An Evaluate the Effectiveness of Video Assisted Teaching in Terms of Improvement in Ability regarding CPR among Students

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Abstract: *Background: Cardiopulmonary Resuscitation (CPR) is a critical component of basic life support. It is established first line before advanced life support. Cardiopulmonary resuscitation is a potential life saver because it is associated with survival and has the potential to prevent sudden death. All health care providers who are in contact with the patients should have regular resuscitation training as recommended by The American Heart Association (AHA) resuscitation guidelines. Many research studies shows that the victims chances of survival depends on the quality of cardiopulmonary resuscitation which means it has direct impact on survival of the victim. Cardiopulmonary resuscitation (CPR) should be used for those patients with reasonable chance of restoring and prolonging life 1,3,9. Objectives: To evaluate the effectiveness of video assisted teaching in terms of gain in knowledge ability regarding CPR among students, To find out the association between knowledge, ability and socio demographic variables. Methodology: A qualitative research approach had been used, with one group pre & pos observation experimental design was used to evaluate the effectiveness of the audio visual learning package on skills regarding cardiopulmonary resuscitation among final year pharmacy diploma students. Conclusion: Majority of students 55(94.83%) had poor level of ability about CPR, whereas 3(5.17%) of students had good level of ability and none 0 (0%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching. The post-test data depicts that, none 0(0%) had poor level of ability about CPR, whereas majority of students 52(89.66%) of students had good level of ability and 6 (10.34%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching. Hence the data reveals the effectiveness of Video Assisted Teaching.*

Keywords: Cardio Pulmonary Resuscitation (CPR) ,ability and video-assisted teaching

1. Introduction

Sudden cardiac death is a major cause of death in today's world. During the minutes passing from the onset of cardiac arrest to the arrival of professional help, the cardiac arrest victim can only rely upon cardiopulmonary resuscitation (CPR) provided by educated bystanders[4].

The American heart association strongly encourage the people, companies and organization to implement CPR programs to increase the chances of survival for people who have heart related emergencies. With a CPR& AED programme an employee will be better prepared to save the life of co-worker. Since 1995 the AHA has promoted public access defibrillation programs those focused on training lay rescuers to give CPR and use AED in public gathering areas. Such programs have been shown to have significant impact on survival rates. So to providing effective CPR, we should have good knowledge and ability. From this study the researcher focused to improve the student's knowledge and abili

When the heart loses its ability to pump blood and distribute oxygen throughout the body due to which cardiac arrest occurs at that time Cardiopulmonary resuscitation is the method of providing oxygen and blood circulation through the delivery of rescue breathing and chest compressions to victim. Many accidents like road traffic, falls, sports accidents, drowning, electrocution may lead to cardiac arrest due to which the heart stops beating, the brain stop receiving fresh oxygen rich blood. Our brain can survive only about 4-6 minutes without oxygen. This period of 4-6 minutes is therefore critical and is very important to provide oxygen to the brain. This can be done by external chest compression.

Everybody should learn cardiopulmonary resuscitation and update their knowledge and skills about cardiopulmonary resuscitation as it is a necessary option in the field of medicine. Emergencies can strike anyone anywhere. The only person available at the time could be you. Therefore we should possess Cardiopulmonary resuscitation skills no matter who you are. Fortunately a short period of training is required to learn cardio pulmonary resuscitation[4].

Heart diseases are one of the largest killer in the world. Claiming 7.5 million lives every year about every 29 seconds an Indian dies of heart blem. As many as 200000 new heart patients develop every day in India. 6 core India suffer from heart disease and 30% more are at high risk. Research shows that by 2020 India will have the largest coronary heart disease (CAD) burden in the world and will account for one third of all deaths. Many of them will be young. The risk of sudden cardiac death from coronary heart disease in adult is estimated to be one per thousand adult 35 years of age and older per year. About 75% to 80% of all out of hospital cardiac arrests happens at home. Hence being trained to perform basic life support (BLS) can make the difference and you can save a victim from death.

Effective CPR provided immediately after Cardiac arrest can double a victims chance of survival. If more number of people knows CPR more lives can be saved. Health behaviour is a major target of teaching. And it is also assumed that teaching helps in changing behaviour through cognitive and psychomotor changes[5].

