4% |
| 6 | **SOURCE OF INFORMATION** | | |
| | a. health profession | 6 | 10% |
| | b. mass media | 6 | 10% |
| | c. pear group | 2 | 3.4% |
| | d. others | 46 | 76.6% |

**Table 4.1 Show the Following Result.**

Regarding the age 14(23.4%) of subject were between the age group of 17-19 years, 20(33.3%) of subject were between 20-22 years, 20(33.3%) of subject were between the age group of 23-25 years, 6(10%) of subject were the age group of above 25 years.

On considering the sex 34(56.6%) of subject were male students and 26(43.4%) of subject were female students.

With regards to the course 8(13.4%)of subject were studying BCA, 14(23.3%) of subject were studying BSc, 14(23.3%)of subject were studying B.Com, 12(20%)of subject were studying M.Sc., 4(6.6%)of subject were studying MCA, 8(13.4%)of subject were studying MCom.

With regards 12(20%) of subject were having family history of cardiac disease and 48(80%) of subject were not having family history of cardiac disease

With regards 16(26.6%) of subject were aware about CPR and 44(73.4%) of subject were not having awareness about CPR

On considering the source of information 6(10%) of subject were has got knowledge from health profession , 6(10%) of subject has were got knowledge from mass media, 2(3.4%) of subject were has got knowledge from pear group.46(76.6%) were others
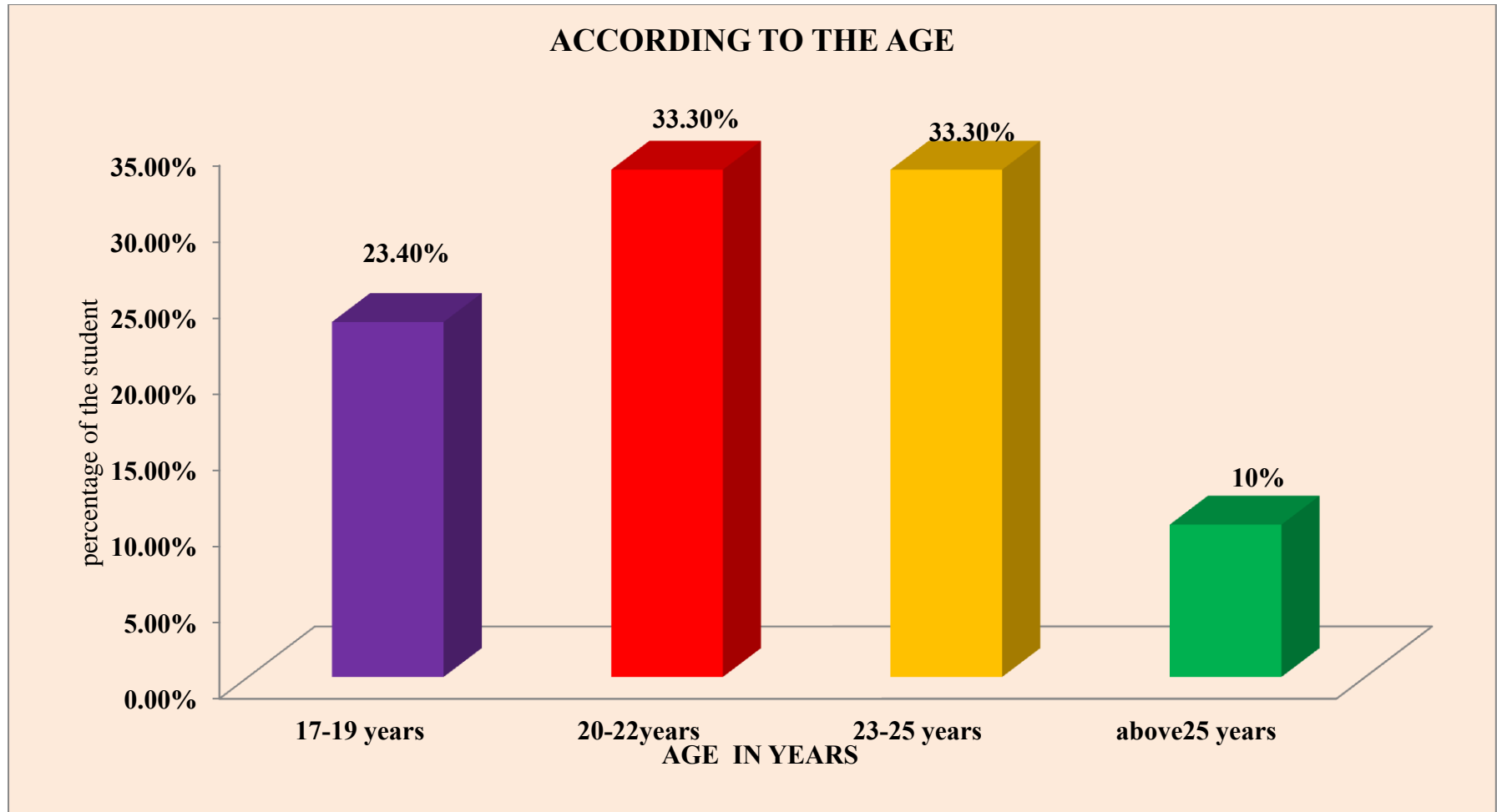
**Figure 4.1: Percentage Distribution Of The Student In Age Group**
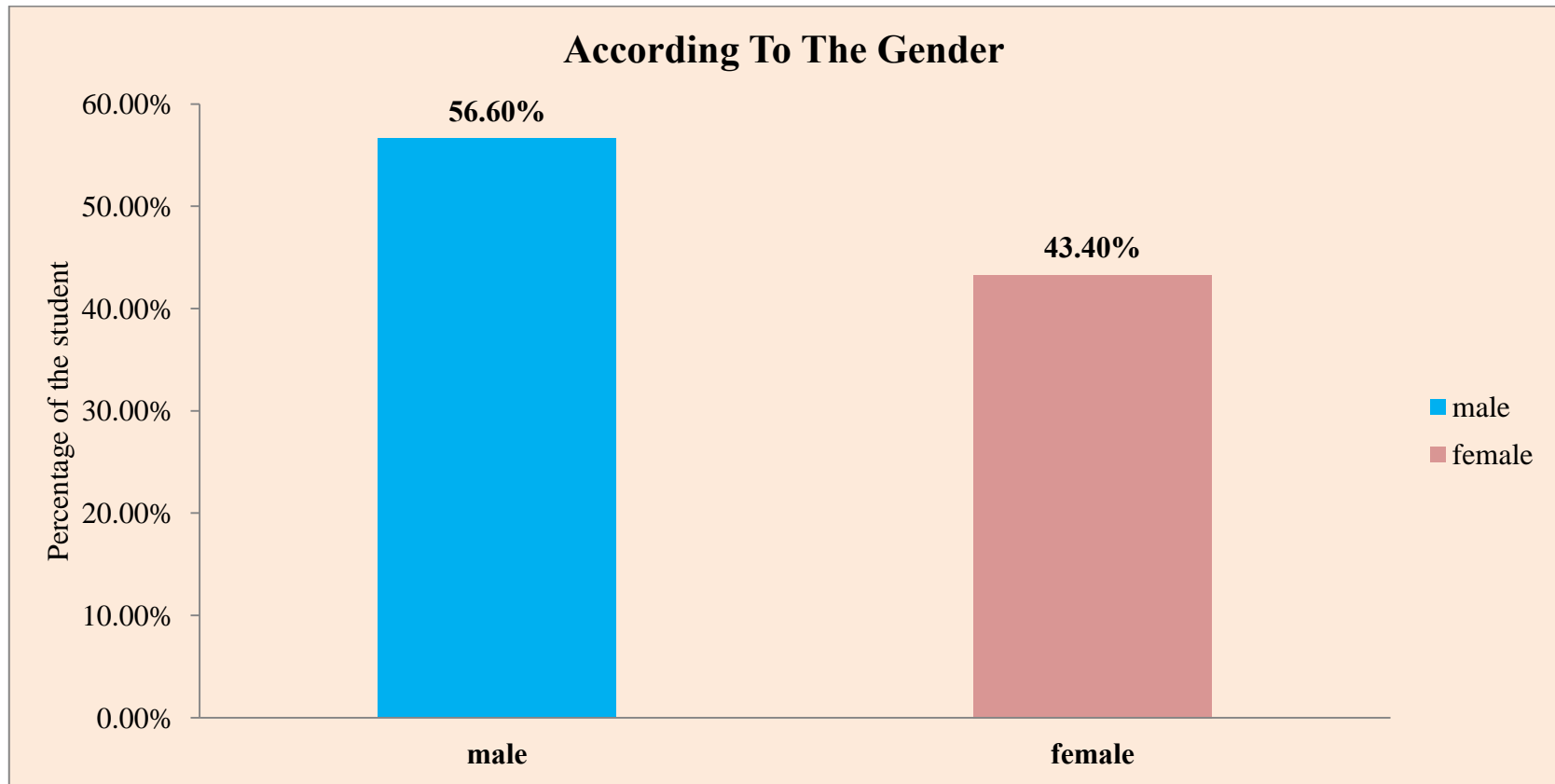
**Figure 4.2: Percentage Distribution of the Student in Gender.**
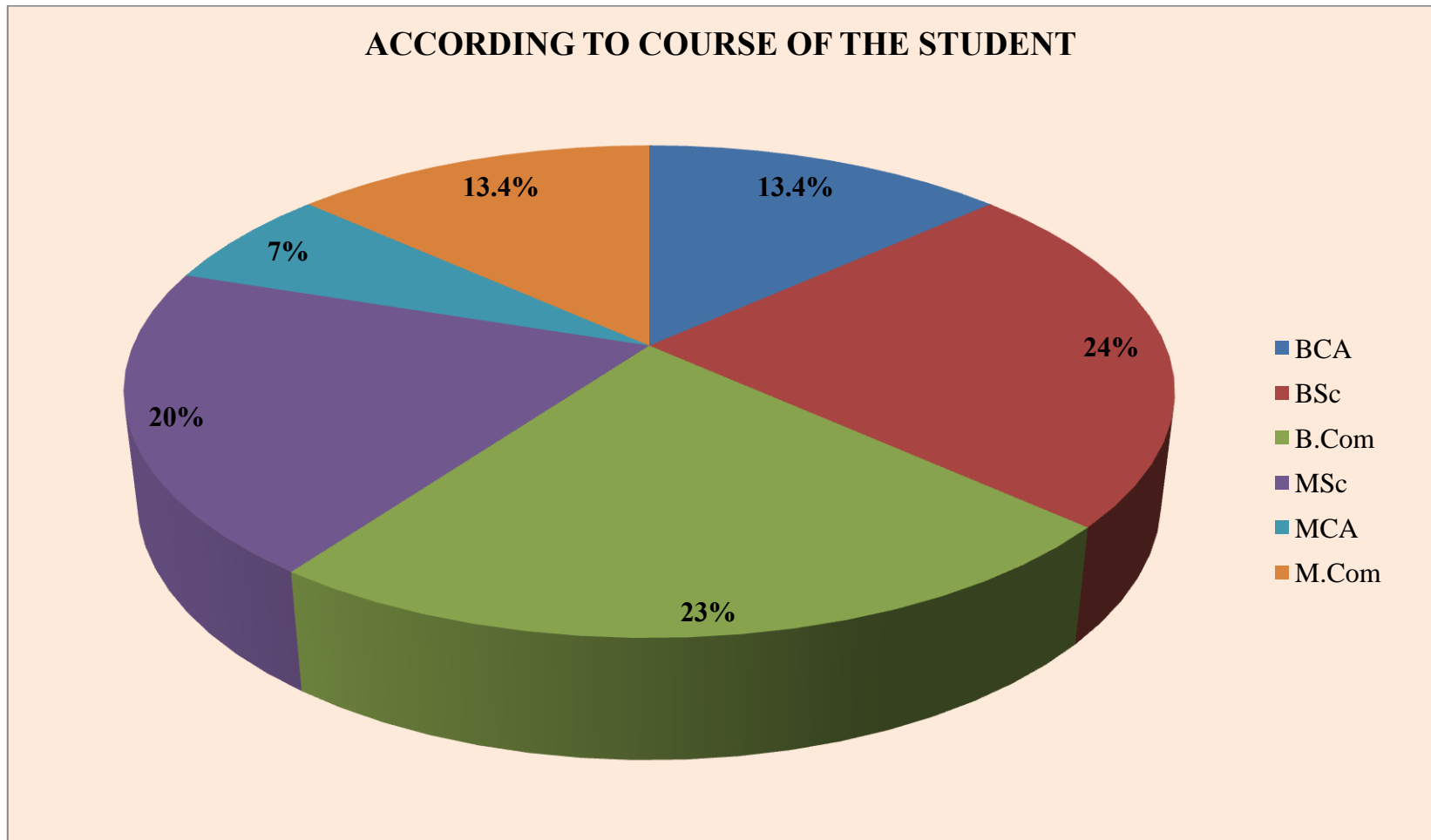
**Figure 4.3: Percentage Distribution of Course the Student Studying.**

