A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIO PULMONARY RESUSCITATION AMONG DEGREE STUDENTS IN A SELECTED COLLEGE,KOMARAPALAYAM

By
301312902

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The Tamilnadu Dr.M.G.R. Medical University, Chennai,

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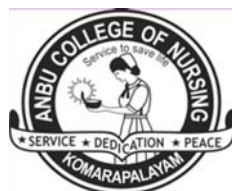*Master of Science*
In
Medical Surgical Nursing (Cardio Vascular and Thoracic Nursing)
under the guidance of

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A DISSERTATION SUBMITTED TO THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERRSITY, CHENNAI. IN PARTIAL FULFIL LMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING.

VIVA VOCE:

INTERNAL EXAMINER: ....

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ENDORSEMENT BY HEAD OF THE INSTITUTIONS.

This is to certify that the dissertation entitled **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIOPULMONARY RESUSCITATION AMONG DEGREE STUDENTS IN A SELECTED COLLEGE, KOMARAPALAYAM."** Is a bonafide research work done by Ms.ANBU EPSI.J. under the guidance of **Prof.M.LATHA**,M.Sc(N),M.B.A,Ph.D.,HEAD OF THE DEPARTMENT OF MEDICAL SURGICAL NURSING.

PRINCIPAL.

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"Leave your life to god, who prompts act and made it possible dedicate the act, the will and the wish all to god almighty."

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ABSTRACT

STATEMENT OF THE PROBLEM:

An evaluative study to assess the effectiveness of structured teaching programme on knowledge regarding Cardio Pulmonary Resuscitation among degree students in selected colleges, Komarapalayam was conducted by as a partial fulfillment of the requirements for the degree of Master of Science in nursing at Anbu college of nursing, Komarapalayam affiliated to the Tamil nadu Dr.M.G.R. Medical University, Chennai.

OBJECTIVES:

1. To assess the knowledge level regarding cardio pulmonary resuscitation among degree students in selected colleges.
2. To find out the relationship between pretest and posttest knowledge score regarding CPR among degree students.
3. To find out the association between knowledge regarding cardio pulmonary resuscitation among degree students with selected socio demographic variables.

HYPOTHESES:

On the basis of the objectives the following hypotheses have been formulated:

H_1: There will be a significant difference between pretest and post test knowledge score regarding cardio pulmonary resuscitation.

H_2: There will be a significant association between the knowledge with selected demographic variables of the degree students (such as age, sex, religion, previous information regarding cardio pulmonary resuscitation).

METHOD OF STUDY

Conceptual framework for the study was based on the open system theory of J.W.Kenny's. Research design used for this study was quasi experimental one group pre test and post test design. The study was conducted in Anbu Arts and Science College, Komarapalayam.. The population for this study was degree students. Purposive sampling technique was used to select the sample.

Data collection tool consisted of demographic variables, questionnaire regarding Anatomy and Physiology of Heart, Cardiac arrest and CPR to assess the level of knowledge among degree students.

The content validity of the tool was done by 5 experts in different fields. Reliability was obtained by Karal Pearson's method, the score was r=0.9 which was highly reliable. Pilot study was conducted in Anbu arts and Science College (other department) to find out the feasibility of conducting the study.

The collected data was tabulated, analyzed and interpreted by using descriptive and inferential statistical methods.

FINDINGS:

Major findings of the study were regarding the effectiveness of STP on the level of Knowledge. The obtained 't' value is 20.66 .Hence the null hypothesis was rejected.

There was significant association was found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their demographic variables such as Source of information (P<0.05). No significant association was found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their demographic variables such as age,sex,father's education, mother's education, residential area, type of family,

previous knowledge, group studied in XII(P>0.05). The stated hypothesis was accepted.

Based on the findings, the implication and recommendations were drawn.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER-I

INTRODUCTION

CHAPTER-I

INTRODUCTION:

"AN UNEXAMINED LIFE IS NOT WORTH LIVING"

- *SOCRATES*

The heart is the center of cardiovascular system and it is vitally responsible for just about everything that gives body life ranging from the transportation of oxygen to the success of the immune system. However, the foods we eat and the amount of activity choose to take part in dramatically affect the overall health of the heart and the many other tissues that make up cardiovascular system.

The heart is a muscular organ about the size of a closed fist that functions as the body's circulatory pump. It takes in deoxygenated blood through the veins and delivers it to the lungs for oxygenation before pumping it into the various arteries (which provide oxygen and nutrients to body tissues by transporting the blood throughout the body).

Each year, a number of persons suffer with an accident or illness, severe enough to stop their breathing and leads to respiratory arrest. In a small number of these cases, it will even stop their heart beating and leads to cardiac arrest. Sudden cardiac arrest is a major cause of death in developed countries. Sudden death occurs when heartbeat and breathing stops.

The other common causes of sudden death include heart attack, electrical shock, drowning, choking, suffocation, trauma, drug reactions, and allergic reactions. The best chance of ensuring their survival is to give them emergency treatment known as cardiopulmonary resuscitation (CPR).

CPR can consist of many different things, but the initial, vital part is Basic Life Support (BLS).Cardio means "of the heart" and pulmonary means "of the lungs". Resuscitation is a medical word that means "to revive" or bring back to life. Sometimes cardio pulmonary resuscitation (CPR) can help a person who has stopped breathing, and whose heart may have stopped beating, to stay alive. Despite advances in cardiopulmonary resuscitation (CPR) methods, including the introduction of the automatic electrical defibrillator (AED) and therapeutic hypothermia, only about 10 % of adult out-of-hospital cardiac arrest (OHCA) victims survive to hospital discharge, and the majority of survivors have moderate to severe cognitive deficits 3 months after resuscitation.

Resuscitation from cardiac arrest is the ultimate whole body ischemia-reperfusion (I/R) injury affecting multiple organ systems including brain and heart. In most cases, defibrillation and other means of advanced life support are not immediately available. In urban settings it takes an average of nearly ten minutes for professional help to arrive. During this time victims can only rely upon CPR provided by educated bystanders. Therefore a substantial burden of responsibility lies on the shoulders of educators who need to pass on their knowledge and skills of CPR to their trainees in a way simple enough to be remembered and recalled rapidly in a highly stressful moment. It has been shown that correctly performed bystander CPR may positively influence short and long- term survival of cardiac arrest victim.

Every nurse and physician should be skilled in CPR because cardiac arrest, the sudden cessation of breathing, and adequate circulation of blood by the heart, may occur at any time or in any setting. Resuscitation measures are divided into two components, basic cardiac life support and advanced cardiac life support. The American Heart Association establishes the standards for CPR and is actively

involved in teaching BCLS and ACLS to health professionals. The American Heart Association recommends that nurses and physicians working with patients be certified in BCLS and ACLS. CPR alone is not enough to save lives in most cardiac arrest. It is a vital link in the chain of survival that supports the victim until more advanced help is available. The chain of survival is composed of the following sequence: early activation of the EMS system, early CPR, early defibrillation and early advanced care.

Recommending that chest compressions be the first step for lay and professional rescuers to revive victims of sudden cardiac arrest, the association said the A-B-Cs (Airway-Breathing-Compressions) of CPR should now be changed to C-A-B (Compressions-Airway-Breathing).For more than 40 years, CPR training has emphasized the ABCs of CPR, which instructed people to open a victim's airway by tilting their head back, pinching the nose and breathing into the victim's mouth, and then giving chest compressions. This approach was causing significant delays in starting chest compressions, which are essential for keeping oxygen-rich blood circulating through the body. Changing the sequence from A-B-C to C-A-B for adults and children allows all rescuers to begin chest compressions right away.

People who handle emergencies such as police officers, firefighters, paramedics, doctors and nurses are all trained to do CPR. Many other teens and adults like lifeguards, teachers, child care workers, and may be even your mom or dad know how to do CPR too. Many people may think you need to get a degree to get a healthcare job, but the truth is many jobs simply require applicants to be CPR and First Aid certified Courses to receive certification in CPR and First Aid are offered at colleges, technical schools, and Red Cross facilities across the country. This makes getting certified easy and very accessible to anyone. People can get both certifications as young as 16 years of age. This means they can start getting credible

work experience at an earlier age, which will only help them out more down the road. And since the courses are so short, it does not have to interfere with high school.

NEED FOR THE STUDY

CPR is a rescue procedure to be used when the heart and lungs have stopped working. There is a wide variation in the reported incidence and outcome for out of hospital cardiac arrest. These differences are due to definition and ascertainment of cardiac arrest as well as differences in treatment after its onset.

Several authors described the problem of poor performance in CPR, even when provided by medical professionals. Numerous investigations have reported the problem of poor skills retention after various CPR courses. Studies reporting the need for improvement of resuscitation techniques led to the recent changes in BLS and ALS algorithms.

Dangers of Sudden Cardiac Arrests (SCA) that can lead to death of an individual within a few minutes. As per WHO census statistics mortality due to cardiac arrest approximately 4280 out of every one lakh people die every year from SCA in India alone. After a cardiac arrest there are four to six minutes before brain death and death occur. Chances of survival reduce by 7-10 percent with every passing minute. It is a silent epidemic. Cardiac arrest is reversible if the victim is administered prompt and appropriate emergency care. This generally involves administration of cardiopulmonary resuscitation (CPR), shock treatment to the chest to reset the heart's rhythm (defibrillation) and advanced life support.

In India the annual incidence of sudden cardiac death accounts for 0.55 per 1000 population. The survival rate of a sudden cardiac arrest is almost less than 1%.

Sudden cardiac death constitutes 40-45% of cardiovascular deaths and out of this almost 80% are due to heart arrhythmia disturbances or arrhythmia.

Maximum arrests were because of cardio respiratory arrests. Immediate survivors were 5 out of 6 (83.3%), out of 5 patients only 2 were alive at the end of 24 h (40%), and none of them survived to be discharged. Overall survival to hospital discharge was 3.8% (1.7-13%) of a 3,220 pooled patient group. Analysis of their functional recovery found good outcome in 86.7% (44-89%), moderate impairment in 10.2% (8.5-44%) and severe impairment in 3.1% (2-36%) of survivors from a cohort of 1679 pooled patients. Although, survival from prehospital arrest is diminished in geriatric groups, those who survive often have good functional recovery.

Heart disease is the world's largest killer, claiming 17.5 million lives every year. About every 29 seconds, an Indian dies of heart problem. As many as 20,000 new heart patients develop everyday in India, six core Indians suffer from heart disease and 30 percent more are at high risk. The risk of sudden cardiac death from coronary artery disease in adults is estimated to be 1 per 1,000 adults 35 years of age and older per year. About 75 percent to 80 percent of all out-of-hospital cardiac arrests happen at home. Hence, being trained to perform CPR can make the difference between life and death for a victim.

Each year almost 330,000 peoples die from heart disease. Half of these will die suddenly, outside of the hospital because their heart stops beating. The most common cause of death from heart attack in adult is a disturbance in the electrical rhythm of the heart or ventricular fibrillation. It can be treated by applying an electrical shock to the chest. One way of buying time until a defibrillator becomes available is to provide artificial breathing and circulation by performing CPR.

Over one million heart attacks happen every year and more than 20% of people die before ever reaching a hospital. Latest data shows that cardiac arrest is becoming the number one cause of death. In fact, studies show that 80% of all cardiac arrests happen at home which will most likely be a family member or friend.

Coronary artery disease (CAD) was observed in 66 (38%) and acute myocardial infarction documented in 30 (17%). At least 1 of 3 CAD risk factors – hypertension, diabetes, or smoking was observed in 80.6%. Proportion of subjects with at least one risk factor for CAD was similar in the age groups above and below 50 years (67.6%).

Cardio pulmonary Resuscitation has been used extensively in the hospital setting since its introduction over 3 decades ago. Provision of adequate chest compressions remains a standard of care for optimal outcome in cardiopulmonary arrest. Given the recent changes to CPR rates and a greater emphasis on pushing faster and deeper, this has raised questions surrounding rescuer fatigue and efficacy of compressions. While a body of work has been undertaken on previous CPR rates and associated fatigue levels, there is a shortage of literature on the latest CPR rates and associated rescuer fatigue in the hospital and prehospital settings

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In April 2008, the American heart association took steps to simplify the process of helping victims of cardiac arrest by introducing "hands only" CPR. About one third of people who suffer a cardiac arrest at home or at a public place actually receive help, bystanders could be afraid to initiate CPR for fear that they will do something wrong or won't know what to do. Others may be reluctant to perform mouth to mouth breathing for fear of contracting an infection. The American heart association proposed the new guidelines in order to allow bystander who have not been trained in conventional CPR or who may fear making mistake a way to offer help.

Survival in hospital and they reviewed that CPR records, 44% of the patient initially survived following CPR, and the 1 –year survival rate was 5% patients with shorter durations of CPR and those administered fewer procedures and medications during CPR survival longer than patients with prolonged CPR. Knowledge of the likelihood of survival following CPR for subgroups of the hospital population based on prearrest and intra arrest factors can help patients, their families, and their physicians decide with compassion and conviction, in what situations CPR should be administered.

Patients defibrillated at an early stage among the non-monitored patients had a survival rate similar to the corresponding group in monitored areas. Many institutions have a one-tiered defibrillation system, in which defibrillation is delivered once the CPR or ACLS team arrive. The CPR team brings a manual defibrillator with them, or manual defibrillators are placed around the institution so that one can be brought to the scene for use by the advance team. Bystander CPR (comprising airway opening, rescue breathing, and chest compressions: combined with rapid call for ambulance response) improves survival rates from cardiac arrest 2-3 fold.

Various studies suggest that in out-of-home cardiac arrest, bystanders, lay persons or family members attempt CPR in between 14% and 45% of the time, with a median of 32%. Internationally, rates of bystander CPR reported to be as low as 1% and as high as 44%. However, the effectiveness of this CPR is variable, and the studies suggest only around half of bystander CPR is performed correctly. A recent study has shown that members of the public having received CPR training in the past lack the skills and confidence needed to save lives. These experts believe that better training is needed to improve the willingness to respond to cardiac arrest.

In the light of above, the investigator found it is desirable to assess the knowledge and skill in CPR technique among the degree students and also to update the knowledge and improvement in skill. The way to learn CPR is to practice CPR. Educating the students and creating awareness in helping them to learn more about CPR and it help to prevent death occurring due to cardiac arrest. Early initiation of CPR improves the chance of successful resuscitation and survival.

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of structured teaching programmes on knowledge regarding cardio pulmonary resuscitation among degree students a in selected college, Komarapalayam".

OBJECTIVES

- To assess the knowledge level regarding cardio pulmonary resuscitation among degree students in selected colleges.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding cardio pulmonary resuscitation among degree students in selected colleges.

- To find out the association between knowledge regarding cardio pulmonary resuscitation among degree students with selected socio demographic variables.

OPERATIONAL DEFINITION

Assess: It is the organized, systematic and continuous process of collecting data from the degree students regarding cardio pulmonary resuscitation.

Effectiveness: It refers to the extent to which the structured teaching programme on cardio pulmonary resuscitation has improved the knowledge of students after the implementation of the structured teaching programme as evidenced by the differences in the pretest and post test**.**

Structured Teaching Programme: It refers to systematically developed Instruction designed to provide information regarding cardio pulmonary resuscitation to degree students.

Cardio pulmonary resuscitation: it is a simple technique used to restore and maintain breathing and circulation in cardiac arrest victims.

Knowledge: The sum of what is known regarding cardio pulmonary resuscitation.