Measurable progress is aimed at prevention of cardiac arrest. Cardiac arrest both in and out of the hospital continues to be a major public health challenge. Over these 50 years scientific knowledge about cardiac arrest, pathophysiology and resuscitation mechanism has increased substantially. In our ongoing commitment to ensure optimal community based care for all victims of cardiac arrest, we must continue effectively to translate the science of resuscitation into clinical care and improved resuscitation outcomes. Each year cardiopulmonary resuscitation saves thousands of lives in United States of America. More than 10 million Americans are trained through American heart association and American Red Cross.

The cardiac arrest survival rate falls and estimated 7% to 10% for every minute without effective cardio pulmonary resuscitation. Cardio pulmonary resuscitation if not performed effectively within 4-6 minutes after cessation of breathing can lead to failed cardio pulmonary resuscitation meaning the cardio pulmonary resuscitation attempts were not successful in restoring life brain death. All health team professionals should be able to effectively follow the chain of survival to prevent such disastrous condition that is early recognition → Early basic life support → Early access to emergency services →Early defibrillation.[6]

All the health team members should know how cardio pulmonary resuscitation is given. They should be expert in that. If the health team members are educated and trained well they can save many lives because they are the people who are closely with the patients. Investigator believes that by broadening training and encouraging the public, specially the medical and Para medical professionals/ health care to perform cardio pulmonary resuscitation will save thousands of life. Health team members should know the skills of cardio pulmonary resuscitation not only to practice in the hospital setting, but act as a good Samaritan where ever required.

A retrospective and comparative study was conducted in Hungary, on training nurses for CPR using problem based approach. Data on final CPR exam grades, collected both from PBL and traditionally trained students, were obtained for a total of 1775 students between 2000 and 2007 in three major schools of health sciences in Hungary. Comparison between PBL and traditional teaching methods as well as across schools was made. t-tests on means yielded significant differences (t=3.569; p<0.001) between problem-based learning and conventional training favouring PBL-instructed students. Students who received PBL training had better final CPR exam grades than traditionally trained peers. The only significant difference among schools was found for PBL training. There was no difference across schools in the final CPR grades when traditional training was concerned. PBL was a superior instruction method for CPR training.[7]

Studies have shown that the incidence of SCD is on the rise, especially in the urban regions, which may be largely attributed to the increase in prevalence of coronary artery disease, diabetes and hypertension in India.These studies have shown that the risk stratification and management approach for SCD are conspicuously varied and there is a need for establishing a systematic approach for estimating the incidence and risk factors of SCD in India.[8]

Since CPR measure is the basic fundamental procedure that has to known by all medical personnel, Para-medical personnel and non-medical personnel too. But it requires competency and if this CPR measure is delayed or carelessly given, we may lose the victim. CPR is a life saving measure which helpful to save the life of a person one who has arrest in respiration and heart beat. It is a technique of Basic Life Support [BLS] for oxygenating the brain and heart till appropriate, definitive medical treatment to restore the normal heart and ventilator action. It involves external cardiac massage [manual heart compressions], artificial ventilation by mouth to mouth respirations to restore the heart and lung functions.[9]

2. Statement of the problem

An evaluate the effectiveness of video assisted teaching in terms of improvement in ability regarding CPR among students.

Objectives
1) To evaluate the effectiveness of video assisted teaching in terms of gain in knowledge ability regarding CPR among students.
2) To find out the association between ability and socio demographic variables .

Operational Definitions
1) **Assess:** In this study it refers to evaluate or estimate the knowledge of CPR among final year pharmacy students.
2) **Video assisted teaching: -** It refers to the instructional programme should be so organized and administer that the video assisted method as an integral part of the educational programme.
3) **Ability**: It refers the ability to perform the CPR among final year pharmacy students
4) **Pharmacy Students:** It refers to students who are studying pharmacy in KCT'S pharmacy college Karad.
5) **Cardio Pulmonary Resuscitation:(CPR)** Cardio pulmonary resuscitation is a technique of basic life support for the purpose of oxygenating the brain and heart until appropriate definitive medical treatment can restore the normal heart and ventilator action.

Assumptions of the Study
Video assisted teaching program will be effective to increase the level of knowledge among pharmacy students regarding CPR

Hypothesis
H_1: The mean post ability of Final year Pharmacy Diploma students regarding CPR will be significantly higher than their mean pre observation score.

Delimitation
The study was limited to the final year diploma in pharmacy

3. Review of the literature

1) Studies related to knowledge regarding CPR.

Henry halperin, David j. Carver (2010) the study was conducted to know the quality of CPR in an important predictor of outcome from cardiac arrest. Mechanical chest compression devices provide an alternative to manual CPR. Physiological and animal data suggest that mechanical chest compression devices are more effective than manual CPR. Consequently there has been much interest in the development of new technique devices to improve the efficacy of CPR. The review will consider the evidence and current indication for the use of some of the more common mechanical devices developed to increase the safety and efficacy of CPR Administration[10].