**ACCORDING TO THE FAMILY HISTORY OF CARDIAC DISEASE**

20%

80%

yes
no
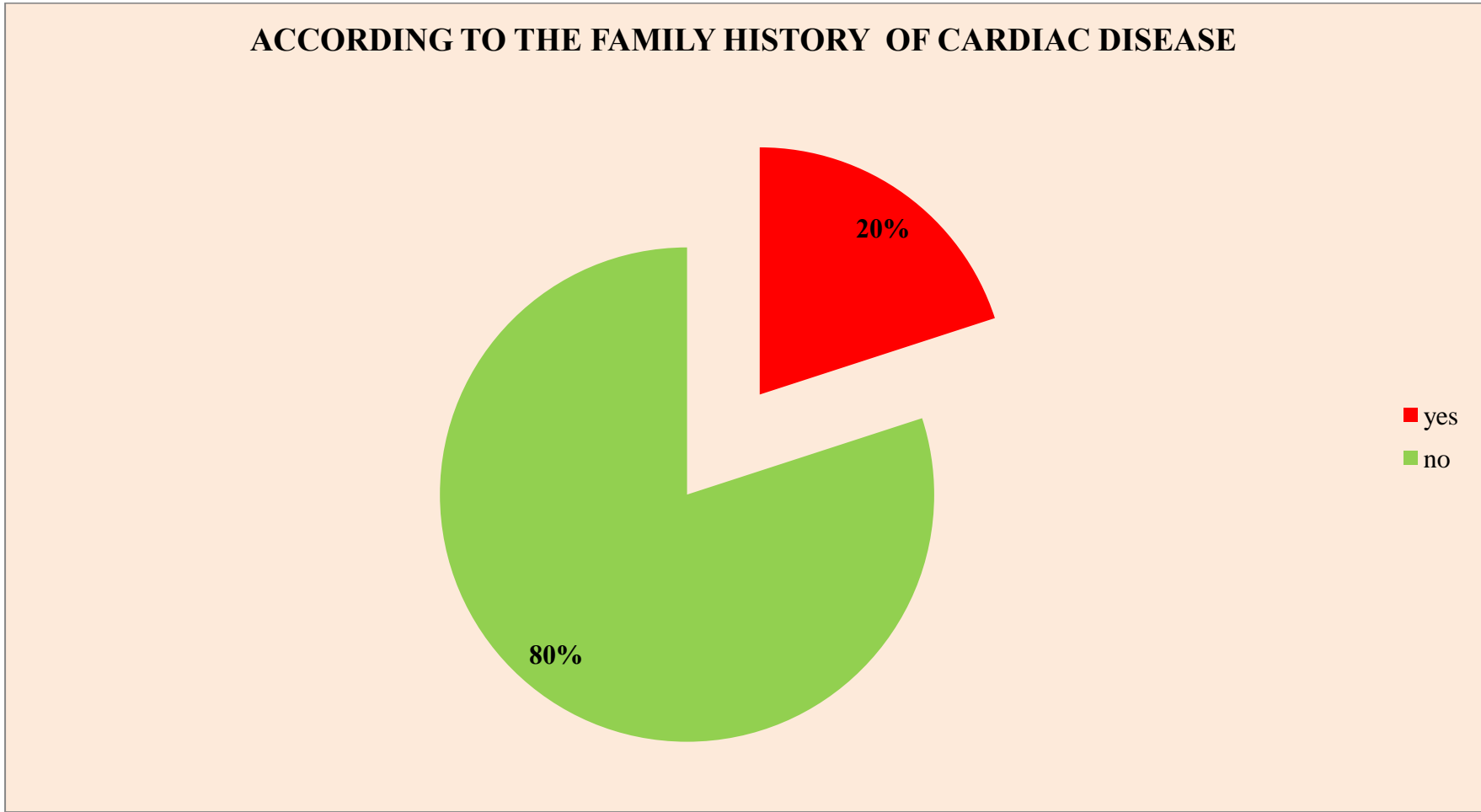
**Figure 4.4: Percentage Distribution of the Student with history of family cardiac disease.**
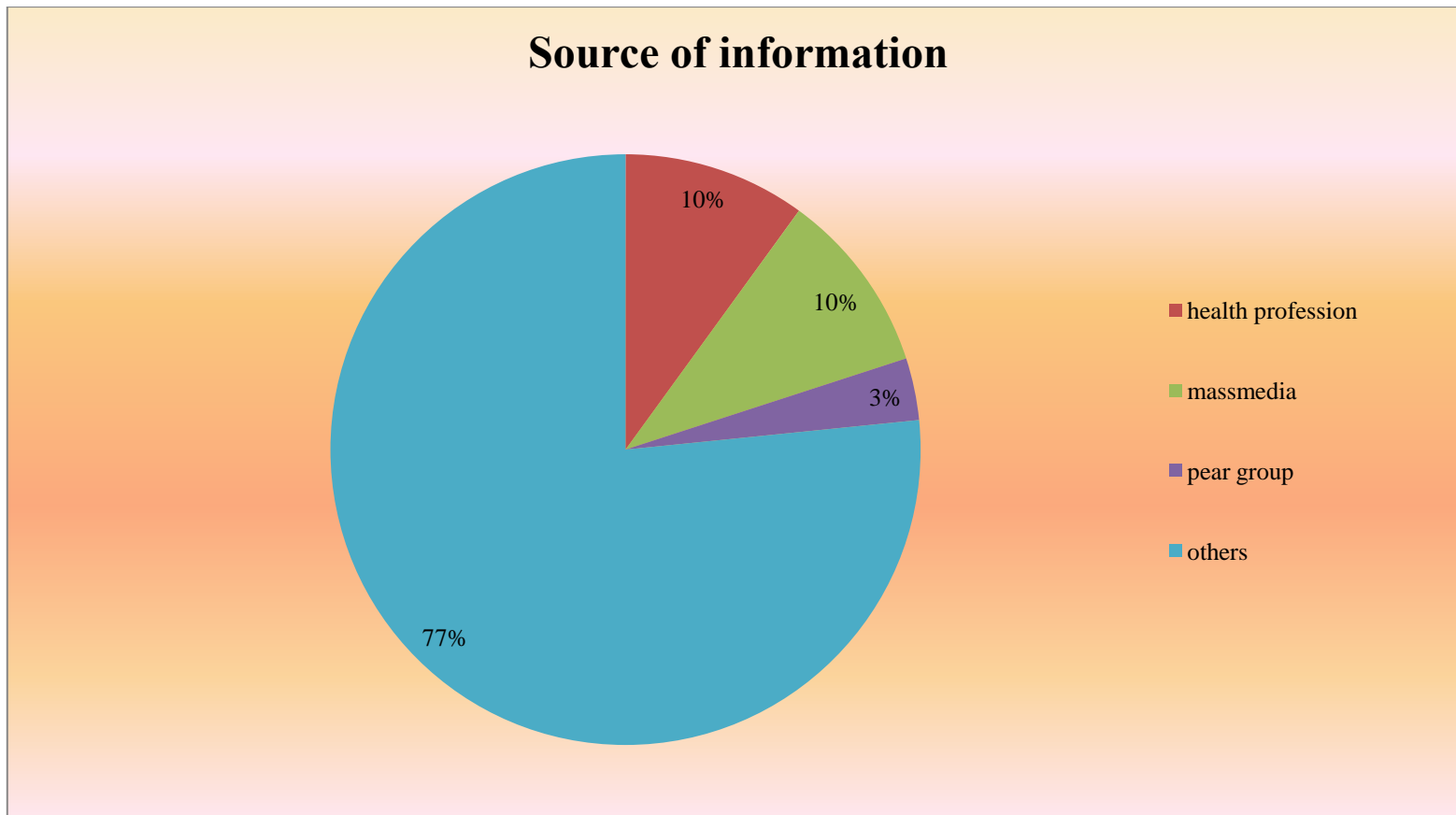
**Figure 4.5: Percentage Distribution of the Student in Source of Information**
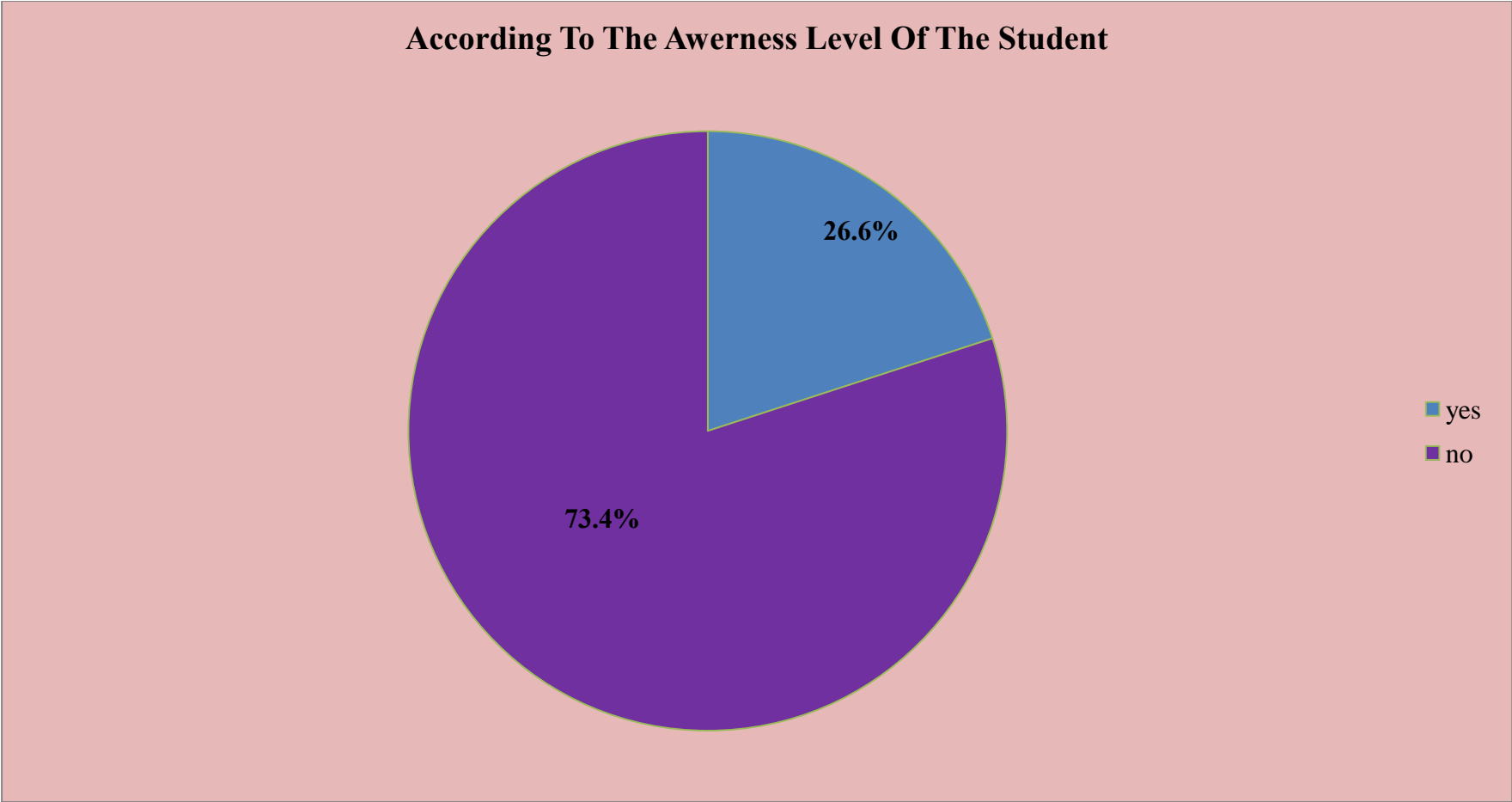
**Figure 4.6: Percentage Distribution Of The awareness level of Student.**

**SECTION II**: **ANALYSIS OF LEVEL OF KNOWLEDGE AND SKILL OF SUBJECTS REGARDING CARDIOPULMONARY RESUSCITATION.**

**Table 4.2: Pre-test and post-test knowledge of subjects regarding cardiopulmonary resuscitation**

(n=60)

| Level Of Knowledge | Pre-Test | | Post-Test | |
|---|---|---|---|---|
| | Frequency | % | Frequency | % |
| Inadequate | 12 | 20 | 0 | 0 |
| Average | 48 | 80 | 0 | 0 |
| Good | 0 | 0 | 16 | 26.6 |
| Excellent | 0 | 0 | 44 | 73.3 |

The data presented in table 4.2 depicts that, in pretest 12(20 %) subjects had inadequate knowledge, 48(80%) subjects had average knowledge, and none of the subjects had good and excellent knowledge, whereas in post-test 44(73.75%) subjects had excellent knowledge, 16(26.6%) subjects had good knowledge, and none had inadequate and average knowledge regarding cardiopulmonary resuscitation.