Degree students: who are undergoing the degree (B.A.English) in a selected college.

HYPOTHESIS

H_1: There will be a significant difference between pretest and post test knowledge score regarding cardio pulmonary resuscitation.

H$_2$: There will be a significant association between the knowledge with selected demographic variables of the degree students (such as age, sex, religion, previous information regarding cardio pulmonary resuscitation).

ASSUMPTION

- Most of the degree student may have some knowledge regarding cardio pulmonary resuscitation.
- There will be enhancement in the knowledge of the degree students after administration of STP.

LIMITATION

The study was conducted to those who were,

- available during data collection period
- in the age group of 19-22 yrs.
- willing to participate with study
- able to read and write English

THEORETICAL FRAME WORK

Theoretical framework provides closed description of variables suggesting ways or method to conduct the study and guiding the interpretation, evaluation and integration of study finding stated that (Wood and Harber, 1994).

Theoretical Framework for this study was based on open system theory of J.W.Kenny's (1998). In this main focus is on the part and their interrelationship which makeup and describe the whole. He defined system 'as a complex interaction which means the system consists of two or more converted elements which form an organized whole.

In the present study, degree students considered as a system with the elements with variable factors related knowledge regarding CPR, which interacted with the students in determining their knowledge.

INPUT

According to the theorist input refers to energy, matter and information. All system must receive varying type and amounts of information from the environment. In this system the input was to maintain its homeostasis. In this study the information related CPR.

Elements which has,

- Closed ended questionnaire

- STP on CPR

THROUGHOUT

According to Kenny through put refers to the process by which the system process inputs and release on output.

- In the present study the throughput considering out processing of inputs which are pre and post test regarding the knowledge of CPR

OUTPUT AND FEEDBACK

According to Kenny feedback refers to output which is returned to the system that allows it to monitor itself overtime in an attempt to more clearly to a steady state known as equilibrium or homeostasis. Feedback may be +ve,-ve or neutral.

In this study the output is the post test knowledge score of students which are divided into 5 groups such as very poor, poor, average, good and excellent.

Feedback is difference in mean percentage of pre and post test knowledge score of student regarding CPR.

Demographic Variables

Age
Sex
Father's Education
Mother's Education
Type of Residential Area
Type of Family
Religion
Previous knowledge of CPR
Source of information
Group studied in XII

Input

Closed ended Questionnaire

Structured Teaching Programme Includes

-Physiology of Heart

-importance of CPR

-Steps of CPR

Throughput

Pretest

Structured Teaching Programme

Posttest

Output

Posttest Knowledge Score on CPR Among degree students

Excellent

Good

Average

Poor

Very poor

Feedback

◆ Y-X=E (Y= Posttest Scores, X = Pretest Scores, E= Effectiveness Of Structured Teaching Programme)

◆ T= Test between pre and posttest score

Fig 1.1.J.W.KENNY'S OPEN SYSTEM MODEL

CHAPTER-II

REVIEW OF LITERATURE

Review of literature is a key step in research process. Nursing research may be considered a continuous process in which knowledge gained from earlier studies is an integral part of research in general. One of the most satisfying aspects of the literature review is the contribution it makes to the new knowledge, insight and general scholarship of the researchers. 'A literature review is a complication of resources that provide the ground work for future study.'

Review of literature is defined as a broad, comprehensive, in depth, systematic and critical review of scholarly publications, unpublished scholarly print materials, audio visual materials and personal communications.

The literature reviewed has been presented under the following headings:

A) Studies related to incidence and prevalence of cardiac arrest

B) Studies related to knowledge on CPR

C) Studies related to structured teaching program in CPR

A) STUDIES RELATED TO INCIDENCE AND PREVALENCE OF CARDIAC ARREST

TVS Murthy and Bhavna Hooda, **September 13 2009.** The study conducted related to cardio cerebral resuscitation is better than CPR. The guidelines for CPR have been in place for decades; but despite their international scope and periodic update there has been improvement in survival rates in out-of-hospital cardiac arrests for patients who did not received early defibrillation. Instituting the new cardio cerebral resuscitation protocol for managing pre-hospital cardiac arrest improved survival of adult patients with witnessed cardiac arrest and an initially shock able rhythm.

Dr. H. Shankar (2008). The study conducted related to cardiac arrest and CPR. The study shows that the sudden cardiac arrest in the hospital setup can be anticipated at any time. Are be prepared to handle such an event around us? We are experienced in our emergency department during the month April 2008. The patients were successfully resuscitated and went home after few days walking their own without any neurological deficits.

Benjamin S. Abella et al(2005) conducted a study on **quality of cardiopulmonary resuscitation during in hospital cardiac arrest. The main objective of this study is** to measure multiple parameters of in-hospital CPR quality and to determine compliance with published American Heart Association and international guidelines. The sample consisted of 67 patients who were experienced in-hospital cardiac arrest at the University Of Chicago Hospitals, Chicago. The result of this study indicates that the importance of high-quality CPR suggests the need for rescuer feedback and monitoring of CPR quality during resuscitation effort.

The United States government (2003) publishes very detailed figures on the incidence and prevalence of heart disease. Incidence is the number of events or new diagnoses per year. Prevalence is the number of person with the disease at any given time. Thus, there were 13.2 million Americans with heart disease in 2003 (this is prevalence - number at any given time) and there were 1.2 million Americans with a diagnosis of new or recurrent coronary heart disease in 2003 (this is the annual incidence - number of new or recurrent cases in a year). The American Heart Association distills this information into an annual summary called Heart Disease and Stroke Statistics. 34% of Americans have cardiovascular disease - defined as coronary heart disease (16 million), stroke (5.8 million), high blood pressure 73 million), heart failure (5.3 million). The annual incidence of a new or recurrent

coronary attack is 1.2 million (770,000 will have a new coronary attack and 430,000 will have a recurrent attack). The lifetime risk of developing coronary heart disease assume you make it to age 40 is 49% for men and 32% for women. Every minute in the United States someone dies from coronary heart disease. The average number of years of life lost due to sudden cardiac arrest is 15 years 50% of men and 64% of women who die suddenly from coronary heart disease have no previous symptoms of the disease.

Eisenberg MS, Becker LJ, et al. 2003. Getting a handle on the number of sudden cardiac arrests is a bit trickier. If one looks only at death certificates the figure is 456,000 per year. I think a more realistic figure is 155,000, the number of sudden deaths in which emergency medical services are called and attempt to resuscitate the individual. This lower figure gives a more realistic picture of the number of persons who are potentially "resuscitatable" from cardiac arrest since it does not include persons who are found cold and dead (even though their deaths may be coded as acute coronary heart disease). To put this in perspective, the EMS system in King County in 2000 responded to 1428 calls for cardiac arrest but attempted resuscitation on 808. The other 620 were considered dead on arrival. In addition the vital statistics office in King County recorded 1029 out of hospital deaths from heart disease for which the EMS system was not called. There were also 1249 deaths in hospital without an out of hospital cardiac arrest. (The total deaths from heart disease was 3705 during the year) EMS personnel responded to 57% (1428/2457) of all out of hospital death events but only 39% (1428/3705) of all deaths.

Singh L Ranbir and Team in Rims Hospital, Manipur.(2002) A study of 32 children with near drowning, admitted in RIMS Hospital, Manipur during January 1997 to December 2000 revealed that near drowning accounted for 0.29% of total

pediatric hospital admissions. The prominent characteristics of pediatric near drowning were male sex 65.6%, age below 3 years 75%, summer season 43. 7%, residential pond 71.9%, morning hours 56.3%. 26 (81.2%) cases had varying degrees of pulmonary aspiration. Neurologically, 5 (15.6%) cases were awake 21 (65.6%) cases had blunted levels of consciousness and 6 (18.8%) cases were comatose at the time of arrival. Following cardiopulmonary resuscitation (CPR) at the scene of rescue and appropriate respiratory and cardiovascular support on arrival, 31 (96.9%) cases had intact survival and only 1 (3.1%) had mild neurological sequelae at the time of discharge. There was no mortality.

Vanderschmidt H, Burnap TK, Jhwaites J.K 1975 Sep; 13(9) A study conducted by evaluation of a cardio pulmonary resuscitation use for secondary schools. The objective of this study was to test the feasibility of teaching secondary school students to perform cardio pulmonary resuscitation fifty five percent of the practice group in the initial test and 31 percent of the retention studies were able to perform the skills. The study suggests that it is possible to train secondary school students to perform the ABC, of CPR if they have an opportunity to practice their skill. The study also suggests that the teacher training is an important factor.

B) STUDIES RELATED TO KNOWLEDGE ON CPR:

Resuscitation is a technique used by professional health care staff, as well as members of the public. It is essential for all health care professionals to be able to perform basic life support, and training for staff who is commonly involved with resuscitation attempts must take place on a regular basis. If a cardiac arrest occurs in the community, the patient must be moved onto a hard surface and placed on his or

her back. Quickly make the environment appropriate for performing life-saving procedures. This could mean moving chairs or tables.

Tom Sirmons, August 2, 2011, A wealth of recent research reaches the same conclusion: those who suffer cardiac arrest are far more likely to survive long-term if a bystander immediately begins proper CPR. That's especially true when emergency medical personnel are unable reach the scene within eight minutes. BUT – considering that brain damage from lack of blood flow begins as soon as four minutes after heart failure, the need for CPR administration is vital, in the truest sense of that word, no matter how good you think EMT response-time is in your area. And there's more: If you learned CPR five or more years ago, you are almost certain to apply it incorrectly. Granted, survival rates are higher even among those who receive outdated CPR, but the American Heart Association now stresses that maintaining blood flow to the organs is more important than trying to restore breathing via mouth-to-mouth resuscitation. In fact, a study published in The Lancet several months ago found survival rates among heart attack victims are substantially higher when only proper chest-compression is administered. The old model of alternating compressions with breaths into the victim's lungs is less effective. Also, note the italicized word above – proper .Chest compressions must be performed with the right combination of repetition and depth to achieve optimal results. In a word, that means training. It's not a matter of instinct or common sense to know how hard and how often to press down on a cardiac victim's sternum. The fact is that it's harder and more frequent than an untrained person is likely to realize. Here's a hint about compressions: more than one per second! While a 911 dispatcher can you give you basic information over the phone, nothing takes the place of training, which is so readily accessible in almost every community!

Karan Prakash Singh 2 May 2011 and team The study to assess the knowledge and personal experience with CPR among dentist in Udaipur India. This study shows that 75.9% of dentist had received information about basic CPR but only 66.0% had the current concept of performing it and only 12% had received practical training in basic CPR. 1 in 10 dentists had seen patients suffering from cardiopulmonary arrest in their practice, but none –of them mentioned any fatality, because CPA. The level of knowledge was significantly higher among faculty dental practitioner compared with local dental practitioner. In addition a positive linear correlation was found between educational level and knowledge level.

Malekk J, Kurzova A, Berankova M and Knor J, 2007 September 20, The study conducted regarding the knowledge level of CPR in secondary school students of non-medical specialization in the Czech Republic. The aim was constant attention given to the education in CPR mainly among adolescents. Results demonstrated that in spite of the effort to increase the level of knowledge in CPR in Laymen, the actual level of knowledge is low and more frequent repetition of courses should be considered. In the future, we shall evaluate the effectiveness of new educational film.

Losert H et al (2006) conducted a observational study on quality of cardiopulmonary resuscitation among 95 highly trained staff nurses in an emergency department of the tertiary care hospital, Austria. The findings of this study was highly trained professionals in an emergency department can achieve appropriate chest compression rates during CPR with a low hands-off ratio. Increased attention must be paid in all situations to the avoidance of hyperventilation.

Thoren Ann-Britt et al (2005) has conducted a study on Possibilities for, and obstacles to, CPR training among 401cardiac care patients and 311co-habitants. The aim of the study was to investigate the level of cardiopulmonary resuscitation (CPR) training among cardiac patients and their co-habitants. According to the answers given by the

patients, 46% of the patients and 33% of the co-habitants had attended a CPR course at some time. Younger persons were more often willing to undergo training than older persons. Of those patients who had previously attended a course or who were willing to undergo training, 72% were prepared to do so together with their co-habitant. The main outcome was the two-thirds of the patients did not believe that their co-habitant had taken part in CPR training. More than half of these would like their co-habitant to attend such a course. Seventy-two percent were willing to participate in CPR instruction together with their co-habitant. Major obstacles to CPR training were doubts concerning the co-habitant's willingness or physical ability and their own medical status.

NURSING TIMES, October, 2003, In the hospital environment, remove the headboard from the bed and adjust the mattress, so it is suitable for performing chest compressions, and move the cardiac arrest trolley next to the patient's bed. These procedures should take a very short time when you work effectively as a team. The advanced life support stage continues until resuscitation efforts are terminated or the patient is transferred to intensive care. Good basic life support and defibrillation are the top priority. There is no robust data to show that drugs used in cardiac resuscitation alter long-term outcomes (Resuscitation Council UK, 2002).Performing basic life support.

BMY Cheung (2003) Conducted a study regarding knowledge of CPR among the public by telephone questionnaire survey in Hongkong . Telephone interview method was used for this study. Study was conducted among 357 people; approximately 12% had received CPR training. CPR knowledge in Hongkong was poor, even among the previously trained and especially with regard to circulatory maintenance. The most common reason for not taking CPR training was lack of time. Intensified educational efforts and exploration of new approaches to improve this first stage in the chain of survival are warranted.

Sanders AB, Kern KB, and Berg RA (2002) A study conducted by on survival and neurological outcome after cardio pulmonary resuscitation with four different chest compressions ventilation ratios. The objective was to determine 24 hours survival and neurological outcome. The result shows that there was no statistically significant difference in 24 hours survival among 4 groups. There were significant differences in 24 hour Neurological function, as elevated by using the swine cerebral performance category scale.

Celenza T, Gennat, Brien D, **2002 November,** The study conducted on community competence in CPR. The aim of this study was to determine community application of CPR skills in an emergency and to assess the value of training programmes in raising community competence. Telephone survey was conducted, the population was chosen randomly. Sub sample performed a practical demonstration of CPR skills using manikin as the victim, performance was assessed by two observers using pre-determined criteria.

Lan H Kerridge et al (1998) conducted a study on decision making in CPR: attitudes of hospital patients and healthcare professional. The purpose of this study was to examine the opinions of patients and healthcare professionals regarding the process of making decisions about cardiopulmonary resuscitation. The samples consist of 511 health care professionals and 152 patients at the John Hunter Hospital, Newcastle, New South Wales. 80% of patients and 99% of healthcare professionals thought patients' views should be taken into account when making CPR decisions. More patients than healthcare professionals indicated that doctors should be the main decision makers. Most patients and healthcare professionals wanted their views in their medical records. Results indicated that the 80% patients, 99% of health care professionals want to be involved in CPR decision making and many want some form of advance directives.

C) STUDIES RELATED TO STRUCTURED TEACHING PROGRAM IN CPR

Resuscitation Council (UK) Both ventilation and compressions are important for victims of cardiac arrest when the oxygen stores become depleted: about 2 - 4 min after collapse from ventricular fibrillation (VF), and immediately after collapse for victims of asphyxial arrest. Previous guidelines tried to take into account the difference in causation, and recommended that victims of identifiable asphyxia (drowning; trauma; intoxication) and children should receive 1 min of CPR before the lone rescuer left the victim to get help. But most cases of sudden cardiac arrest out of hospital occur in adults and are of cardiac origin due to VF (even though many of these will have changed to a non-shockable rhythm by the time of the first rhythm analysis). These additional recommendations, therefore, added to the complexity of the guidelines whilst applying to only a minority of victims. Many children do not receive resuscitation because potential rescuers fear causingharm. This fear is unfounded; it is far better to use the adult BLS sequence for resuscitation of a child than to do nothing. For ease of teaching and retention, laypeople.