Goucke CR, Dobb GJ (1986) conducted a study The cardiopulmonary resuscitation skills of 160 staff members at a large metropolitan teaching hospital were assessed by a multiple choice questionnaire and a practical test of basic life support skills on a manikin Medical staff members performed significantly better than did nurses in the multiple choice test, but significantly worse in the practical test; 48 (60%) of 80 nurses and only 26 (32.5%) of 80 doctors passed the practical test. Training in resuscitation by the St John Ambulance Association as a medical student may have improved the basic life support skills of doctors but there is clearly a need for continued revision and assessment of resuscitation skills.[16]

CHEN Xiu-zhen, ZHANG Rui-lian, FU Yan-mei, WANG Tao (2008) A study was conducted to assess the knowledge of cardiopulmonary resuscitation among the nurses of (n=302) community based health services in Hainan province of Chaina. A survey was made by randomized stratified cluster sampling using self designed questionnaires. The passing rate for qualification of knowledge of cardiopulmonary resuscitation was found to be very low in Hainan province (23-18%). A significant difference of regions and different educational level among the nurses were also noticed. It may be concluded from the study that nurses of community based health services in Hainan province lack the basic knowledge of cardiopulmonary resuscitation especially in rural region.[18]

Hemming TR Hudson MF Durham C Richuso K (2003) Nurses work in a variety of clinical settings. Some of these areas involve care of patients with acute illnesses while others do not. No matter in which setting a nurse works, the possibility exists that he or she will participate in the resuscitation of a patient. When patients face a life-threatening event such as cardiopulmonary arrest, they rely on the competence and skills of healthcare professionals. Because nurses are often the healthcare providers closest to the bedside and the first to respond to patients' needs, their knowledge and skills need to be optimal and their performance proficien[19]

Ehlers VJ, Lakshmi Rajeswaran, (2013) did a study on Cardiopulmonary resuscitation knowledge and skills of registered nurses in Botswana Background: In Botswana nurses provide most health care in the primary, secondary and tertiary level clinics and hospitals. Trauma and medical emergencies are on the increase, and nurses should have cardiopulmonary resuscitation (CPR) knowledge and skills in order to be able to implement effective interventions in cardiac arrest situations. Objective: The objective of this descriptive study was to assess registered nurses' CPR knowledge and skills. Method: A pre-test, intervention and re-test time-series research design was adopted, and data were collected from 102 nurses from the 2 referral hospitals in Botswana. A multiple-choice questionnaire and checklist were used to collect data. Results: All nurses failed the pre-test. Their knowledge and skills improved after training, but deteriorated over the three months until the post-test was conducted. Conclusion: The significantly low levels of registered nurses' CPR skills in Botswana should be addressed by instituting country-wide CPR training and regular refresher courses[21].

2) Studies related to the effectiveness of teaching programme.

Nyman J Sihvonen, M (1997) conducted a study on cardiopulmonary resuscitation skill among nurses and nursing students in southern Finland and Hungary, and to assess the influence of resuscitation teaching and other group characteristics on performance. The study group consisted of 75 nurses 223 final term students of different nursing institutes. (34 men and 264 women) participated in the study. Logistic regression showed that the best predictors for good response assessment skills went to those who were nursing students who had studied resuscitation skills sometime during the previous 6 months. The best predictor of the skill to open the airway was a positive attitude towards personal cardiopulmonary resuscitation (CPR) skills, i.e. self-confidence. The predictor for adequate skills in artificial ventilation was that they belonged in the group of nursing students who had benefited from recent resuscitation training (<6 months).[25]

Treesa Joseph (2005) did a quasi experimental study was on knowledge and practice regarding neonatal CPR among 50 staff nurses in a selected hospital in Mangalore. The study results showed that there was a highly significant difference between ($t_{(49)}$=36.412, P<0.001) the mean post-test (31.2) and pre-test (15.08) knowledge scores. There was a positive significant correlation (r= 0.9757) between post-test knowledge and practice. There was significant association between pre-test knowledge score and variables like total clinical experience (χ^2=4.5387, p<0.05); however no association was found between pre-test knowledge score and variables like age, educational qualifications and experience in specialized areas (NICU, PICU, labour room, labour OT).[29]

Research Methodology
This deals with the methodology adopted in order to meet the set objectives of this study and for assessing the effectiveness of audio visual learning package on an ability regarding cardiopulmonary resuscitation among final year pharmacy diploma students at KC T's Krishna College of pharmacy karad. It include the description of the research approach, research design, setting of the study, inclusive and

exclusive criteria for selection of the sample , sample and sampling technique ,development of data collection ,tool content validity, reliability, pilot study, procedure for data collection and plan for data analysis.