**Table 4.3: Pre-test and post-test skill of subjects regarding cardiopulmonary resuscitation.**

| Level Of Skill | Pre-test | | Post-test | |
|---|---|---|---|---|
| | Frequency | % | Frequency | % |
| Inadequate | 16 | 26.6 | 0 | 0 |
| Average | 44 | 73.3 | 0 | 0 |
| Good | 0 | 0 | 18 | 30 |
| Excellent | 0 | 0 | 42 | 70 |

The data presented in table 4.3 depicts that, in pretest 16(26.6%) subjects had inadequate skill, 44(73.3%) subjects had average skill, and none had good and excellent skill regarding CPR. Whereas in posttest, 42(70%) subjects had excellent skill, 18(30%) subjects had good skill and none had average or inadequate skill regarding cardiopulmonary resuscitation.

# SECTION III: ANALYSIS OF EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIOPULMONARY RESUSCITATION.

**Table 4.4: comparison of pre-test and post-test knowledge score of subjects regarding cardio pulmonary resuscitation**

**(n = 60)**

| Knowledge | Mean | Standard deviation | t-value |
|-----------|------|--------------------|---------|
| Pre-test | 9.6 | 39.25 | 3.142*<br>Df=59<br>P=2.02 |
| Post-test | 25.5 | | |

*Significant ($p < 0.05$)

Table 4.4 shows that the pre-test mean score of the student was 9.6 and post -test of the mean score was 25.5. And Standard deviation was 39.25. The obtained 't'-value was 3.142 was greater than the table value (2.02) at 59 degree of freedom at 0.05 level of significance. Therefore it was concluded that there was significant gain in knowledge through structured teaching programme

# ACCORDING TO MEAN VALUE BASED ON KNOWLEGE OF THE STUDENT
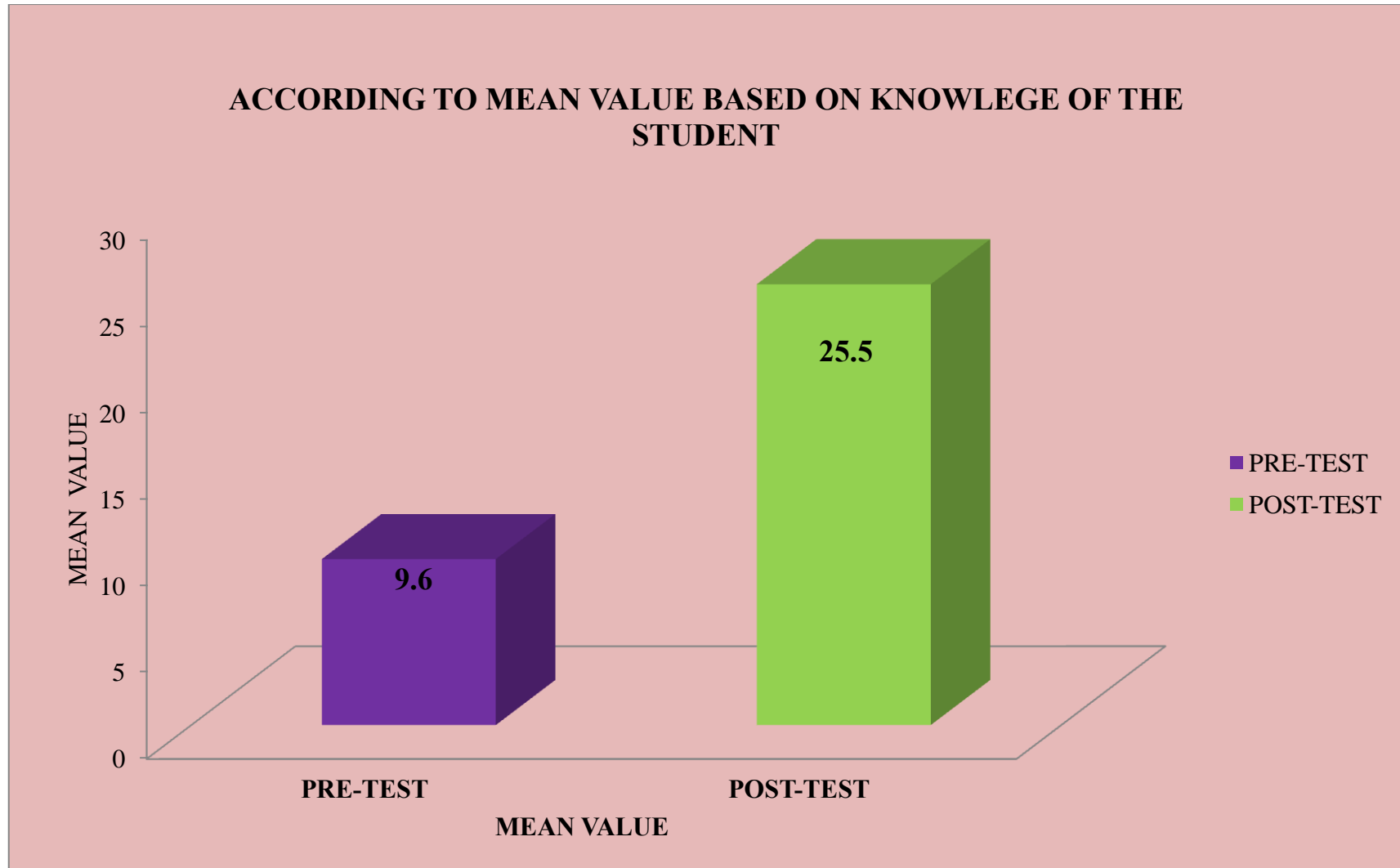


**Figure 4.7: Percentage Distribution Of the mean value Based on the knowledge of the Student**

**Table 4.5: Comparison of pre-test and post-test skill score of subjects regarding cardio pulmonary resuscitation**

(n=60)

| Knowledge | Mean | Standard deviation | t-value |
|-----------|------|--------------------|---------|
| Pre-test | 4.8 | 23.89 | 2.384* Df=59 P=2.02 |
| Post-test | 12.1 | | |

*Significant (p < 0.05)

The table 4.5 depicts that the mean pre-test skill score was 4.8, post-test skill score was 12.1. And Standard deviation was 23.89. The calculated value 2.384 was greater than the table value (2.02) at 0.05 level of significance. Therefore it was concluded that there was significant gain in skill through structured teaching programme.

**Figure-4.8: Percentage Distribution Of the mean value based on  skills of the Student**

# SECTION IV: ASSOCIATION BETWEEN PRETEST KNOWLEDGE AND SELECTED BASELINE VARIABLES.

**Table 4.6: Association between pretest knowledge and selected baseline variables**

| S. No | Background factor | Inadequate | Average | Good | Excellent | Total | Chi-square Chi-square |
|---|---|---|---|---|---|---|---|
| 1 | **AGE OF THE STUDENT** | | | | | | |
| | a) 17-19 years | 2 | 12 | 0 | 0 | 14 | |
| | b) 20-22years | 2 | 18 | 0 | 0 | 20 | 1.472 Df=6 P=12.592 NS |
| | c) 23-25 years | 6 | 14 | 0 | 0 | 20 | |
| | d) above25 years | 2 | 4 | 0 | 0 | 6 | |
| 2 | **GENDER** | | | | | | |
| | a) Male | 8 | 26 | 0 | 0 | 34 | 0.601 Df=3 P=7.815 NS |
| | b) Female | 4 | 22 | 0 | 0 | 26 | |
| 3 | **COURSE** | | | | | | |
| | a) BCA | 2 | 6 | 0 | 0 | 8 | |
| | b) B.Sc | 2 | 12 | 0 | 0 | 14 | |
| | c) B.Com | 2 | 12 | 0 | 0 | 14 | 6.261 Df=15 P=24.996 NS |
| | d) M.Sc | 2 | 10 | 0 | 0 | 12 | |
| | e) MCA | 0 | 4 | 0 | 0 | 4 | |
| | f) M.Com | 4 | 4 | 0 | 0 | 8 | |

| 4 | **FAMILY HISTORY OF CARDIAC DISEASE** | | | | | | |
|---|---|---|---|---|---|---|---|
| | a)  Yes | 2 | 10 | 0 | 0 | 12 | 0.096 Df=3 P=7.815 NS |
| | b)  No | 10 | 38 | 0 | 0 | 48 | |
| 5 | **AWARENESS ABOUT CPR** | | | | | | |
| | a)  Yes | 4 | 12 | 0 | 0 | 16 | 0.3264 Df=3 P=7.815 NS |
| | b)  No | 8 | 36 | 0 | 0 | 44 | |

SS- significant (p< 0.05)                                    NS-not significant (p> 0.05)

The data presented in table 4.6 depicts that there was no statistically significant association between the pretest knowledge and selected baseline variable