White L, Rogers J, Bloomingdale M, Fahrenbruch C, Culley L, Subido C, Eisenberg M, Rea T, 2010 Jan 5 ..A total of 100 students underwent the three hour training programme, ranging in age from 14 -19 years. Of these, 44 (44%) were female and 56 (56%) were males.   70% of students performed all CPR steps and 75% all AED steps.   Students scored better in chest compression (CC) performance, particularly the parameters, achieving adequate release of CC (85%), correct CC depth (83%) and correct hand positioning (66%).   50% of students achieved the correct CC rate according to the set standard (90-110/min).   Students tended to perform CC at a faster rate as 90% of students were achieving a rate between 90-120/min. No student was performing CC under 90/min.50% of students achieved, on average, the correct ventilation volume according to the accepted standard (500 – 800mls). While 84% of students were delivering ventilations with an open airway,

40% of students were delivering ventilations in excess of the standard. This study shows that school children have the capacity to acquire CPR/AED skills from a three hour programme in BLS. Consistent with previous studies, students also had greater confidence in their ability to perform CPR/AED skills and a greater willingness to intervene in an emergency situation after training (Vaillancourt, 2008, Donohoe et al. 2006).The results of this study show that students performed quality CC at an acceptable standard. They had greater difficulty performing adequate ventilations, with problems inflating in excess of the standard. This supports existing evidence that delivering ventilations is a difficult skill for lay people and argues that it would be reasonable to simplify CPR procedures and concentrate lay rescuers' energy on CC (Sanders and Ewy, 2005, Kellum, 2007). Chest compression-only CPR has also the added advantage of eliminating mouth-to-mouth contact and associated risk of contracting infection, which was identified as the greatest barrier to performing CPR in this study.

A study conducted by **White L et.al (2010)** on Dispatcher-assisted cardiopulmonary resuscitation: risks for patients not in cardiac arrest reveals that the frequency of serious injury related to dispatcher-assisted bystander CPR among non arrest patients was low. When coupled with the established benefits of bystander CPR among those with arrest, these results support an assertive program of dispatcher-assisted CPR.

Shanta Chandrasekaran, Sathish Kumar, 2010, A cross-sectional study was conducted by assessing the responses to 20 selected basic questions regarding Basic Life Support, among students of nursing colleges in Tamilnadu, India to study the awareness of Basic Life Support (BLS), in nursing colleges. After excluding the incomplete response forms the data was analysed on 1,054 responders. The results were analysed using an answer key prepared with the use of the Advanced Cardiac

Life Support manual. Out of 1,054 responders no one among them had complete knowledge on BLS. Only 2 out of (0.19%) had secured 80 - 89% marks, 10 out of (0.95%) had secured 70 - 79% marks, 40 of (4.08%) had secured 60 - 69% marks and 105 (9.96%) had secured 50 - 59% marks. A majority of them that is 894 (84.82%) had secured less than 50% marks. Awareness of BLS among students in nursing colleges is very poor and teaching is required.

Karthik Murugiah And Team In 2010 A study conducted about the widespread knowledge of CPR is a critical to improving survival in sudden cardiac death. YouTube and internet video site which is growing source health care information for source, content and quality of information about CPR. Of 800 videos screened 52 met inclusion criteria with mean duration of 233 and view count 37 per day. 48 % videos were by individuals with unspecified credentials. Scene safety assessment in 65% videos. Only 69% videos demonstrated the correct compression-ventilation ratio while 63.5%, 34.6%, and 40.4% gave information on location rate and depth of chest compression respectively. 19% videos incorrectly recommended checking pulse. Videos judge the best source for CPR information were not the once most viewed. Information on this platform is unregulated; hence content by trusted by sources should be posted to provide accurate and easily accessible information about CPR. You Tube may have a potential role in video assisted learning of CPR and as a source of information for CPR in emergency.

Anil Kumar Parashar, February 2010 A study was conducted regarding the effectiveness of planned teaching programme (PTP) on knowledge and practice of Basic Life Support among high school students in Bangalore. The research design used for the study was quasi-experimental design. The sample consisted of 40 rural high school students. The study was conducted in rural high school of Mangalore and the subjects were selected through simple random sampling technique. The study

showed that majority (87.5%) of the students had inadequate knowledge and (100%) had poor practice. The planned teaching programme facilitated them to update their knowledge and practice related to Basic Life Support. Hence, the planned teaching programme is an effective teaching strategy to improve knowledge and practice of sample on BLS.

A study conducted by **Settgast A et.al (2006**) on an innovative approach to teaching resuscitation skills reveals that residents benefit from additional teaching and practice in actual performance of basic skills used during cardiac arrests. Furthermore, our data demonstrate that comfort levels among house officers increase when they are given the opportunity to practice these skills.

Hassan Zaheer [Jinnah Medical & Dental College (JMDC), Karach] **&Zeba Haque [Dow International Medical College (DIMC), Karachi](2002)** was done a cross sectional study was conducted by using responses to a questionnaire regarding BLS by 61 students in Pakisthan. The results were analyzed with SPSS version 11.101. 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 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<0.0A significant number of students were aware of the general idea of BLS which was assessed by the correct responses. A large number of students knew about the abbreviation, purpose and importance of the maneuver (first, second

and last question) (p<0.001) (Table). Only [(T1)] 10.9% students replied incorrectly (p<0.001).On the contrary, a big number of students responded incorrectly to the questions on the skills involved in BLS (CPR). On an average only 18%, (p<0.001) provided correct answers. Of all 36.66% students did not know about BLS and the rest gave wrong answers.. It shows that about half of the students had heard about the BLS course. However significantly higher student population insisted to have it included in the undergraduate curriculum (68 out of 86, p<0.0015).

Catherine Madden(2002) The study used an across methods design and included two phases. In Phase 1, 100 post-primary students from three schools undertook the 'Save a Life' programme. Using pre and post-tests, a questionnaire was given to students before and after training to evaluate their knowledge, attitudes, willingness and anxieties towards performing CPR/AED. After the programme, students' CPR/AED psychomotor skills were assessed in a simulated cardiac arrest scenario using a Resusci-Anne manikin and the Laerdal PC skills reporting system. In Phase 2, focus group interviews were conducted with nursing students to explore their experiences of the service learning experience. Informed consent was obtained from both the school students and the nursing students and ethical approval was secured.

Pauline (1998)conducted a study to assess the nurses level of knowledge regarding CPR found that only 2.6% nurses had adequate knowledge, 44.7% had moderately adequate knowledge and 52.7% had inadequate knowledge. She concludes that resuscitation knowledge should be refreshed and updated regularly.

Nahigian E, Tutuska AM, Wieser MA, 1996 June, The study conducted by on making a CPR practice decision. This investigation explored whether there are significant differences between CPR. The purpose of the study was to validate a decision to discontinue reliance on manikin generated strips to document satisfactory

performance of CPR manikin practice skills. One rescuer and two rescuer CPR strips were blindly collected from all CPR course participants during a six month period. The result indicated no significant difference between the two methods of evaluation.

CHAPTER-III

RESEARCH METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure for gathering valid and valuable data for the purpose of investigation. The methodology of this study includes the research approach, research design, setting of the study, population sample and sampling technique, development of tool, data collection procedure and plan for data analysis.

RESEARCH DESIGN AND APPROACH:

Research design refers to the researchers overall plan for obtaining answer to the research questions and it spells out the strategies that the research depots to develop information that is adequate, accurate objective and interpretable. (Polit and Hungler, 2002)

The design selected for the present study was quasi experimental design and approach in which one group pre and post design without control group.

RESEARCH DESIGN

O1---------x----------O2

O2-O1=E

The symbols used are:

O1 - knowledge of CPR before implementing structured teaching programme.

X - Structured teaching programme regarding CPR

O2 - knowledge of CPR after implementing structured teaching programme

E - Effectiveness of structured teaching programme

SETTING OF THE STUDY:

The study was conducted in Anbu Arts and Science College, Komarapalayam, Namakkal.It is nearly 3km away from the komarapalayam bus stand.

POPULATION:

Population refers to the aggregate or totally of those conforming to a set of specification. (polit and Beck,2006)

The population of this study was degree students.

SAMPLING AND SAMPLING TECHNIQUE:

a)Sample

Sampling refers to the process of selecting the portion of population to represent the entire population. (Polit and Hungler, 2002)

The students studying in Anbu arts and science college,Komarapalayam.

b) Sample size

Sample is subset of the population selected for a particular study and the number of sample are the subjects.(Burns N,2001)

The sample size was 50 students in a selected college, komarapalayam.

c) Sampling technique

Sampling technique refers to the process of selecting a portion of the population to represent the entire population.(Polit and Beck,2007)

Purposive sampling technique is a judgment sampling that involves the conscious selection from the research of certain subjects of element to include the study.(Denise F Polit,2004)

Purposive sampling technique was used to select the subjects for the study.

INCLUSION CRITERIA:

This study was conducted for the student who were,

- degree students

- studying in Anbu Arts and science college

- age group(19-22)

- able to read English.

EXCLUSION CRITERIA:

- Not willing to participate

- Not able to read English

- Not available during the time of data collections

DEVELOPMENT OF TOOLS:

The following tools was used for the present study-

1. Structured teaching programme regarding CPR among degree students.

2. Questionnaire to assess the knowledge regarding CPR among degree students.

THE STEPS USED FOR PREPARING TOOL:

1. Review of related literature:

The literature (nursing book, medical and surgical book, journals, reports and articles) was referred to prepare the tools and guide also consulted.

2. Preparation of tool:

A) Lesson plan

It consists of preface, physiology of heart, indications of CPR, importance of CPR, steps in CPR and complications of CPR.

B) Questionnaire-

It was prepared to assess the knowledge of degree students regarding CPR.

3. Consultation with guide and research committee

The blue prints were given to the experts in research committee .The research guide and committee members were consulted before finalizing the tool.

4. Preparation of the final draft:

Final draft of the tool was prepared after consulting with the expert and research committee.

DESCRIPTION OF THE TOOL:

Construction of Questionnaire

The questionnaire consists of 2 parts.

Part A:

It consists of demographic characteristics such as age, sex, Father's education, Mother's education, Type of family, Residential area, Religion, previous knowledge of CPR.

Part B:

It consists of knowledge items regarding CPR.This section consists of 45 items. Each item has four options with one most correct answer. For each item, the

correct answer carriers the score of 'one' and wrong answer carries the score of 'Zero'. There for 45 items there was 45 maximum obtainable score.

Scoring Procedure

To assess the level of knowledge of students, the score was grouped into item like very poor, poor, average, good and very good based on knowledge scores.

Scoring procedure

Table: Scoring the level of knowledge

Level of knowledge	Percentage of scores	Actual scores
Very poor	<20%	0-9
Poor	21% to 40%	10-18
Average	41% to 60%	19-27
Good	61% to 80%	28-36
Very Good	81% to 100%	37-45

4. Test of Validity and Reliability

a) Validity

Validity is the degree to which on instrument measure what it is supposed to measure.(Polit and Beck,2007)

Content validity of the questionnaire and lesson plan was established and sent to experts from various fields such as medical and surgical nursing (n-3), doctorate in medicine (n-1), biostatician (n-1).Their opinion and suggestions was considered to modify the tools.

b) Reliability

Reliability of the tools was tested by implementing the tool and structured teaching programme on 5 students admitted in other departments in anbu arts and Science College. Test retest method where karl's pearsons correlation formula was used to find out the reliability of tool. The r value was r = 0.9.

Ethical Consideration

Prior to the data collection written permission was obtained from the Principal, Anbu Arts and Science College, komarapalayam.

Data Collection Procedure:

Period of data collection

During this period, the investigator collects both pre test, teaching with structured teaching programme and then posttest.

Stages of data collection

The data was collected in following three steps:

a) Pre-test

Pretest was conducted among degree students who were admitted in Anbu arts and Science College, by giving questionnaire to assess the knowledge on CPR, before implementation of STP.

b) Implementation of STP

Immediately after pretest, STP was given to the same students regarding CPR.

c) Posttest

Evaluation was done by conducting posttest after 7 days of implementation of STP. Post test was conducted by using the questionnaire used for the pretest.

PLAN FOR DATA ANALYSIS:

The collected data was analyzed by using descriptive statistics such as percentage, mean, & Standard Deviation. The collected data was presented in the form of tables and figures.

Fig 3.1 .SCHEMATIC PRESENTATION OF RESEARCH DESIGN

TARGET POPULATION

DEGREE STUDENTS(19-22Yrs)