There was no statistically significant association between pretest knowledge and other baseline variables like gender, course family history of cardiac disease, awareness about CPR

# SECTION V: ASSOCIATION BETWEEN PRETEST SKILL AND SELECTED BASELINE VARIABLES.

**Table 4.7: Analysis of association between pretest skill and selected baseline variables.**

(n=60)

| S. No | Background factor | Inadequate | Average | Good | Excellent | Total | Chi-square |
|-------|-------------------|------------|---------|------|-----------|-------|------------|
| 1 | **AGE OF THE STUDENT** | | | | | | |
| | a) 17-19 years | 0 | 14 | 0 | 0 | 14 | 5.629 Df=6 P=12.592 NS |
| | b) 20-22years | 10 | 10 | 0 | 0 | 20 | |
| | c) 23-25 years | 4 | 16 | 0 | 0 | 20 | |
| | d) above25 years | 2 | 4 | 0 | 0 | 6 | |
| 2 | **GENDER** | | | | | | |
| | a) Male | 10 | 24 | 0 | 0 | 34 | 0.144 Df=3 P=7.815 NS |
| | b) Female | 6 | 20 | 0 | 0 | 26 | |
| 3 | **COURSE** | | | | | | |
| | a) BCA | 4 | 4 | 0 | 0 | 8 | 5.7674 Df=15 P=24.996 NS |
| | b) BSc | 6 | 8 | 0 | 0 | 14 | |
| | c) B.Com | 0 | 14 | 0 | 0 | 14 | |
| | d) MSc | 2 | 10 | 0 | 0 | 12 | |
| | e) MCA | 2 | 2 | 0 | 0 | 4 | |
| | f) M.Com | 2 | 6 | 0 | 0 | 8 | |

| 4 | **FAMILY HISTORY OF CARDIAC DISEASE** | | | | | | |
|---|---|---|---|---|---|---|---|
| | a)  Yes | 4 | 8 | 0 | 0 | 12 | 0.17<br>Df=3<br>P=7.815 NS |
| | b)  No | 12 | 36 | 0 | 0 | 48 | |
| 5 | **AWARENESS ABOUT CPR** | | | | | | |
| | a)  Yes | 6 | 10 | 0 | 0 | 16 | 0.6725<br>Df=3<br>P=7.815 NS |
| | b)  No | 10 | 34 | 0 | 0 | 44 | |

Significant (p< 0.05)                                    NS-not significant (p> 0.05)

The data presented in table 4.7 depicts that there was statistically significant association between the pretest knowledge and selected baseline variable. There was no statistically significant association between pretest knowledge and other baseline variables like Age, gender, course, family history of cardiac disease, Are you aware about.CPR.

# CHAPTER V
# RESULT AND DISCUSSION

The present study has been conducted to assess the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG college of arts and science, Coimbatore.

A quasi experimental one group pretest posttest design was adopted for the study. The data was collected from 60 degree students of PPG College of arts and science, Coimbatore. Before and after the administration of structured teaching programme. The findings of the study are discussed under the following sections:

The **first objective** was to assess the knowledge regarding cardio pulmonary resuscitation among students. In this study investigator assessed the knowledge of the each subject. Before delivering the structured teaching programme about knowledge and skills about CPR.

The mean score of the knowledge pre-test was 9.6 and the obtained 't' value 3.142 was greater than the table value 2.02 at 0.05 level of significance.

A study was conducted on 'Compressions-only CPR may be best' by **BJ Cardio staff.** The meta-analysis included three studies that randomized patients to receive one of the two CPR techniques according to dispatcher instructions. This showed that chest-compression-only CPR improved the patient's chance of survival compared with standard CPR (14% vs. 12%).

The **second objective** was to assess the skill in performing cardio pulmonary resuscitation among students In this study investigator assessed the skills of the  each subject. Before delivering the structured teaching programme about knowledge and skills about CPR.

The mean score of the skill pre-test was 4.8. and  the obtained 't' value 2.384 was greater than the table value 2.02 at 0.05 level of significance.

A study was done among Chinese college students to assess the awareness and attitude towards cardiopulmonary resuscitation. Students were chosen by stratified cluster sampling technique. The study reported that 28% of students had heard about

CPR, and only 3% of the respondents had attended a CPR course. The two major sources of information regarding CPR were television and books. Most respondents expressed a desire to learn CPR (77%), and were willing to disseminate knowledge regarding CPR (73%). The study concluded that efforts should be made to provide more convenient, effective and attractive ways for the public, especially students, to learn CPR. **Chen ZQ. et.al.,(2014)**

The **third objective** was to teach and demonstrate the CPR skills and techniques. The study investigator taught and demonstrates the CPR techniques among the students in PPG College of arts and science. Coimbatore. In each subject were taught with the help of CPR manikins.

Authors have further added that all 5382 employees at Stavanger University Hospital were asked to learn or refresh their BLS skills with the personal resuscitation manikin and video instruction. Prior to and nine months after training, all employees were asked to rate their BLS skills on a scale from one to five. Additionally, randomly chosen study subjects were tested for BLS skills pre-training and six months post-training during 2min of resuscitation on a manikin **Zhan Hong et al(2011)**

**The fourth objective** to reassess the skill and knowledge regarding cardio pulmonary resuscitation among students. In this study investigator reassessed the skill and knowledge of the  each subject. After  delivering the structured teaching programe about knowledge and skills about CPR.

The mean score of the knowledge post-test was 25.5. the obtained 't' value 3.142 was greater than the table value 2.02 at 0.05 level of significance. So the is a significance to gain knowledge after delivered structured teaching programme.

The mean score of the skill  post-test was12.1 the obtained 't' value 2.413 was less than the table value 2.043 at 0.05 level of significance. So the is a significance to gain skill after delivered structured teaching programme.

This finding reveals that there is a progressive knowledge gain among the student in PPG college of arts and science.

However, students' knowledge and skills were improved over their pre-training scores, which clearly indicated a positive retention in CPR cognitive

knowledge and psychomotor skills. The study findings present strong evidence to support the critical role of CPR training in ensuring that nursing students progress to become competent and confident responders in the event of a cardiac related emergency

Out of 61 students only 9 (14.7%) had taken a BLS (CPR) course while 52 (85.3%) students had not attended any such course. Significantly more number of students had the theoretical knowledge about BLS (76.07% vs 49.18%, $p<0.00$). Practical knowledge about BLS was scored as having no, some and complete knowledge of the course. Of all 37 the students, 57.3% had no knowledge, among those 34% had heard BLS from somewhere, 22.9% had some knowledge, out of which 50% had heard about it. Significantly less number of students had complete knowledge about BLS (4% $p<0.05$). Among the students who had taken the course, 22% had complete knowledge ($p<0.05$). Significantly less number of students knew about the skills for BLS (21% $p<0.05$)

**The fifth objective** of the study was to identify the association between pretest knowledge and demographic variables of the student. The demographic variable namely age, sex, course of the student, family history of cardiac disease, awareness of the CPR were associated with pre-test knowledge score.

There was significant association of age of the students with pre-test score of the knowledge.

**The sixth objective** of the study was to identify the association between pretest skill and demographic variables of the student. The demographic variable namely age, sex, course of the student, family history of cardiac disease, awareness of the CPR were associated with pre-test skill score.

There was no significant association of age, sex, course of the student, family history of cardiac disease, awareness of the CPR with pre-test skill score of the students .

# CHAPTER VI

# SUMMARY, CONCLUSION, NURING IMPLICATIONS, LIMITATIONS AND RECOMMENDATION

**SUMMARY:**

The present study revealed a effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of arts and science, Coimbatore.

The following objectives were set for the study:

1. To assess the knowledge regarding cardio pulmonary resuscitation among students.

2. To assess the skill in performing cardio pulmonary resuscitation among students.

3. To determine the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students.

4. To reassess the knowledge and skill regarding cardio pulmonary resuscitation among students.

5. To identify the association between pretest knowledge and selected baseline variables.

6. To identify the association between pretest skill score and selected baseline variables.

**The HYPOTHESES for the study:**

H1: The mean posttest knowledge score of students will be significantly higher than their mean pretest knowledge score at 0.05 level of significance.

H2: The mean posttest skill score of students will be significantly higher than their mean pretest skill score at 0.05 level of significance.

H3: There will be a significant association between pretest knowledge and selected baseline variables at 0.05 level of significance.

H4: There will be significant association between pretest skill and selected baseline variables at 0.05 level of significance.

Major finding of the study were as follows:

❖ The mean pretest knowledge score of students was: 9.6

❖ The mean posttest knowledge score of students: 25.5

❖ The standard deviation value of the knowledge was:39.25.

❖ The obtained t-value for the structured teaching program on knowledge was:3.142

❖ The mean pretest skill score of students was: 4.8

❖ The mean posttest skill score of students was: 12.1

❖ The standard deviation value of the skill was:23.89.