ACCESSIBLE POPULATION

Students studying in Anbu Arts and Science College

DEMOGRAPHIC VARIABLE	**SAMPLE AND SAMPLE SIZE**	**SAMPLING TECHNIQUE**
Age, sex, Education, , Religion, Duration of stay in old age home, Type of family, Monthly Income, Diet pattern, No of children, Marital status, residence.	**50 degree students**	Purposive Sampling Technique

```
                    ┌─────────────────────────┐
                    │    DATA COLLECTION      │
                    └─────────────────────────┘
              ↙                                    ↘
   ┌───────────────────┐              ┌──────────────────────────┐
   │  Pre-Test without │              │  Post-test Intervention  │
   │   Intervention    │              │   Structured teaching    │
   │                   │              │  programme regarding     │
   │                   │              │          CPR             │
   └───────────────────┘              └──────────────────────────┘
              ↘                                    ↙
                    ┌─────────────────────────┐
                    │       Test score        │
                    └─────────────────────────┘
                               ↓
                   Analysis and Interpretation
                               ↓
                            Findings
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CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER-IV

The term "analyses" refers to the computation of certain measures along with searching for patterns of relationship that exists among data groups. (Kothari .C.R., 2004).

During analyses, the emphasis is on identifying themes and patterns in the data. Interpretation may focus on the usefulness of the findings for the clinical practice or may toward theorizing (Burns Nancy and Grove .S.K., 2007).

This chapter deals with analyses and interpretation of the information collected from 50 degree students who were studied in Anbu Arts and Science College, Komarapalayam.The present study was designed to assess the effectiveness of structured teaching programme on Cardio Pulmonary Resuscitation among degree students. Collected data was tabulated, analyzed and interpreted using descriptive and inferential statistics.

OBJECTIVES OF THE STUDY:

4. To assess the knowledge level regarding cardio pulmonary resuscitation among degree students in a selected college.

5. To evaluate the effectiveness of structured teaching programme on knowledge regarding cardio pulmonary resuscitation among degree students in a selected college.

6.   To find out the association between knowledge regarding cardio pulmonary resuscitation among degree students with their selected socio demographic variables.

ORGANIZATION OF FINDINGS:

Section I: - Descriptive analysis of demographic variables.

Section II: - Assessment of knowledge of degree students regarding CPR prior to implementation of STP.

Section III: - Comparison of pretest and posttest knowledge scores of the degree students regarding CPR.

Area wise comparison of mean, standard deviation and mean percentage of pre and post test knowledge scores of degree students regarding CPR.

Section IV: - Association between the knowledge and their selected demographic variables

HYPOTHESIS:

H1: There will be significant difference between pretest and post test knowledge score regarding cardio pulmonary resuscitation.

H2: There will be significant association between the knowledge with selected demographic variables of the degree students such as age, sex, religion, previous information regarding cardio pulmonary resuscitation

SECTION I: - DESCRIPTIVE ANALYSIS OF DEMOGRAPHIC VARIABLES.

This section deals with the percentage distributions of the selected demographic variables of the degree students.

TABLE NO 4. 1:-FREQUENCY AND PERCENTAGE DISTRIBUTION OF STUDENTS ACCORDING TO THE DEMOGRAPHIC VARIABLES:

Demographic Variables		Frequency	Percentage (%)
Age	18	05	10
	19	27	54
	20	11	22
	21	07	14
Sex	Male	11	22
	Female	39	78
Father's Education	Educated	21	42
	Illiterate	29	58
Mother's Education	Educated	19	38
	Illiterate	31	62
Residential Area	Urban	21	42
	Rural	29	58
Type of Family	Joint	11	22
	Nuclear	39	78
Religion	Hindu	47	94
	Muslim	01	02
	Christian	02	04
Previous Knowledge	Yes	28	56
	No	22	44
Source of information	Media	24	86
	Books	01	3.5
	Relatives	02	07
	Friends	01	3.5
Group studied in XII	Maths with Biology	17	34
	Computer science	17	34
	Pure science	05	10
	Vocational	08	16

	Others	03	06

Regarding age, 10%(05) of respondents are in the age group of 18 years, 54%(27) of respondents are in the age group of 19 years, 22% (11) of respondents are in the age group of 20 years and 14%(07) of respondents are in the age group of 21 years.

According to the sex, 22 %(11) of respondents are male students and 78 %(39) of respondents are female students.

According to the father's educational status of degree students, 42 %(21) are educated and 58 %(29) are Illiterate.

According to the mother's educational status, 38 %(19) are educated and 62 %(31) are Illiterate.

According to the residential area of degree students, 42 %(21) of respondents are from urban area and 58 %(29) of respondents are from rural area.

According to the type of family, 22 %(11) of students belong to joint family, 78 %(39) of students belong to nuclear family.

According to their religion, 94% (47) of students are Hindu, 2 % (1) of student are Muslim, and 4% (2) of students are Christian.

According to their previous knowledge, 56 %(28) of students are having previous knowledge about CPR and 44 %(22) of students are not having knowledge about CPR.

According to the source of information, 86 %(24) of students got through media, 3.5 %(01) of students through books, 7 %(02) of students through relatives, and 3.5 %(01) of students got through friends.

Regarding higher secondary course, 34%(17) of students from Maths with Biology,34% (17)of students from Computer Science,10% (05) of students from Pure Science,16%(08) of students from Vocational and 6%(03) of students from other groups.
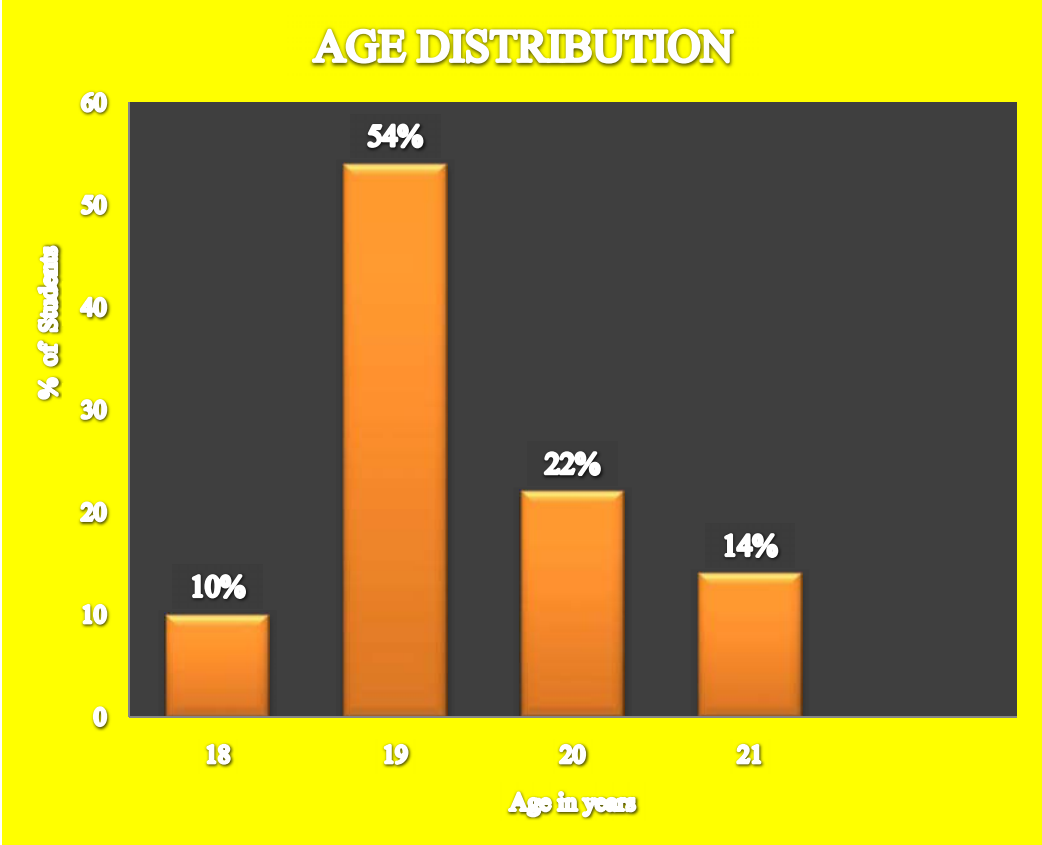
Fig. 4.1: Bar diagram showing age distribution of degree students
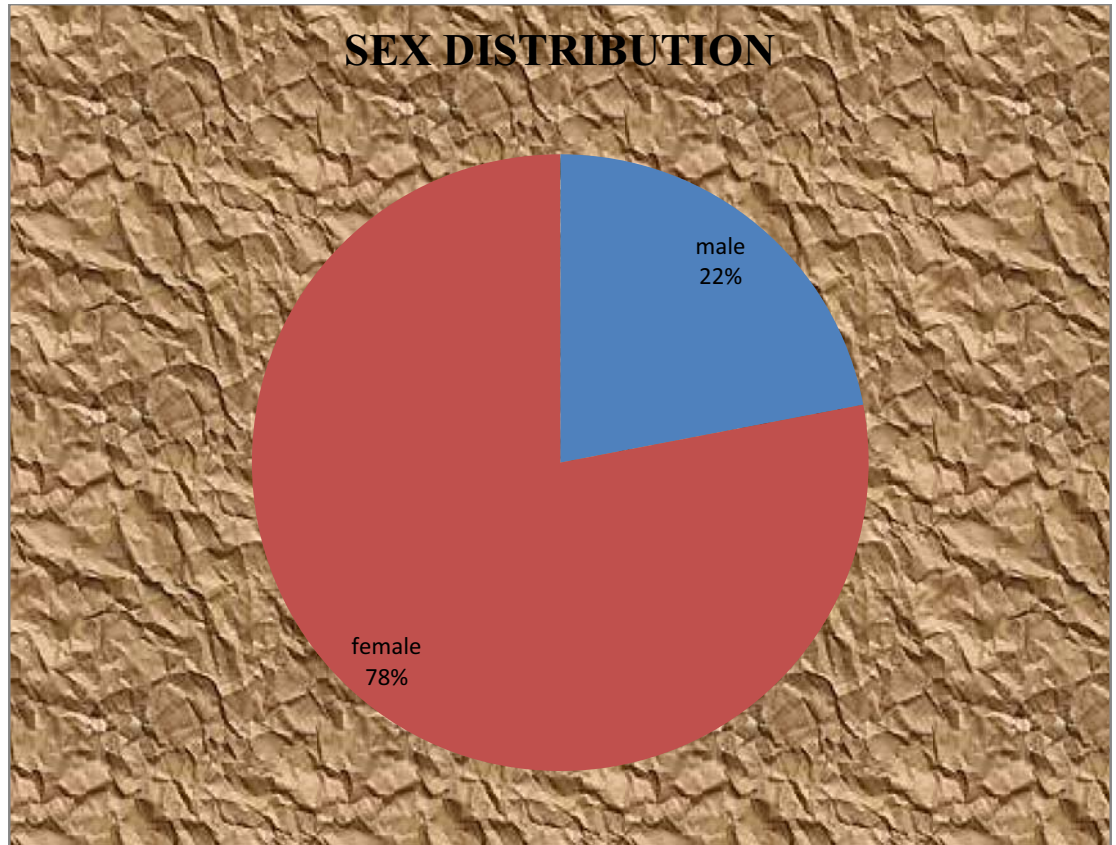
Fig. 4.2: Pie diagram showing sex distribution of degree students

FATHER' S EDUCATION STATUS

42%

58%

- Educated
- Illiterate
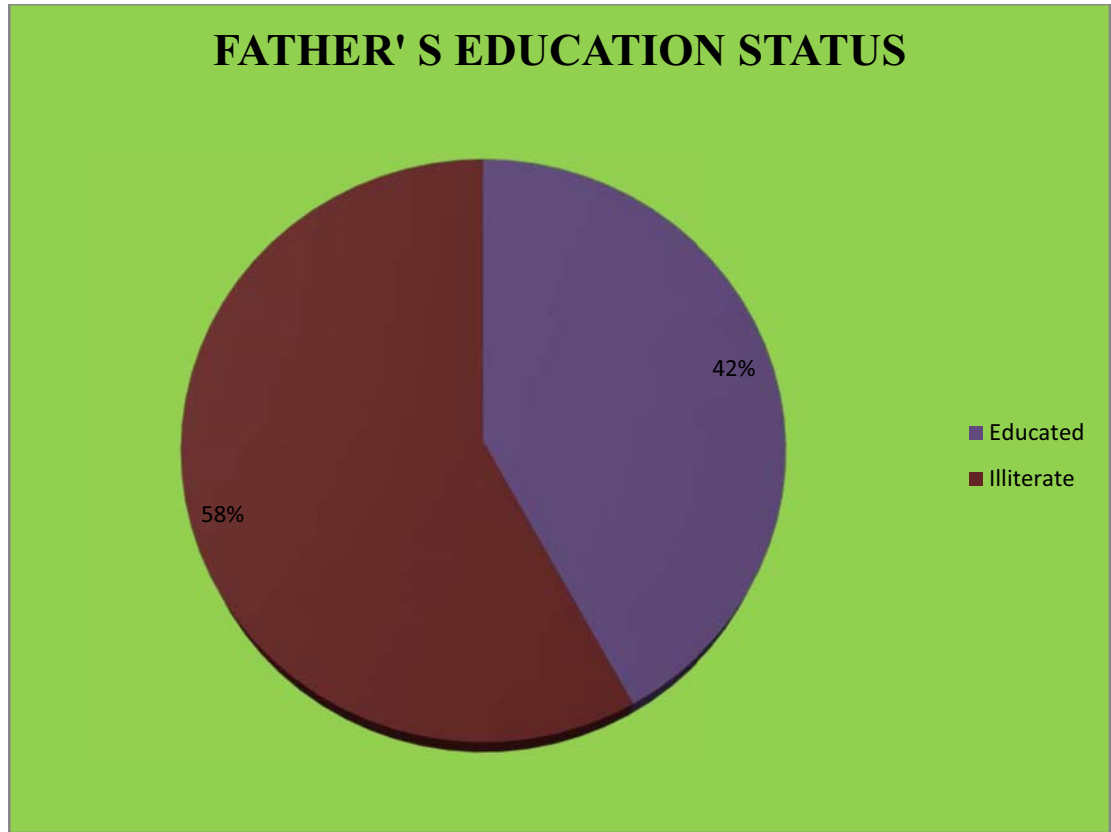
Fig. 4.3: Pie diagram showing father's educational status of degree students

MOTHER'S EDUCATION STATUS

38%

62%

■ Educated
■ Illiterate
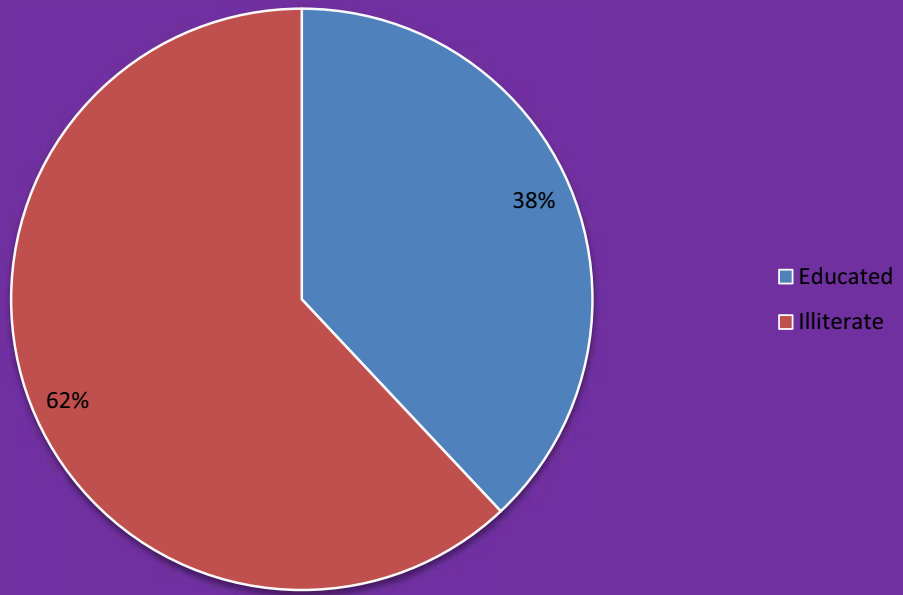
Fig. 4.4: Pie diagram showing mother's educational status of degree students
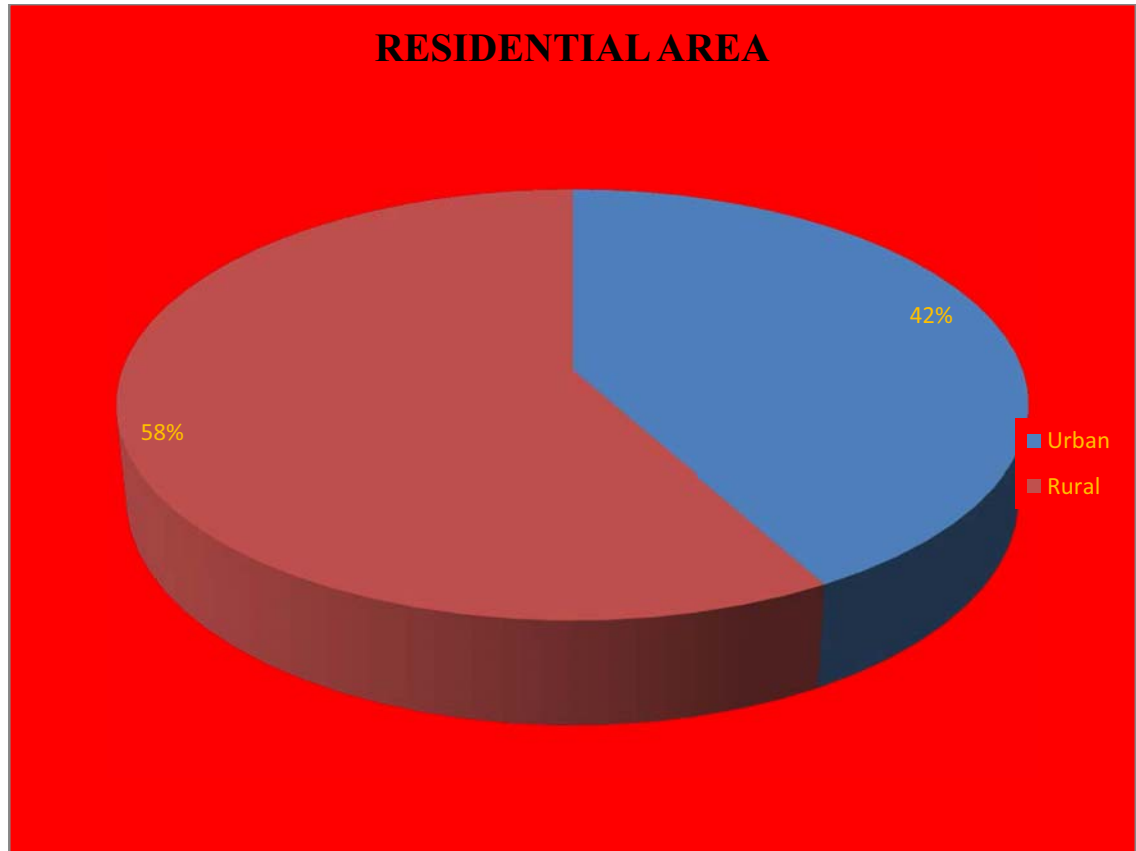
Fig.4.5: Pie diagram showing residential area distribution of degree students
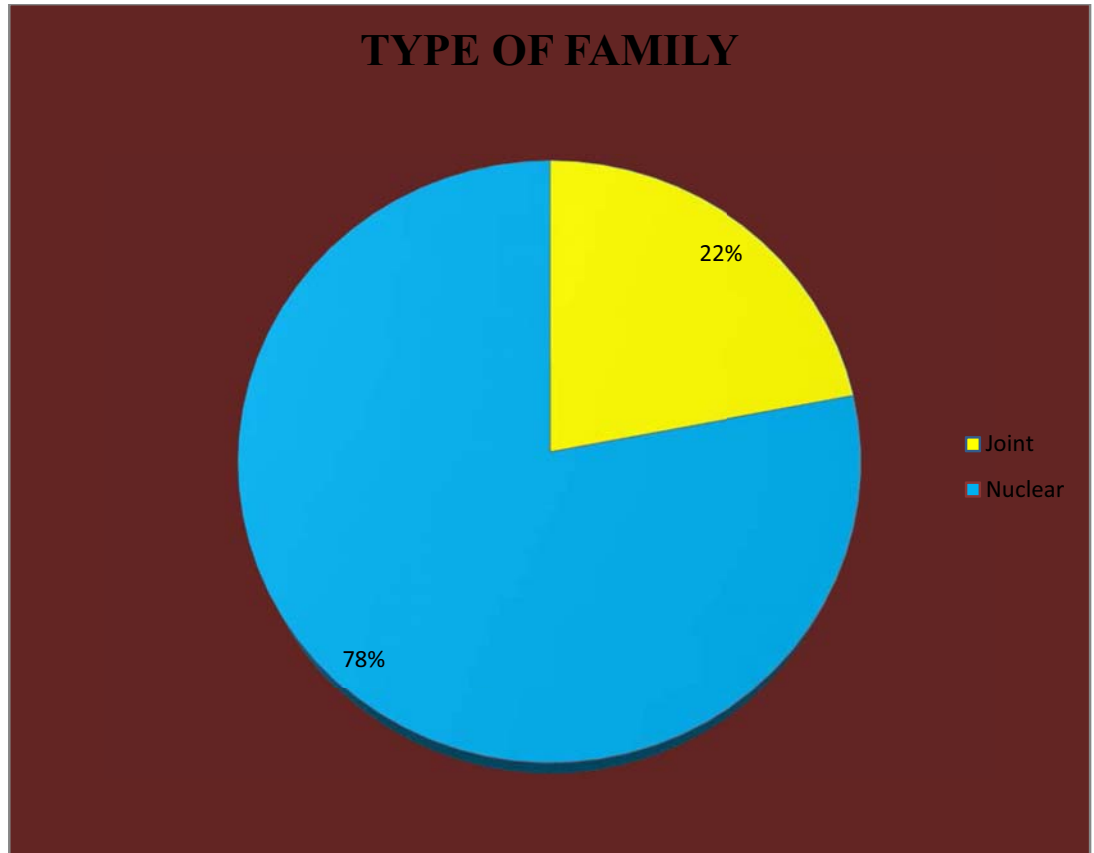
Fig.4.6: Pie diagram showing the distribution of students based on type of family
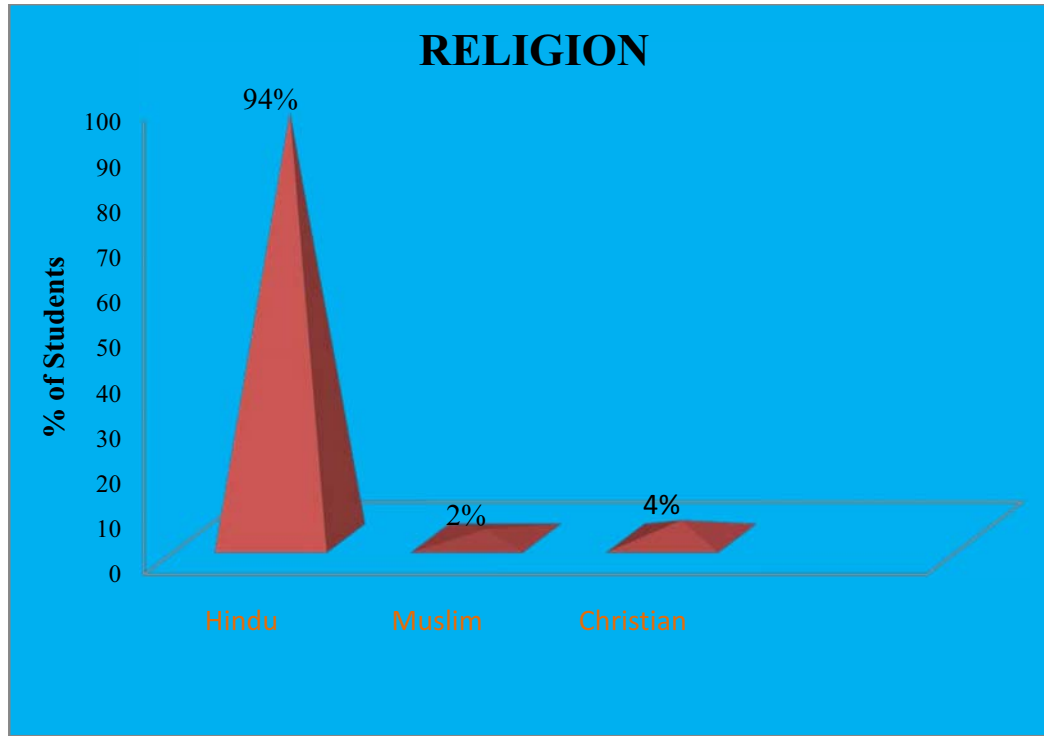
Fig. 4.7: Cone diagram showing distribution of degree students according to their religion

PREVIOUS KNOWLEDGE

44%

56%

Yes

No
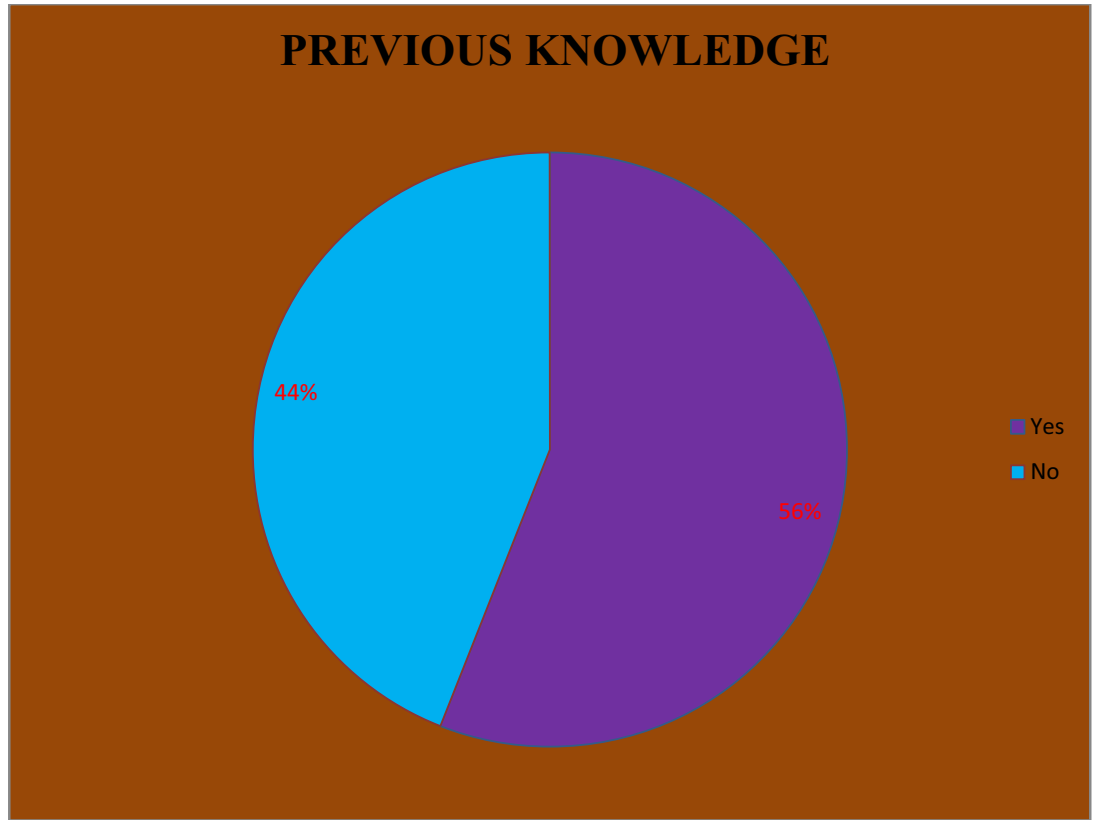
Fig.4.8: Pie diagram showing distribution of degree students based on their previous knowledge

SOURCE OF INFORMATION

86%

3.5%

7%

3.5%

% of Students

90
80
70
60
50
40
30
20
10
0

Media

Books

Relatives

Friends
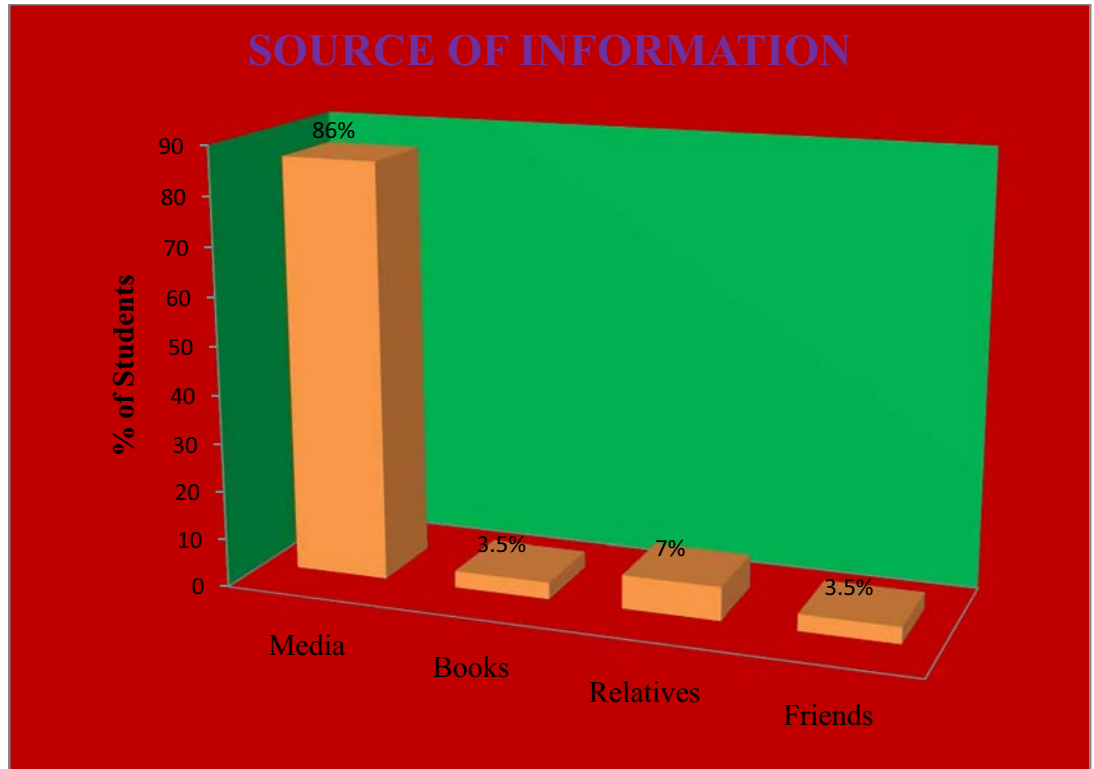
Fig.4.9: Bar diagram showing distribution of students based on their knowledge source of information

GROUP STUDIED IN XII

34% 34% 10% 16% 6%

Maths with Biology   Computer Science   Pure Science   Vocational   Others

% Of Students

Group studied in XII
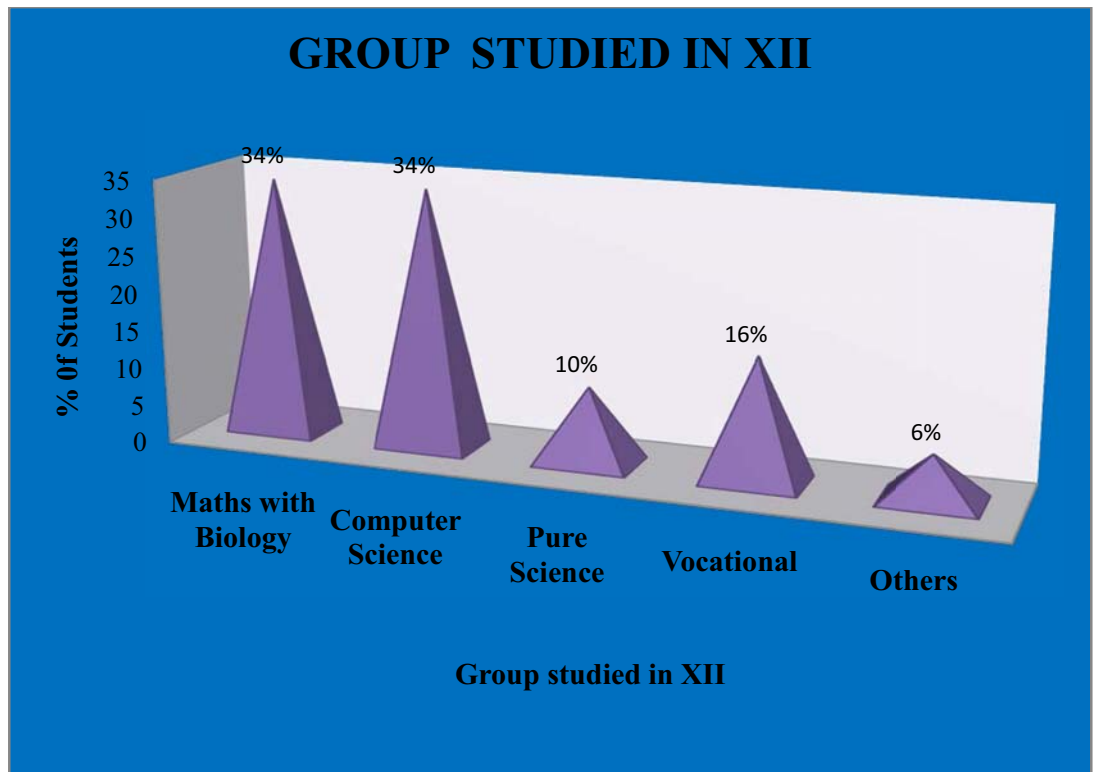
Fig. 4.10: Pyramid diagram showing distribution of students based on their group studied in XII

SECTION II:-

KNOWLEDGE OF DEGREE STUDENTS REGARDING CPR PRIOR TO IMPLEMENTATION OF STP.

TABLE NO 4.2: Area wise Distribution of mean, Standard deviation and mean percentage of pretest knowledge scores of the CPR among degree students.

Areas	Max Obtainable Scores	Scores		
		Mean	SD	Mean percentage
Anatomy and physiology of heart	11	6.4	1.35	58.18
Cardiac Arrest	05	2.6	1.35	52
Cardiopulmonary Resuscitation	29	9.6	1.2	33.1
Overall	**45**	**18.6**	**4.14**	**41.33**

Area wise distribution of mean , SD, and mean percentage of pretest knowledge scores of the degree students regarding CPR shows that among three areas, the highest mean score (6.4+ 1.35) which is 58.18% was obtained for the area " Anatomy and Physiology of heart" ,more or less similar mean score (2.6+1.35) which is 52% was obtained for the area " Cardiac arrest" .The lowest mean score (9.6+ 1.2) which is 33.1% was obtained for the area " Cardiopulmonary Resuscitation" revealing poor knowledge. However, for all the other areas the mean percentage was 41.33.

TABLE NO 4.3: LEVEL OF KNOWLEDGE OF STUDENTS ON CPR

LEVEL OF KNOWLEDGE	MIN-MAX OBTAINABLE SCORE	FREQUENCY		PERCENTAGE %	
		PRETEST	POSTTEST	PRETEST	POSTTEST
Very Poor	0-9	01	--	O2	--

Poor	10-18	26	--	52	--
Average	19-27	22	--	44	--
Good	28-36	01	29	02	58
Very Good	37-45	--	21	--	42

Table 3 shows pretest overall level of knowledge for degree students.52% of students had poor knowledge and 44% of degree students had average knowledge. Posttest overall knowledge level for degree students.58% of students had good knowledge and 42% of degree students had very good knowledge.

LEVEL OF KNOWLEDGE

Marks	Pretest	Posttest
0-9	2%	0%
10-18	52%	0%
19-27	44%	0%
27-35	2%	58%
36-45	0%	42%
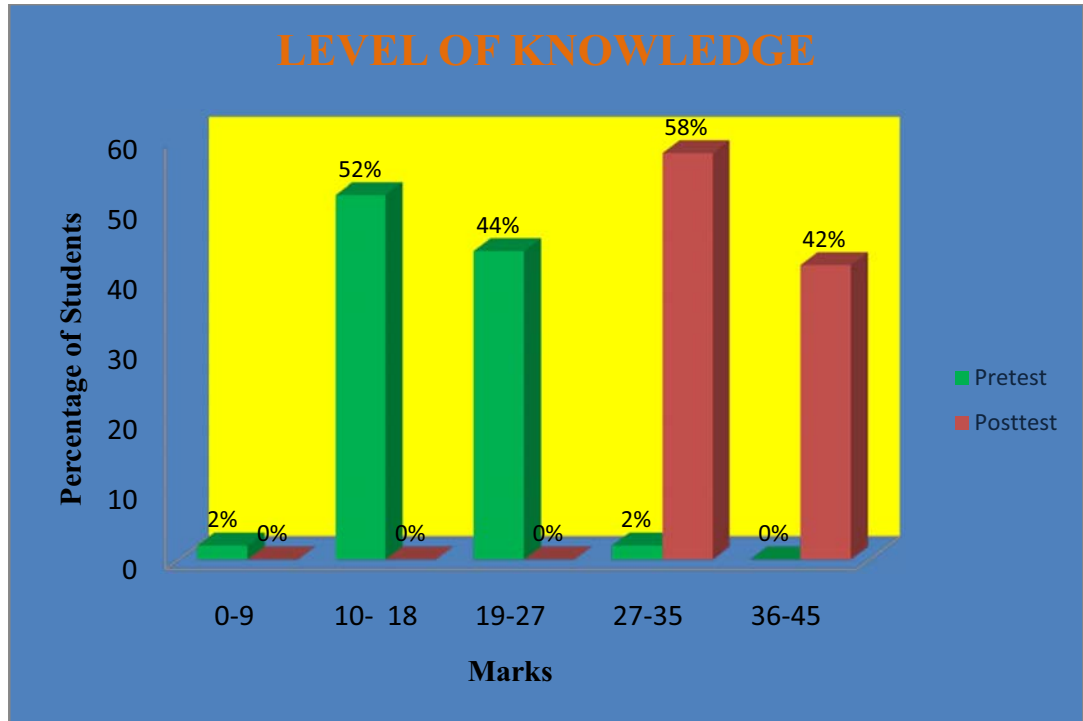
Fig.4.11:Bar diagram showing distribution of marks among degree students in pre and post test

SECTION III: - COMPARISON OF PRETEST AND POSTTEST

KNOWLEDGE

SCORES OF THE DEGREE STUDENTS REGARDING CPR

TABLE NO: 4. 4 Area wise comparison of mean, standard deviation and mean percentage of pre and post test knowledge scores of degree students regarding CPR.

Area	Maximum Scores	Pretest Scores			Posttest Scores			Difference in Mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
Anatomy and Physiology of heart	11	6.4	1.35	58.18	9.84	1.0 36	89.45	31.27
Cardiac Arrest	05	2.6	1.2	52	4.08	1.0 27	81.6	29.6
Cardio pulmonary Resuscitation	29	9.6	3.13	33.10	21.88	3.3 35	75.4	42.3
Overall	**45**	**18.6**	**4.14**	**41.33**	**35.8**	**3.9**	**79.5**	**38.17**

Comparison of overall mean, SD and mean percentage of pre and post test knowledge scores shows that over all pre test mean score was 18.6+_4.14 which is 41.33%whereas in post test the mean score was 35.8+- 3.5 which is 79.5% revealing the difference of 38.17% shows the effectiveness of STP.

TABLE NO 4. 5:- Comparison between difference of pre and posttest knowledge of degree students regarding Cardiopulmonary Resuscitation

Sl.No.	Area	't' value	Level of significance

1	Anatomy and Physiology of heart	14.95	Highly Significant
2	Cardiac Arrest	6.6	Highly Significant
3	Cardiopulmonary Resuscitation	20.66	Highly Significant

P=1.982, P<0.05=Significant, P>0.05=not significant

Paired 't'test was calculated to assess the pre and post-test knowledge scores of degree stu

dents regarding Cardiopulmonary Resuscitation. The finding shows highly significant difference for all the areas. Thus, it can be interpreted that the difference in mean score values related to the above mentioned areas were true difference and not by chance. Hence, the null hypothesis is rejected and research hypothesis accepted (P>0.05).It shows that the STP was effective for all the areas.

SECTION IV: TABLE NO 4.6: ASSOCIATION BETWEEN THE SELECTED DEMOGRAPHIC VARIABLES WITH THE LEVELS OF KNOWLEDGE AMONG DEGREE STUDENTS.

DEMOGRAPHIC VARIABLES		LEVEL OF KNOWLEDGE				CHI SQUARE VALUE
		Very poor	Poor	Average	Good	
Age	18	0	1	4	0	χ^2=7.25
	19	1	15	10	1	Df=9(11.07)
	20	0	6	5	0	**p>0.05(NS)**
	21	0	4	3	0	

Sex	Male	0	7	4	0	χ^2=1.1788 Df=3(7.815) **p>0.05(NS)**
	Female	1	19	18	1	
Father's Education	Educated	0	11	9	1	χ^2=0.091 Df=3(7.815) **p>0.05(NS)**
	Illiterate	1	15	13	0	
Mother's Education	Educated	0	13	5	1	χ^2=2.82 Df=3(7.815) **p>0.05(NS)**
	Illiterate	1	13	17	0	
Type of Residential area	Urban	0	11	9	1	χ^2=0.09 Df=3(7.815) **p>0.05(NS)**
	Rural	1	15	13	0	
Type of Family	Joint	0	5	6	0	χ^2=1.039 Df=3(7.815) **p>0.05(NS)**
	Nuclear	1	21	16	1	
Religion	Hindu	1	23	22	1	χ^2=34.47 Df=6(12.592) **p>0.05(NS)**
	Muslim	0	1	0	0	
	Christian	0	2	0	0	
Previous Knowledge	Yes	1	15	12	0	χ^2=0.035 Df=3(7.815) **p>0.05(NS)**
	No	0	11	10	1	
Source of Information	Media	0	12	12	0	χ^2=15.56 Df=6(12.592) **P<0.05S**
	Books	0	1	0	0	
	Relatives	1	1	0	0	
	Friends	0	1	0	0	
Group studied in XII	Maths with Biology	0	6	11	0	χ^2=13.809 Df=9(16.919) **p>0.05(NS)**
	Computer science	0	10	6	1	
	Pure Science	0	3	2	0	
	Vocational	1	5	2	0	
	Others	0	2	1	0	

Chi square was calculated to find out the association between the knowledge scores and demographic variables of the degree students. Significant association was found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their demographic variables such as Source of information (P<0.05). No significant association was found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their demographic variables such as age,sex,father's education, mother's education, residential area, type of family, previous knowledge, group studied in XII(P>0.05).

CHAPTER-V

DISCUSSION AND SUMMARY

CHAPTER-V

DISCUSSION AND SUMMARY

The aim of the present study was to assess the effectiveness of structured teaching programme on Cardiopulmonary Resuscitation among degree students in a selected college at Komarapalayam. The study was conducted by using quasi experimental design. Sample size was 50 degree students selected by purposive sampling technique.

The effectiveness of structured teaching programme was evaluated by questionnaire.

The responses were analyzed through descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistics (paired 't' test.)

DISCUSSION ON THE FINDINGS BASED ON THE OBJECTIVES OF THE STUDY:

Objective-1

To assess the knowledge level regarding cardio pulmonary resuscitation among degree students in a selected college.

Finding-1

The study findings revealed that (01)02% of students had Very poor knowledge, (26)52% of students had poor knowledge, (22)44% of students had average knowledge and the remaining (01)02% had good knowledge.

Discussion-1

The above findings were supported by the study conducted by **Hassan Zaheer** studied the knowledge of CPR in 60 Students. They demonstrated about the CPR using Manikins. After 7 days the knowledge level of the student was assessed and it was improved.

Objective-2

To evaluate the effectiveness of structured teaching programme on knowledge regarding cardio pulmonary resuscitation among degree students in a selected college.

Finding-2

The study findings revealed that comparison of overall mean, SD and mean percentage of pre and post test knowledge scores shows that over all pre test mean score was 18.6+_4.14 which is 41.33%whereas in post test the mean score was 35.8+-3.5 which is 79.5% revealing the difference of 38.17% shows the effectiveness of STP.

Discussion-2

The above findings were supported by the study conducted by Larsen P, Pearson J, studied about the Cardiopulmonary Resuscitation. Here the sample received the knowledge about CPR.So the researcher concluded that the STP gives better result.

Objective-3

To find out the association between knowledge regarding cardio pulmonary resuscitation among degree students with selected socio demographic variables.

Finding-3

The study findings revealed that association between the level of hemoglobin and their selected demographic variables. It was interpreted that there was significant association found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their demographic variables such as Source of information (P<0.05). No significant association was found between knowledge scores of degree students regarding Cardiopulmonary Resuscitation with their other demographic variables such as age,sex,father's education, mother's education, residential area, type of family, previous knowledge, group studied in XII(P>0.05). The stated hypothesis was accepted.

Discussion-3

Sanders AB reported that Cardiopulmonary Resuscitation knowledge among degree students was important. There was no significant association between the level of knowledge and their selected demographic variables like age, sex, residential area, type of family and education of parents.

SUMMARY

The present study was to **"Assess the effectiveness of structured teaching programme on knowledge regarding Cardio Pulmonary Resuscitation among degree students in a selected college, Komarapalayam."**

IMPLICATION OF THE STUDY:

According to Tolsma (1995) the section of the research report that focuses on nursing implication usually includes specific suggestions for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice:

Nurses have the responsibility to improve the knowledge level of degree students.

The present study will help the nurse to know the effectiveness of structured teaching programme on knowledge regarding Cardiopulmonary Resuscitation. It will help in creating the awareness among students about the Cardiopulmonary Resuscitation.

Cardiopulmonary Resuscitation is one of the emergency management.

Nursing education:

Student has to update their knowledge regarding Cardiopulmonary Resuscitation in emergency management.

The faculty member has to motivate the student to learn about the Cardiac arrest and its immediate care.

Nursing administration:

The present study proposed to help the health administrator to create awareness about the effectiveness of structured teaching programme on knowledge regarding Cardiopulmonary Resuscitation among degree students to give a valuable life.

Administrators have to educate the students through media regarding the practice of CPR.

Nursing research:

The study will be valuable reference for further research.

The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted.

LIMITATION:

• The study was limited to degree students between the age group of (19-22 yrs)

• The study had only one group to prove the effectiveness of Structured teaching programme

• The samples were selected by purposive sampling technique. .

RECOMMENDATIONS:

The study can be replicated in large sample size.

A similar study can be done in different settings and in different population.

A comparative study can be done to having two groups.

CONCLUSION:

The degree students had a good knowledge after structured teaching programme about CPR. The structured teaching programme was effective to improve the level of knowledge.

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ANNEXURE

ANBU COLLEGE OF NURSING

(G.O. Ms.No.220, Health & Family Welfare (PME) Dept. / 13.06.2007)

MGR Nagar, Pallipalayam Road,
KOMARAPALAYAM - 638 183.
Namakkal Dt., Tamilnadu, India.

✆ : 98427 17575, 04288 - 263181
Fax : 04288 - 263183
Website : www.anbu.ac.in ; E-mail : info@anbu.ac.in

Prof. M. Latha, M.Sc.(N), MBA.,
Principal.

To
The Principal,
Anbu Arts & Science College,
Komarapalayam 638 183.

Respected Sir,

Sub: Letter seeking permission for conducting the study – Regarding.

***

Ms. Anbu Epsi. J., is a **II Year M.Sc. (Nursing)** student of our college is planning to conduct a study to **"Assess the effectiveness of Structured Teaching Programme on Knowledge regarding Cardiopulmonary Resuscitation among Degree Students in selected College in Komarapalayam "**.

This study is undertaken as part of her research project to be submitted to The Tamil Nadu Dr. M G R Medical University at Chennai, in partial fulfillment of university requirement for the award of M.Sc.(Nursing) Degree. I request you to kindly grant permission to conduct the study at your Institution. I humbly request you to do the needful towards the same.