❖ The obtained t-value for the structured teaching program on knowledge was:2.384

**CONCLUSION**

The study was conducted to assess the effectiveness of structured teaching programme on knowledge and skill regarding cardio pulmonary resuscitation among students of PPG College of arts and science, Coimbatore. The knowledge and skill of the students gain knowledge who are getting after structured teaching programme. So the investigator rejects the null hypothesis and accepts the research hypothesis.

**NURSING IMPLICATIONS**

The results of this study haveimplications on nursing practice, nursing administration, nursing education and nursing research.

**IMPLICATIONS FOR NURSING PRACTICE***:*

- The community nurses can conduct training programs to the public regarding cardio pulmonary resuscitation.

- The nurses have a vital role in educating the caregivers of patients with cardiac disease regarding cardio pulmonary resuscitation.

- The occupational health nurse can conduct training programs regarding CPR for employees.

- Health information can be imparted through various methods such as seminar, mass media and information booklet.

**IMPLICATIONS FOR NURSING EDUCATION**:

- The nursing students can conduct awareness programs regarding CPR in the community during their community health nursing postings.

- The nursing students can also conduct awareness programs regarding CPR in OPDs and primary health centers.

**IMPLICATIONS FOR NURSING ADMINISTRATION**:

- The nurse administrators can organize and conduct in- service educational program for staff nurses regarding cardio pulmonary resuscitation.

**NURSING RESEARCH:**

- Nurse researchers can disseminate the findings through conference, seminars, national and international journals, and world wide websites.

- Nurse researchers can encourage nursing students to read, discuss, and conduct research studies on cardio pulmonary resuscitation.

**RECOMMENDATIONS:**

- The study can be replicated in different settings with a larger sample.

- A true experimental study can be done to assess the effectiveness of structured teaching programme on knowledge and skill regarding CPR among

college students.

- A study can be conducted to assess the student nurses knowledge and skill regarding cardio pulmonary resuscitation.

- A study can be conducted to assess the effectiveness of structured teaching programme on knowledge and skill regarding CPR among caregivers of patients with cardiac disease.

**LIMITATIONS:**

- The study was limited to students of PPG college of arts and science only.

- The study was limited to 60 students only.

- There was no control group.

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# ANNEXURE I

## PERMISSION LETTER FOR CONDUCTING STUDY

To

    Through
    The Principal,
    PPG College of Nursing
    Coimbatore-35.

Respected Madam,

      **Sub: Seeking Permission For Conducting Research Study**

    I am a Student of M.Sc Nursing in PPG College of Nursing. Our College is affiliated to the Tamilnadu Dr. M G R Medical University, Chennai. I have taken the Specialization in Medical Surgical Nursing.

    Topic: **EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIO PULMONARY RESUSCITATION AMONG STUDENTS OF PPG COLLEGE OF ARTS AND SCIENCE, COIMBATORE.**

    I request you to kindly permit me to conduct my study in hospital. Hope you will consider my requisition and do the needful.

        Thanking you,

                        Yours Truly,

Date:

Place: Coimbatore

# REQUISITION LETTER FOR CONTENT VALIDITY

**From**

      Karthika.N

      M.Sc. (N) II Year,

      PPG College of Nursing,

      Coimbatore-35

**To**

      **Through: Principal, PPG College of Nursing**

Respected Sir/Madam,

**Sub: Requisition for expert opinion and suggestion for content validity of tool**

I am a student of M.Sc. (N) II year, PPG College of Nursing affiliated to the Tamil Nadu Dr. M. G. R. Medical University, Chennai. As a partial fulfilment of the M.Sc. (N), program. I am conducting.

**"EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIO PULMONARY RESUSCITATION AMONG STUDENTS OF PPG COLLEGE OF ARTS AND SCIENCE, COIMBATORE".**

Herewith I have enclosed the developed tool for content validity and for the expert opinion and possible solution. I will be very kind of you to return the same as early as possible.

Thanking you,

Yours faithfully,

Date:                                                **(Karthika.N)**

Place: Coimbatore

# ANNEXURE III

# CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tool constructed by Mrs. Karthika.N, M.Sc. Nursing II year, PPG College of Nursing, which is to be used in his study titled **"Topic: EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIO PULMONARY RESUSCITATION AMONG STUDENTS OF PPG COLLEGE OF ARTS AND SCIENCE, COIMBATORE."** has been validated by the undersigned. The investigator in concern will incorporate the suggestions and modification given by me with their respective guide. The he can proceed to conduct study.

Name:                                                                                    Signature with Seal

Designation:

College:

Place:

Date:

# ANNEXURE IV

## LIST OF EXPERTISE WHO PERFORMED CONTENT VALIDITY

**Dr. Padmaja, MBBS, MD**
Consultant Physician
Ashwin Hospital,
Coimbatore

**Mrs. Littreshiabalin, M.Sc.(N)**
Associate Professor
Texcity College of Nursing,
Coimbatore

**Mrs. Kiruthika Devi M.Sc. (N)**
Asst. Professor
Texcity College of Nursing,
Coimbatore

**Mrs, C. Mahalakshmi, M.Sc.(N)**
Associate Professor,
Sri Krishna Institute of Nursing,
Salem

**Mr. Anish. A.L, M.Sc. (N)**
Associate Professor,
SIMET College of Nursing,
Udma, Kasargod.

<div align="center">

**ANNEXURE-V**

**TOOL**

</div>

**SECTION A: BASELINE DATA**

**Instructions:**

Dear respondent, please put a tick mark (√ ) in the appropriate column which shows your opinion best

1. **Age in years**

   a.  17- 19                                                    (   )

   b.  20-22                                                     (   )

   c.  23-25                                                     (   )

   d.  above 25                                               (   )

2. **Gender**

   a.  Male                                                      (  )

   b.  Female                                                  (  )

3. **Course of study**

   a.  BCA                                                       (  )

   b.  B.Sc.                                                      (  )

   c.  B.com                                                    (  )

   d.  MSc                                                       (  )

   e.  MCA                                                      (  )

   f.  M.Com                                                   (  )

4. **Family history of cardiac diseases**

   a.  Yes                                                         (  )

   b.  No                                                          (  )

5. **Are you aware about cardio pulmonary resuscitation (CPR)?**

   a.  Yes                                                         (  )

   b.  No                                                          (  )

**6. If yes, what is the source of information regarding cardio pulmonary resuscitation?**

    a.  Health personnel                                     ( )

    b.  Mass media                                            ( )

    c.  Peers/ family member/ neighbors             ( )

**7. Have you attended any classes on cardio pulmonary resuscitation within the last 6 months?**

    a.  Yes                                                ( )

    b.  No                                                  ( )

## SECTION B:

## STRUCTURED QUESTIONNAIRE TO ASSESS THE KNOWLEDGE REGARDING CARDIO PULMONARY RESUSCITATION

**Instructions:** Dear respondent please put a tick mark (√) in the appropriate column which shows your opinion best.

1. **The main function of the heart is to**
   a. supply oxygen rich blood to all our body parts ( )
   b. supply impure blood to all our body parts ( )
   c. a and b ( )
   d. none of the above ( )

2. **An adult heart beats approximately_____times per minute**
   a. 20 – 60 beats/min ( )
   b. 60- 100 beats/min ( )
   c. 100- 140 beats/min ( )
   d. 140- 180 beats/min ( )

3. **The organ that is damaged in a few minutes when the heart stops functioning is**
   a. lungs ( )
   b. Intestine ( )
   c. brain ( )
   d. liver ( )

4. **The purpose of Cardio pulmonary resuscitation is to**
   a. restore breathing ( )
   b. restore circulation (the movement of blood through blood Vessels) ( )
   c. a and b ( )
   d. none of the above ( )

**5. The first step that one should follow while seeing an unconscious person is**

   a.  tap the victim and ask —Are you OK                  (   )

   b.  seek help and shift to hospital                   (   )

   c.  seek help from relatives                       (   )

   d.  inform the police immediately                  (   )

**6. It is important for you to know about cardio pulmonary resuscitation because it**

   a.  improves your knowledge and skill               (   )

   b.  saves the life of a person with cardiac arrest     (   )

   c.  all of the above                              (   )

   d.  none of the above                           (   )

**7. CPR must be initiated within_____minutes after cardiac arrest**

   a.  4-6 minutes                             ( )

   b.  6- 8 minutes                            ( )

   c.  8-10 minutes                          ( )

   d.  10- 12 minutes                       ( )

**8. In India, the emergency number to be called while seeing a person unresponsive is _____**

   a. 911                                 (   )

   b. 100                                 (   )

   c. 108                                 (   )

   d. 112                                 (   )