Thanking you,

Yours sincerely,

Letter seeking expert's opinion and suggestion for the content

Validity of the tool used for the study.

From,

Reg No: 301312902,

II nd Year M.Sc Nursing, Anbu College of nursing,

M G R Nagar, Komarapalayam.

To

    _____

    _____

Forwarded through

  Mrs.Latha,

  Principal,Anbu College of nursing,

  M G R Nagar, Komarapalayam.

  Sub: Expert opinion for content validation of research tool.

  Respected Sir/Madam,

     I **Reg No: 301312902** a post graduate student of Anbu College of nursing, anticipate Your valuable self; if you would accept to validate my research tool on the topic "**A study to Assess the effectiveness of structured teaching programme on knowledge regarding Cardio Pulmonary Resuscitation among degree students in a selected college, Komarapalayam.**"

     It would be highly appreciable if you would kindly affirm your acceptance to endorse your Valuable suggestions on this topic. I had attached the details of the study along with the research tool.

<div align="center">

Thanking you

</div>

Date: **Yours faithfully,**

Place: Komarapalayam   **Reg No: 301312902**

ANNEXURE - III

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool **of Reg No: 301312902** II nd Year M.Sc Nursing student who is undertaking, **"Assess the effectiveness of structured teaching programme on knowledge regarding Cardio Pulmonary Resuscitation among degree students in a selected college, Komarapalayam."**

Place: Signature and seal of the
                                                                                              Expert.

Date: Name and Designation.

ANNEXURE - IV

LIST OF EXPERTS WHO VALIDATED THE TOOL

- **Dr.J.Priya ,M.D.,**

Physician

Senior Asst.Surgeon

Govt Head Quarters Hospital

Erode.

- **Mrs.S.Lakshmi Prabha M.Sc (N),**

Professor & HOD

Dept. of Medical Surgical Nursing

VMACON

Salem.

- **Mrs.P.Shanmugavadivu M.Sc (N),**

Asst. Professor

Vellalar college of Nursing

Erode.

- **Mrs.G.Juliet Nirmala Mary M.Sc (N).,**

Asst. Professor

Anbu College of Nursing.

- **Mrs .R.Gowri M.Sc (N).,**

Asst. Professor

Anbu College of Nursing.

QUESTIONNAIRE

Instructions to the participants

This questionnaire is to assess the knowledge regarding CPR. It has 2 sections. Section-A and Section-B. Select the answer which is appropriate and place a tick mark (✔) on the answer. All the information provided will be kept confidential.

SECTION-A

Demographic data:

This section requires some personal data of the participants. Each item has few options. Select the correct answer from the options.

1. Age (in years)
   a) 18   (   )
   b) 19   (   )
   c) 20   (   )
   d)21   (   )

2. Sex
   a) Male   (   )
   b) Female   (   )

3. Father's education
   a) Educated   (   )
   b) Illiterate   (   )

4. Mother's education
   a) Educated   (   )
   b) Illiterate   (   )

5. Type of residential area
   a)Urban   (   )
   b) Rural   (   )

6. Type of family
    a) Joint family   (   )
    b) Nuclear family   (   )

7. Religion
    a) Hindu   (   )
    b) Muslim   (   )
    c) Christian   (   )

8. Previous knowledge about CPR
    a) Yes   (   )
    b) No   (   )

9. If yes, source of information through
    a) Media   (   )
    b) Books   (   )
    c) Relatives   (   )
    d) Friends   (   )

10. Studied which group in XII
    a) Maths with Biology   (   )
    b) Computer science   (   )
    c) Pure science   (   )
    d) Vocational   (   )
    e) Others specify   (   )

SECTION - B

This part includes related to knowledge on CPR. Each question has four options. Select the most suitable answer from these options for the respective questions. All the information provided will be kept confidential.

ANATOMY AND PHYSIOLOGY OF HEART:

1. The heart consists of
   - a) 2 chambers   (   )
   - b) 3 chambers   (   )
   - **c) 4 chambers**   (   )
   - d) 5 chambers   (   )

2. Shape of the heart is
   - a) Oval   (   )
   - b) Round   (   )
   - **c) Closed Fist**   (   )
   - d) Diamond   (   )

3. The heart sits within a fluid-filled cavity called
   - **a) The pericardial cavity**   (   )
   - b) The peritoneal cavity   (   )
   - c) The pleural cavity   (   )
   - d) The Synovial cavity   (   )

4. The heart is located in
   - a) The right side   (   )
   - b) The left side   (   )
   - c) 2/3 right side, 1/3 left side   (   )
   - **d) Centre of thorax**   (   )

5. The arteries carry

     a) Oxygenated blood   (   )

     b) Deoxygenated blood   (   )

     c) Nutrients   (   )

     d) Oxygen   (   )

6. The heart is covered by

     a) 2 layers   (   )

     b) 3 layers   (   )

     c) 4 layers   (   )

     d) 5 layers   (   )

7. The Normal Blood pressure is

     a) 120/80mmHg   (   )

     b) 90/60mmHg c)   (   )

     150/90mmHg d)   (   )

     180/100mmHg   (   )

8. The sounds of a normal heartbeat are known as

     a) "lubb" and "dupp"   (   )

     b) "lupp" and "lupp"   (   )

     c) "dupp" and "lupp"   (   )

     d) "dupp" and"dupp"   (   )

9. The pacemaker of the heart is

     a) SA Node   (   )

     b) AV Node   (   )

     c) Ventricles   (   )

     d) Arteries   (   )

10. The electrical activity of the heart was monitored by

      a) EEG   (   )

      b) EMG   (   )

      c) ECG   **(   )**

      d) USG   (   )

11. The normal heart rate is (beats/mt)

      a) 40-60   (   )

      b) 100-120   (   )

      c) 60-100   **(   )**

      d) 150   (   )

QUESTIONS ABOUT CARDIAC ARREST:

12. Cardiac arrest means

      a) Abrupt loss of heart function   **(   )**

      b) Loss of kidney function   (   )

      c) Loss of brain function   (   )

      d) Loss of energy   (   )

13. Cardiac arrest is mainly caused by

      a) Fever & Vomiting   (   )

      b) Coronary artery disease   **(   )**

      c) Diarhoea   (   )

      d) Tuberculosis   (   )

14. Cardiac arrest is diagnosed by

      a) Absence of breathing, no pulse   **(   )**

      b) Absence of breathing   (   )

      c) Decreased blood pressure   (   )

      d) Presence of pulse   (   )

15. Where will you check for pulse while Cardiac arrest

      a) Radial pulse   (   )

      b) Ulnar pulse   (   )

      c) Carotid pulse   **(   )**

      d) Femoral pulse   (   )

16. The immediate management of Cardiac arrest is

      a) Maintaining Fluid Level   (   )

      b) CPR   **(   )**

      c) Checking temperature   (   )

      d) Medication administration   (   )

QUESTIONS REGARDING CPR:

17. CPR means

      a) Cardio pulmonary Resuscitation   **(   )**

      b) Cerebral pulmonary Resuscitation   (   )

      c) Cardiac Pump Ratio   (   )

      d) Cardio Pulse Resuscitation   (   )

18. BLS means

      a) Basic Live Support   (   )

      b) Body Life support   (   )

      c) Basic Life Support   **(   )**

      d) Basic Long Support   (   )

19. ACLS means

      a) Advanced Cardiac Life Support   **(   )**

      b) Active Cardiac Life Support   (   )

      c) Advanced Cardiac Long Support   (   )

      d) Activity Cardiac Life Support   (   )

20. The Abbreviation of ABC

      a) Airway Breathing Circulation   (   )

      b) Airway Breathing Compressions   (   )

      c) Analysis Blood count   (   )

      d) None Of the above   (   )

21. CPR is a technique that involves

      a) Cardiac compressions   (   )

      b) Chest compressions without artificial respiration   (   )

      c) Fluid administration   (   )

      d) Pulmonary compressions   (   )

22. The main indication of CPR

      a) Cardiac arrest &Respiratory arrest   (   )

      b) Leg Fractures   (   )

      c) Sinusitis   (   )

      d) Rib fractures   (   )

23. The components of CPR are

      a) Airway and Breathing   (   )

      b) Circulation   (   )

      c) Chest compressions and Defibrillation   (   )

      d) All the above   (   )

24. While performing CPR, the place should be

      a) Hard surface   (   )

      b) Soft surface   (   )

      c) Any place   (   )

      d) Others   (   )

25. Position of CPR

     a) Prone   (   )

     b) Sitting   (   )

     c) Supine   (   )

     d) standing   (   )

26. While performing CPR your chest compressions should be

     a) Hard and fast, with as few interruptions as possible   (   )

     b) Gentle and slow   (   )

     c) Hard but slow with frequent interruptions to check for a pulse   (   )

     d) Gentle but fast   (   )

27. How many compressions must be delivered within 1 minute when giving adult CPR?

     a)100   (   )

     b) 120   (   )

     c) 50   (   )

     d) 80   (   )

28. Duration needed for delivering a regular breath

     a) two seconds   (   )

     b) one second   (   )

     c) 15 seconds   (   )

     d) 20 seconds   (   )

29. When one man adult CPR is being performed, what should be the duration for checking the breathing of the victim?

     a) Maximum 10 seconds   (   )

     b) Maximum 20 seconds   (   )

     c) Maximum 30 seconds   (   )

     d) Maximum 40 seconds   (   )

30. Depth of compression in adults

    a) 2 cm   (   )

    b) 5 cm   (   )

    c) 1.5 cm   (   )

    d) 2.5 cm   (   )

31. What is the ratio of compression – ventilation for an infant or child CPR?

    a) 30:1   (   )

    b) 15:1   (   )

    c) 30:2   (   )

    d) 15:2   (   )

32. What is the ratio of compression – ventilation for adult CPR?

    a) 30:1   (   )

    b) 15:1   (   )

    c) 30:2   (   )

    d) 15:2   (   )

33. If two rescuers, the ratio of compression is

    a) 30:1   (   )

    b) 15:1   (   )

    c) 30:2   (   )

    d) 15:2   (   )

34. What compression method should be used for an adult?

    a) Heel of one hand, other hand on top   (   )

    b) Both hands put together   (   )