**9. CPR to be performed in a person when**

   a.  talking is stopped                         ( )

   b.  respiration is stopped and the heart sound is absent   ( )

   c.  there is no body movement                 ( )

   d.  eyes are not opened                       ( )

**10. The best position for a person who is receiving CPR is**

a.  sitting ( )

b.  lie flat on the floor ( )

c.  standing ( )

d.  lie on the side ( )

**11. The position of a person who gives CPR is**

a.  kneels next to the person on the right side near the shoulder ( )

b.  kneels next to the person on the left side near the shoulder ( )

c.  stands next to the person on the right side near the shoulder ( )

d.  stands next to the person on the left side near the shoulder ( )

**12. The order to be followed while performing CPR is**

a.  airway, breathing, compression ( )

b.  breathing, airway, compression ( )

c.  compression, breathing, airway ( )

d.  compression, airway, breathing ( )

**13. The recommended number of chest compressions in CPR is**

a. 70 compression /minute ( )

b. 80 compression /minute ( )

c. 90 compression /minute ( )

d. atleast 120 compression /minute ( )

**14. The recommended ratio of compressions to breaths is_____.**

a.  30 compressions to 1 breath ( )

b.  30 compressions to 2 breaths ( )

c.  15 compressions to 1 breath ( )

d.  15 compressions to 2 breath ( )

**15. The depth of chest compressions in an adult is**

a. ½ to 1 inch ( )

b.1 to 1 ½ inch ( )

c. 1½ to 2 inch ( )

d. 2 to 2 .4  inch ( )

## 16. In CPR, while compressing the chest, the elbow of the hand should be

a. straight and not flexed ( )

b.flexed ( )

c.all of the above ( )

d.none of the above ( )

## 17. While performing CPR, the pulse has to be felt in an artery of the

a.  neck (Carotid artery) ( )

b.  upper arm (Brachial artery) ( )

c.  forearm (antecubital artery) ( )

d.  thigh (femoral artery) ( )

## 18. The hand that is to be used to compress the chest while performing CPR is

a.  right hand only ( )

b.  left hand only ( )

c.  both hands ( )

d.  any one hand ( )

## 19. While performing CPR, the compressions are given on

a.  anywhere on the left side of the chest ( )

b.  anywhere on the right side of the chest ( )

c.  alternately on left and right ( )

d.  between the nipples, towards the left ( )

## 20. While performing CPR the pulse has to be checked, after_____minutes of resuscitation

a.  1 minute ( )

b.  2 minutes ( )

c.  3 minutes ( )

d.  4 minutes ( )

**21. The airway in an head injury person can be opened by**

    a.   Jaw thrust method                                  ( )

    b.  Head tilt and chin lift                               ( )

    c.  a and b                                          ( )

    d.  none of the above                                 ( )

**22. If a person is unable to breathe spontaneously and no equipments are available, breaths are given by_____method.**

    a.  mouth to mouth                                ( )

    b.  mouth to nose                                  ( )

    c.  a and b                                          ( )

    d.  none of the above                                 ( )

**23. Breathing and pulse in an unresponsive person can be check for not less than 5 second and not more than 10 second by palpating using?**

    a.  look for the movement of the abdomen             ( )

    b.  listen and feel for airflow against the ear         ( )

    c.  fingers on the carotid  artery simultaneously observed

        chest movement at chest level to check respiration     ( )

    d.  none of the above                               ( )

**24. While giving rescue breaths, the nose of the person is pinched to**

    a.  prevent the escape of air                       ( )

    b.  prevent bleeding                               ( )

    c.  prevent the entry of air                        ( )

    d.  to prevent sneezing                            ( )

**25. When air enters the chest, the chest will**

    a. Fall                                             ( )

    b. rise                                           ( )

    c.a & b                                         ( )

    d.none of the above                               ( )

**26. CPR should be stopped when**

    a.  pulse and breathing  of the victim's resumes         ( )

    b.  emergency help arrives         ( )

    c.  rescuer is exhausted and unable to continue         ( )

    d.  all of the above         ( )

**27. If the person has started breathing normally after CPR,**

    a.  continue CPR         ( )

    b.  Wait for trained health professionals         ( )

    c.  Turn the person on side and wait for trained health professionals ( )

    d.  Continue with chest compressions         ( )

**28. The complication of CPR is**

    a.  Fracture of hips         ( )

    b.  Fracture of knee         ( )

    c.  Fracture of ribs (chest bones)         ( )

    d.  Fracture of humerus (bone of the upper hand)         ( )

**29. While performing CPR, the pulse is checked for___ to know____.**

    a.  Not less than 5 second and not more than 10 second, Circulation.     ( )

    b.  Not less than 5 second and not more than 10 second, Breathing,     ( )

    c.  airway clearance, tongue back fall         ( )

    d.  3minitues, temperature,         ( )

**30. The most common cause of obstruction in an unconscious person is**

    a.  food         ( )

    b.  dentures (artificial teeth)         ( )

    c.  tongue         ( )

    d.  water         ( )

## SECTION-C

## CHECKLIST TO ASSESS THE SKILL REGARDING CARDIO PULMONARY RESUSCITATION

| S.NO | STEPS | YES (1) | NO (0) |
|---|---|---|---|
| 1 | Shakes the victim's shoulder and shouts ̶Are you OK̶ | | |
| 2 | Asks for someone to call the emergency, if the victim does not respond and breath | | |
| 3 | Kneels next to the person's neck and shoulders on the right side | | |
| 4 | Check for environmental, rescuer and our safety. check for pulse and respiration simultaneously not less than 5sec and not more than 10 sec. | | |
| 5 | Places the heel of one hand over the centre of the person's chest, the nipples. | | |
| 6 | Places the left hand on top of the right hand and interlocks tightly. | | |
| 7 | Keeps elbows straight and positions the shoulders directly above the hands. | | |
| 8 | Uses the upper body weight to push down the chest 2-2.4 inches (approximately 5 centimetres) | | |
| 9 | Compresses chest at least 100-120 compressions per minute. | | |
| 10 | Opens the airway with head tilt–chin lift /jaw thrust method | | |
| 11 | Takes normal breath, pinches the victims nose and covers the victim's mouth with rescuer's mouth, creating an air tight seal. | | |
| 12 | Gives respiration by mouth- to- mouth Method and give 2breaths (one second each) watch for chest rise when each breath | | |
| 13 | Gives two breaths after 30 compressions in regular cycle | | |
| 14 | Palpates the carotid pulse after the every second minute of CPR, to check for the return of circulation.(ROSC) | | |
| 15 | Continues CPR until spontaneous circulation and ventilation returns | | |

# KNOWLEDGE QUESTIONNAIRE ANSWER KEY

| Item no | Answer key | Max.score | Item no | Answer key | Max.score |
|---------|------------|-----------|---------|------------|-----------|
| 1 | a | 1 | 16 | a | 1 |
| 2 | b | 1 | 17 | a | 1 |
| 3 | c | 1 | 18 | c | 1 |
| 4 | c | 1 | 19 | d | 1 |
| 5 | a | 1 | 20 | a | 1 |
| 6 | c | 1 | 21 | a | 1 |
| 7 | a | 1 | 22 | c | 1 |
| 8 | c | 1 | 23 | c | 1 |
| 9 | b | 1 | 24 | a | 1 |
| 10 | b | 1 | 25 | b | 1 |
| 11 | a | 1 | 26 | d | 1 |
| 12 | d | 1 | 27 | c | 1 |
| 13 | d | 1 | 28 | c | 1 |
| 14 | b | 1 | 29 | a | 1 |
| 15 | c | 1 | 30 | c | 1 |

# PLAGIARISM CERTIFICATE

This is to certify that a work titled **Topic: "EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND SKILL REGARDING CARDIO PULMONARY RESUSCITATION AMONG STUDENTS OF PPG COLLEGE OF ARTS AND   SCIENCE, COIMBATORE."** of the candidate **Mrs.KARTHIKA.N** with the register number **301711102,** for the award of **M.Sc. Nursing** in the branch of **Medical Surgical Nursing**. I personally verified the plagiarism.checkerx.com website for the purpose of plagiarism check. I found that the uploaded thesis contains from introduction to conclusion pages and result shows **18 percent** of plagiarism in the dissertation.

**ANNEXURE VI**

**STRUCTURED TEACHING MODULE**

**ON**

**CARDIO PULMONARYRESUSCITATION**

TOPIC : Cardio pulmonary resuscitation

GROUP : Degree students PPG college of arts and science

METHOD OF TEACHING : Lecture cum discussion

TEACHING AIDS : Black board, LCD
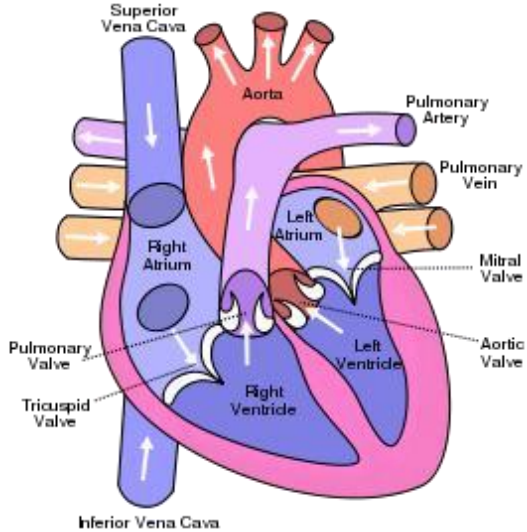
TEACHER'S NAME : Mrs. Karthika.N

**GENERAL OBJECTIVE:**

At the end of the class, the students will gain adequate knowledge and skill regarding cardio pulmonary resuscitation, appreciate its importance and applies this knowledge in practice.

**SPECIFIC OBJECTIVE:**
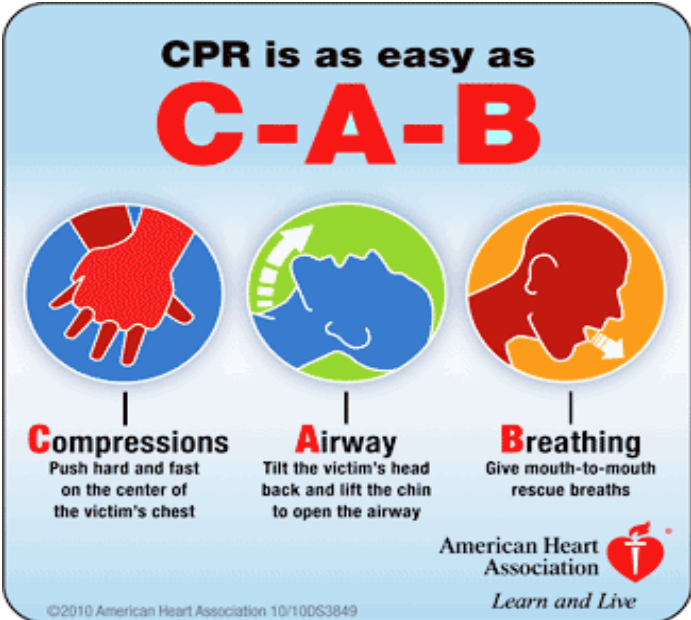
Upon the completion of the class, the students will be able to:

- Explain the structure of  heart
- Describe the functions of  heart
- State the meaning of cardio pulmonary resuscitation
- Lists down the purposes of cardio pulmonary resuscitation
- Explains the steps of cardio pulmonary resuscitation
- Enumerates the complications of cardio pulmonary resuscitation

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| 5mts | | **INTRODUCTION**<br><br>Cardio pulmonary arrest is the cessation of respiration, absence of heart sounds and blood pressure, loss of palpable pulses and dilation of pupil.<br><br>Cardio pulmonary resuscitation is provided for a patient with cardiac arrest to maintain life until the victim either recovers or is transported to a medical facility where advanced life support measures are available. | Teacher Introduces the topic | Students listen | |

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| 3 mins | At the end of the class students will, explain the structure of heart | **STRUCTURE OF THE HEART**<br><br>The heart is a hollow muscular organ. It is 10 cm and is about the size of ones own fist. It weighs about 225 gms in women and is heavier in men (about 310 gm).<br><br> | Teacher explains the structure of heart | Students listen | LCD |

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| 2 mts | describe the function of heart state the meaning of cardio pulmonary resuscitation | **FUNCTION OF THE HEART**<br><br>The heart beats on an average 72 times per minute in an adult. It works 24 hours a day and 7 days a week. Our heart has a simple but important job. It supplies oxygen rich blood to all our body parts. If our heart stops pumping, oxygen does not reach vital organs and they stop working. | Teacher describes the function of heart | Students listen | LCD |
| 3 mts | | **MEANING**<br><br>Cardiopulmonary resuscitation (CPR) is a procedure to support and maintain breathing and circulation for a person who has stopped breathing (respiratory arrest) and/or whose heart has stopped beating (cardiac arrest). It is a manual method to keep the heart pumping in an emergency situation. | Teacher states the meaning cardio pulmonary resuscitation | Students listen | LCD |
| 3 Mts | list down the purposes of cardio pulmonary resuscitation | **PURPOSES**<br><br>• To restore and maintain breathing and circulation provide oxygen and blood flow to the heart, brain, and other vital (important) organs. | Teacher lists down the purposes of cardio pulmonary resuscitation | Students listen | LCD |

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| 12mts | explain the steps of cardio pulmonary resuscitation | **STEPS**:<br><br>**Step1:**<br>**Assess level of conscious**ness<br><br>• persons who appear to be unconscious may be asleep, deaf or intoxicated.<br><br>• Unconsciousness is confirmed shaking the victim's shoulders and shouting ─ Are you OK?<br><br>• If the person does not respond and two people are available, | Teacher explains the steps of cardio pulmonary resuscitation | Students listen | LCD |

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| | | one should call the emergency number. | | | |
| | | • Place the person cautiously in the supine position on a firm surface. | | | |
| | | **Step 2:** | | | |
| | | **CIRCULATION- Restore blood circulation with chest compressions** | | | |
| | | • Kneel next to the person's neck and shoulders on the right side of the patient. | | | |
| | | • Place the heel of right hand over the center of the person's chest, between | | | |
| | | • the nipples. Place your left hand on top of the first hand. | | | |
| | | • Keep your elbows straight and position your shoulders directly above your hands. | | | |
| | | • Use your upper body weight (not just your arms) as you push straight down (compress) the chest 2 – 2.4 inches (approximately 5 centimeters). Push hard atleast a rate of  120 compressions a minute. | | | |

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| | | <br>**Delivery of chest compressions**<br>**STEP 3:**<br>**Airway: Clear the airway**<br>• -The tongue is the most common cause of airway obstruction in an unconscious patient.<br>• -Open the person's airway using the head- tilt, chin-lift maneuver. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the | | | |

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| | | chin forward to open the airway. <br><br> • -Check for normal breathing, taking no more than 10 sec or not less than 10 seconds. Simultaneously  Look for chest moment, listen for normal breath sounds. <br><br> **STEP 4:** <br><br> ➢ **Breathing:** <br><br>     • Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened. <br><br>     • With the airway is opened (using the head- tilt, chin- lift maneuver), <br><br>     • Pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal. <br><br>     • Prepare to give two rescue breaths. Give the first rescue breath — lasting one second — and watch to see if the chest rises. If it does rise, give the second breath. <br><br>     • If the chest doesn't rise, repeat the head- tilt, chin- lift maneuver and then give the second breath. <br><br>     • Thirty chest compressions followed by two rescue breaths is considered one cycle. | | | |

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| | | • Resume chest compressions to restore circulation.<br><br>• Establish a compression rate of 100 per minute with a ratio of compressions to breaths of 30: 2. Deliver two full breaths after every 30 compressions.<br><br>• When two rescuers are available to administer CPR, one rescuer is positioned at the victim's side and performs external compressions while the second rescuer remains at the victim's head to perform artificial ventilation.<br><br>• After the first minute of CPR, palpate the carotid pulse to assess the effectiveness of CPR and to check for the return of spontaneous circulation. Carotid artery is an artery present in the neck between the trachea and sternohyoid vessel<br><br>**Continue CPR until one of the following takes place:**<br><br>• Spontaneous circulation and ventilation return<br><br>• Another rescuer takes over to provide CPR.<br><br>• The victim is transported to an emergency facility<br><br>• The rescuer is exhausted and unable to continue.<br><br>• The victim is pronounced dead by the physician. | | | |

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| 3 mt | enumerates the complications of cardio pulmonary resuscitation | **Delivery of mouth-to-mouth ventilations.**<br><br>**COMPLICATIONS:**<br>Performing chest compressions may result in<br><br>• fracturing of ribs or the sternum<br>• Liver, lung and spleen injury<br>• Vomiting and aspiration<br>• Gastric distension<br>But cardio pulmonary resuscitation is a life saving procedure; therefore the advantage outweighs the disadvantages. | Teacher explains the complications of cardio pulmonary resuscitation | Students listen | |

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| | | **CONLUSION:** | | | |
| | | Cardiac arrest occurs when the heart ceases to produce an effective pulse and blood circulation. Consciousness, pulse and blood pressure are lost immediately. The risk of irreversible brain damage and death increases with every minute from the time that circulation ceases. Cardio pulmonary resuscitation (CPR) can save the life of a person if it is done within 4 to 6 minutes after a person's heart stopped beating or breathing stopped. | | | |
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