    c) One hand only   (   )

    d) Use of fingers pad   (   )

35. What compression method should you use for a child?

a) 2 fingers or 2 thumbs encircling   (   )

b) Use of one finger   (   )

c) Use of middle finger   (   )

d) Use of index finger   (   )

36. If you are performing CPR on a child and their chest does not rise with the first breath, what should you do?

a) Adjust the airway and give your second breath   (   )

b) Perform abdominal thrusts and look in the airway   (   )

c) Stop efforts to resuscitate the child   (   )

d) Attempt a second breath without changes   (   )

37. What is the proper hand position when performing chest compressions on a 6 year old?

a) With one or two hands, lower half of breast bone   (   )

b) With two hands encircling the chest, thumbs on the beast bone   (   )

c) Two hands, upper third of the breast bone   (   )

d) Two hands, center of breast bone   (   )

38. What is the first link in the adult "chain of survival"?

a) Early recognition   (   )

b) Preventing heart disease   (   )

c) Avoiding tobacco use   (   )

d) Early CPR   (   )

39. CPR is highly effective, when it is performed

a) Start immediately after collapses   (   )

b) Start within 15 minutes   (   )

c) Start within 30 minutes   (   )

d) Start within 1 hour   (   )

40. After compression, open the airway by

    a) Head tilt chin maneuver   (   )

    b) Head maneuver   (   )

    c) Abdominal thrust   (   )

    d) Chin lifting maneuver   (   )

41. How many seconds are required for the completion of one CPR cycle?

    a) 20 seconds   (   )

    b) 21 seconds   (   )

    c) 22 seconds   (   )

    d) 23 seconds   (   )

42. To prevent brain death,CPR should be started within

    a) 6 minutes   (   )

    b) 10 minutes   (   )

    c) 15 minutes   (   )

    d) 20 minutes   (   )

43. CPR is used for

    a) Oxygenate the blood   (   )

    b) Maintain the cardiac output   (   )

    c) Both a and b   (   )

    d) None of the above   (   )

44. Complications of CPR

    a) Rib Fractures   (   )

    b) Sternal fractures   (   )

    c) Pulmonary complications   (   )

    d) All the above   (   )

45. The device used in CPR is

    a) Cardiac monitoring   (   )

    b) Ventilator   (   )

    c) Defibrillator   (   )

    d) Pacemaker   (   )

STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARDIOPULMONARY RESUSCITATION

Name of presenter	:	Ms.Anbu Epsi.J (301312902)
Topic	:	Cardiopulmonary Resuscitation
Group	:	Students studying Anbu Arts and Science College, Komarapalayam.
Duration	:	45 Minutes
Medium of Instruction	:	English
Method of teaching	:	Power point presentation
General Objective	:	The students will gain knowledge, attitude and skill regarding CPR.

OBJECTIVES	CONTENTS	TEACHING LEARNING ACTIVITY WITH AV AIDS
Introduce the topic	**HEART** **INTRODUCTION:** The heart is a muscular organ about the size of a closed fist that functions as the body's circulatory pump. It takes in deoxygenated blood through the veins and delivers it to the lungs for oxygenation before pumping it into the various arteries (which provide oxygen and nutrients to body tissues by transporting the blood throughout the body). The heart is located in the thoracic cavity medial to the lungs and posterior to the sternum. On its superior end, the base of the heart is attached to the aorta, pulmonary arteries and veins, and the vena cava. The inferior tip of the heart, known as the apex, rests just superior to the diaphragm. The base of the heart is located along the body's midline with the apex pointing toward the left side. Because the heart points to the left, about 2/3 of the heart's mass is found on the left side of the body and the other 1/3 is on the right. **ANATOMY OF HEART:** **Pericardium** The heart sits within a fluid-filled cavity called the pericardial cavity. Pericardium is a type of serous membrane that produces serous fluid to lubricate the heart and prevent friction between the ever beating heart and its surrounding organs.	Introducing the topic with help of Power point presentation

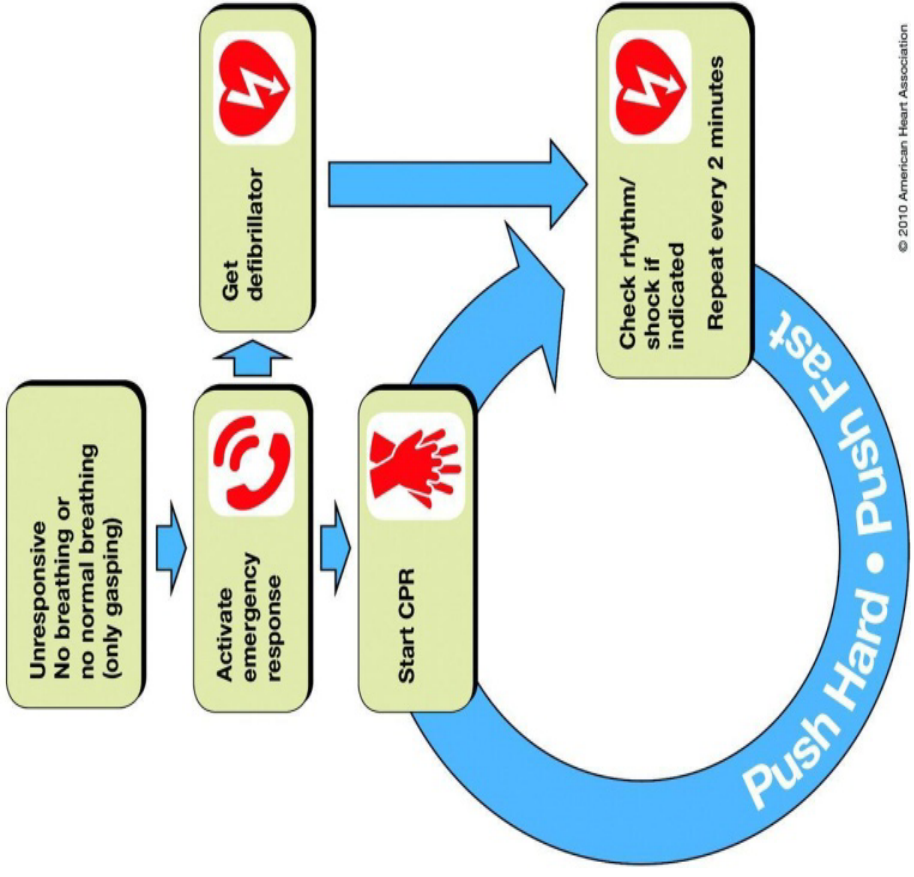| Describe the anatomy and physiology. | **Structure of the Heart Wall**
The heart wall is made of 3 layers: pericardium, myocardium and endocardium.

• Epicardium. The epicardium is the outermost layer of the heart wall .

• Myocardium. The myocardium is the muscular middle layer of the heart wall that contains the cardiac muscle tissue.

• Endocardium. Endocardium is the simple squamous endothelium layer that lines the inside of the heart. lungs.

Chambers of the Heart
The heart contains 4 chambers: the right atrium, left atrium, right ventricle, and left ventricle

Valves of the Heart
The heart functions by pumping blood both to the lungs and to the systems of the body. The heart valves can be broken down into two types:

• atrioventricular and

• semilunar valves.

Conduction System of the Heart
The conduction system starts with the pacemaker of the heart—a small bundle of cells known as the sinoatrial (SA) node. The SA node is located in the wall of the right atrium inferior to the superior vena cava. The SA node is responsible for setting the pace of the heart as a whole and directly signals the atria to contract. The signal from the SA node is picked up by another mass of conductive tissue known as the atrioventricular (AV) node.

The AV node is located in the right atrium in the inferior portion of the interatrial septum. The AV node picks up the signal sent by the SA node and transmits it through the atrioventricular (AV) bundle. The AV bundle is a strand of | Lecturing about the topic with the help of Power point presentation. |

conductive tissue that runs through the interatrial septum and into the interventricular septum. The AV bundle splits into left and right branches in the interventricular septum and continues running through the septum until they reach the apex of the heart. Branching off from the left and right bundle branches are many Purkinje fibers that carry the signal to the walls of the ventricles, stimulating the cardiac muscle cells to contract in a coordinated manner to efficiently pump blood out of the heart.

Physiology of the Heart

Coronary Systole and Diastole
At any given time the chambers of the heart may found in one of two states:

- Systole. During systole, cardiac muscle tissue is contracting to push blood out of the chamber.

- Diastole. During diastole, the cardiac muscle cells relax to allow the chamber to fill with blood. Blood pressure increases in the major arteries during ventricular systole and decreases during ventricular diastole. This leads to the 2 numbers associated with blood pressure—systolic blood pressure is the higher number and diastolic blood pressure is the lower number. For example, a blood pressure of 120/80 describes the systolic pressure (120) and the diastolic pressure (80).

The Cardiac Cycle
The cardiac cycle includes all of the events that take place during one heartbeat.

Blood Flow through the Heart
Deoxygenated blood returning from the body first enters the heart from the superior and inferior vena cava. The blood enters the right atrium and is pumped through the tricuspid valve into the right ventricle. From the right ventricle, the

	blood is pumped through the pulmonary semilunar valve into the pulmonary trunk.

The pulmonary trunk carries blood to the lungs where it releases carbon dioxide and absorbs oxygen. The blood in the lungs returns to the heart through the pulmonary veins. From the pulmonary veins, blood enters the heart again in the left atrium.

The left atrium contracts to pump blood through the bicuspid (mitral) valve into the left ventricle. The left ventricle pumps blood through the aortic semilunar valve into the aorta. From the aorta, blood enters into systemic circulation throughout the body tissues until it returns to the heart via the vena cava and the cycle repeats.

The Electrocardiogram
The electrocardiogram (also known as an EKG or ECG) is a non-invasive device that measures and monitors the electrical activity of the heart through the skin.

Heart Sounds
The sounds of a normal heartbeat are known as "lubb" and "dupp" and are caused by blood pushing on the valves of the heart.

Cardiac Output
Cardiac output (CO) is the volume of blood being pumped by the heart in one minute. The equation used to find cardiac output is: CO = Stroke Volume x Heart Rate

Stroke volume is the amount of blood pumped into the aorta during each ventricular systole, usually measured in milliliters.

Heart rate is the number of heartbeats per minute. The average heart can push around 5 to 5.5 liters per minute at rest. A normal resting heart rate for adults ranges from 60 to 100 beats a minute. |
| Define Cardiac arrest and its Management | |

	CARDIAC ARREST: DEFINITION:A **Sudden Cardiac Death** (SCD) attack is when there is an abrupt loss of heart function and can be due to a variety of heart conditions. CAUSES: Coronary heart disease is the leading cause of sudden cardiac arrest. Many other cardiac and non-cardiac conditions also increase one's risk. RISK FACTORS: Smoking, Obesity,Family history, lack of physical exercise. DIAGNOSTIC STUDIES: A cardiac arrest is usually diagnosed clinically by the absence of a pulse. In many cases lack of carotid pulse is the gold standard for diagnosing cardiac arrest, but lack of a pulse (particularly in the peripheral pulses) may result from other conditions (e.g.shock), or simply an error on the part of the rescuer IMMEDIATE MANAGEMENT: Sudden cardiac arrest may be treated via attempts at resuscitation. This is usually carried out based upon Basic life support (BLS), Advanced cardiac life support (ACLS), Cardiopulmonary Resuscitation (CPR).	Explaining about the cardiac arrest and its management with the help of powerpoint presentation.
Define CPR and BLS.		

CARDIO PULMONARY RESUSCITATION: INTRODUCTION: Cardiopulmonary resuscitation, commonly known as CPR, is an emergency procedure performed in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. BASIC LIFE SUPPORT: Basic life support refers to maintain the airway, support respiration and circulation without the use of equipment. Each year, a number of babies and children will suffer with an accident or illness severe enough to stop their breathing and leads to respiratory arrest. In a small number of these cases, it will even stop their heart beating and leads to cardiac arrest. The best chance of ensuring their survival is to give them emergency treatment known as cardiopulmonary resuscitation (CPR). CPR can consist of many different things, but the initial, vital part is Basic Life Support (BLS). Basic life support is a type of medical care used on someone with a life-threatening injury or condition until full medical care can be given. An emergency responder or someone trained in BLS can provide this critical care. Basic life support consists of cardiopulmonary resuscitation and, when available, defibrillation using automated external defibrillators (AED). The keys to survival from sudden cardiac arrest (SCA) are early recognition and treatment, specifically, immediate initiation of excellent CPR and early defibrillation. The ability to deliver Basic Life Support, and apply basic aspects of first aid, are important community skills that have been shown to save lives.BLS includes maintaining airway and supporting breathing and circulation without the help of any equipment .It comprises of repagination of signs of sudden cardiac arrest, heart attack ,stroke, obstruction of airway by a foreign body	Describing about CPR and BLS with the help of Powerpoint presentation.

Simplified Adult BLS

Unresponsive
No breathing or
no normal breathing
(only gasping)

Activate
emergency
response

Get
defibrillator

Start CPR

Check rhythm/
shock if
indicated

Repeat every 2 minutes

Push Hard • Push Fast

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Eplain about the
indications and

steps performed in CPR.	PURPOSES:	Explained about CPR with the help of Powerpoint presentation.

PURPOSES:

Its main purpose is to restore partial flow of oxygenated blood to the brain and heart.

MOST INDICATIONS:
- ➢ Cardiac arrest(trauma)
- ➢ Respiratory arrest(drowning)

.

Indications :

- ➢ CPR should be performed immediately on any person who has become unconscious and is found to be pulseless.
- ➢ Loss of effective cardiac activity is generally due to the spontaneous initiation of a nonperfusing arrhythmia, sometimes referred to as a malignant arrhythmia. The most common nonperfusing arrhythmias include the following:

- Ventricular fibrillation (VF)
- Pulseless Ventricular activity
- Pulseless electrical activity
- Asystole
- Pulseless bradycardia

Contraindications:

The only absolute contraindication to CPR is a do-not-resuscitate (DNR) order or other advanced directive indicating a person's desire to not be resuscitated in the event of cardiac arrest. A relative contraindication to performing CPR is if a clinician justifiably feels that the intervention would be medically futile. Emergency

cardiac treatments no longer recommended include the following:

- Routine atropine for pulseless electrical activity (PEA)/asystole
- Cricoid pressure (with CPR)
- Airway suctioning for all newborns (except those with obvious obstruction)

Chance of receiving CPR in time:

CPR is likely to be effective only if commenced within 6 minutes after the blood flow stop because permanent brain cell damage occurs when fresh blood infuses the cells after that time, since the cells of the brain become dormant in as little as 4–6 minutes in an oxygen deprived environment and, therefore, cannot survive the reintroduction of oxygen in a traditional resuscitation.

EQUIPMENT:

CPR, in its most basic form, can be performed anywhere without the need for specialized equipment. Universal precautions (ie, gloves, mask, gown) should be taken. However, CPR is delivered without such protections in the vast majority of patients who are resuscitated in the out-of-hospital setting, and no cases of disease transmission via CPR delivery have been reported. Some hospitals and EMS systems employ devices to provide mechanical chest compressions. A cardiac defibrillator provides an electrical shock to the heart via 2 electrodes placed on the patient's torso and may restore the heart into a normal perfusing rhythm.

American Heart Association CPR guidelines:

In 2010, the Emergency Cardiovascular Care Committee (ECC) of the AHA released the Association's newest set of guideness for CPR. Changes for 2010

include the following :

- The initial sequence of steps is changed from ABC (airway, breathing, chest compressions) to CAB (chest compressions, airway, breathing), except for newborns
- "Look, listen, and feel" is no longer recommended

TECHNIQUE:

In its full, standard form, CPR comprises the following 3 steps, performed in order:
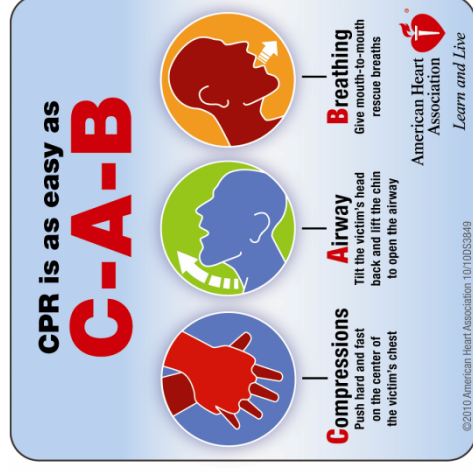
- Chest compressions
- Airway
- Breathing

For lay rescuers, compression-only CPR (COCPR) is recommended.

Positioning for CPR is as follows:

- CPR is most easily and effectively performed by laying the patient supine on a relatively hard surface, which allows effective compression of the sternum
- Delivery of CPR on a mattress or other soft material is generally less effective
- The person giving compressions should be positioned high enough above the patient to achieve sufficient leverage, so that he or she can use body weight to adequately compress the chest

For an unconscious adult, CPR is initiated as follows:

- Give 30 chest compressions
- Perform the head-tilt chin-lift maneuver to open the airway and determine if the patient is breathing
- Before beginning ventilations, look in the patient's mouth for a foreign body blocking the airway

Chest compression

Sternum
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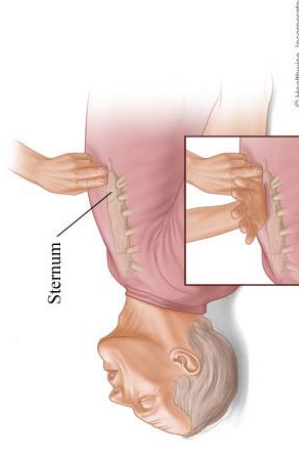
The provider should do the following:

- Place the heel of one hand on the patient's sternum and the other hand on top of the first, fingers interlaced
- Extend the elbows and the provider leans directly over the patient (see the image below)
- Press down, compressing the chest at least 2 in (5 cm)
- Release the chest and allow it to recoil completely
- The compression depth for adults should be at least 2 inches (instead of up to 2 inches, as in the past)

- The compression rate should be at least 100/min
- The key phrase for chest compression is, "Push hard and fast"
- Untrained bystanders should perform chest compression–only CPR (COCPR)
- After 30 compressions, 2 breaths are given; however, an intubated patient should receive continuous compressions while ventilations are given 8-10 times per minute
- This entire process is repeated until a pulse returns or the patient is transferred to definitive care
- To prevent provider fatigue or injury, new providers should intervene every 2-3 minutes (ie, providers should swap out, giving the chest compressor a rest while another rescuer continues CPR

Ventilation

If the patient is not breathing, 2 ventilations are given via the provider's mouth or a bag-valve-mask (BVM). If available, a barrier device (pocket mask or face shield) should be used.

To perform the BVM or invasive airway technique, the provider does the following:

- Ensure a tight seal between the mask and the patient's face
- Squeeze the bag with one hand for approximately 1 second, forcing at least 500 mL of air into the patient's lungs

To perform the mouth-to-mouth technique, the provider does the following:

- Pinch the patient's nostrils closed to assist with an airtight seal

- Put the mouth completely over the patient's mouth
- After 30 chest compression, give 2 breaths (the 30:2 cycle of CPR)
- Give each breath for approximately 1 second with enough force to make the patient's chest rise
- Failure to observe chest rise indicates an inadequate mouth seal or airway occlusion

- After giving the 2 breaths, resume the CPR cycle

ACLS(Advanced Cardiac Life Support)

In the in-hospital setting or when a paramedic or other advanced provider is present, ACLS guidelines call for a more robust approach to treatment of cardiac arrest, including the following:

- ✓ **Drug intervention**
- ✓ **ECG monitoring**
- ✓ **Defibrillation**
- ✓ **Invasive airway procedures**

ADJUNCT DEVICES:

While several adjunctive devices are available, none other than defibrillation. as of 2010, have consistently been found to be better than standard CPR for out-of-hospital cardiac arrest. These devices can be split into three broad groups: timing devices' those that assist the rescuer to achieve the correct technique, especially depth and speed of compressions; and those that take over the process completely.

DEFIBRILLATOR:

Defibrillation is a common treatment for life-threatening cardiac dysrhythmias, ventricular fibrillation and pulseless ventricular tachycardia. Defibrillation consists of delivering a therapeutic dose of electrical energy to the heart with a device called a **defibrillator**. This depolarizes a critical mass of the heart muscle, terminates the

dysrhythmia and allows normal sinus rhythm to be reestablished by the body's
natural pacemaker, in the sinoatrial node of the heart.

Complications:

- Fractures of ribs or the sternum from chest compression (widely considered
  uncommon)
- Gastric insufflation from artificial respiration using noninvasive ventilation
  methods (eg, mouth-to-mouth, BVM); this can lead to vomiting, with further
  airway compromise or aspiration; insertion of an invasive airway prevents
  this problem .