Research Approach

An evaluative research approach had been used, with one group pre test post test experimental design was used to evaluate the effectiveness of the audio visual learning package on ability regarding cardiopulmonary resuscitation among final year pharmacy diploma students. The main aim of evaluate research in present study was to assess the improvement of the ability regarding cardiopulmonary resuscitation according to post observation scores with pre observation score.

Research Design

This study used a pre experimental one group pre test and post test.

$$O_1 \longrightarrow X \longrightarrow O_2$$

- O_1 Pre observation
- X Intervention
- O_2 Post observation

O_1: Administration of use observation checklist for assess the ability.

X:- Administration of audio visual learning package.

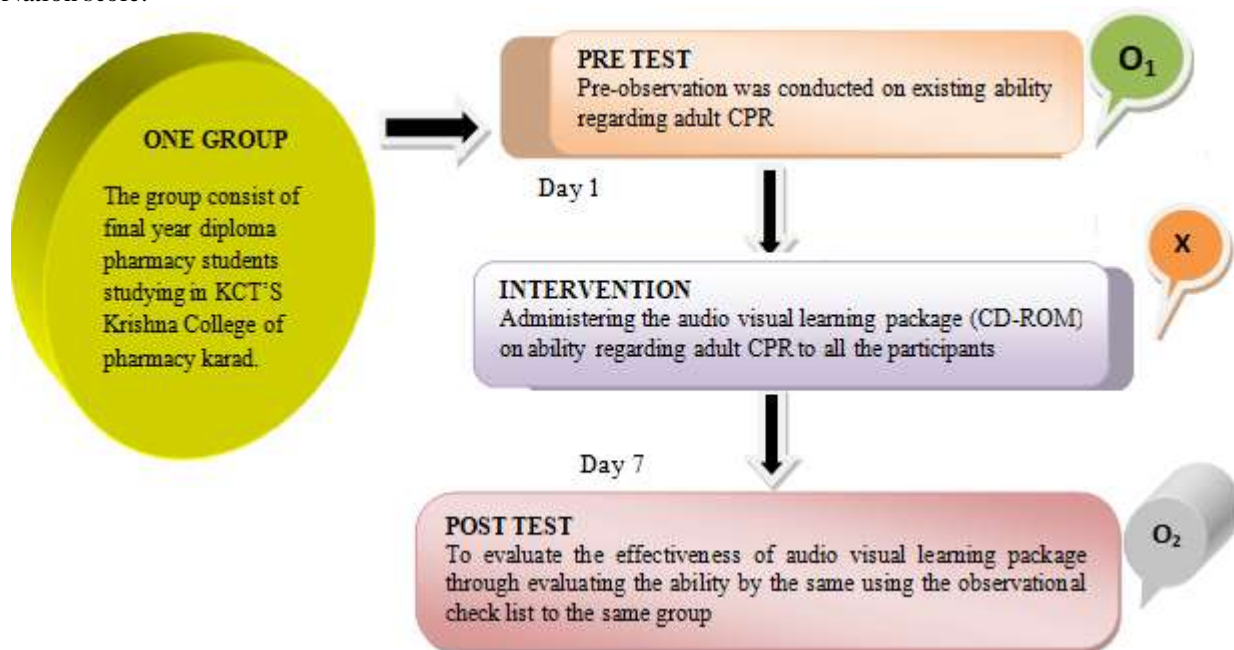O_2: Administration of observational checklist for assessing the ability.

Figure 2: shows the study design

Setting of the Study

The research setting of the present study was KCT's Krishna College of pharmacy and Krishna institute of nursing science Karad.

Krishna College of pharmacy is established in 2006 and it is affiliated to Maharashtra State Board of Technical Education & approved by All India Council for Technical Education.

The college offer Diploma in Pharmacy course and the yearly intake of this college is 60. Krishna institute of nursing science karad offers course like M.Sc Nursing, B.Sc Nursing, post basic B.Sc Nursing & RGNM. It has a parent hospital established in 1982 which is 1125 bedded multi speciality hospital in western Maharashtra. it was selected because of availability of samples feasibility of conducting study and ethical clearance.
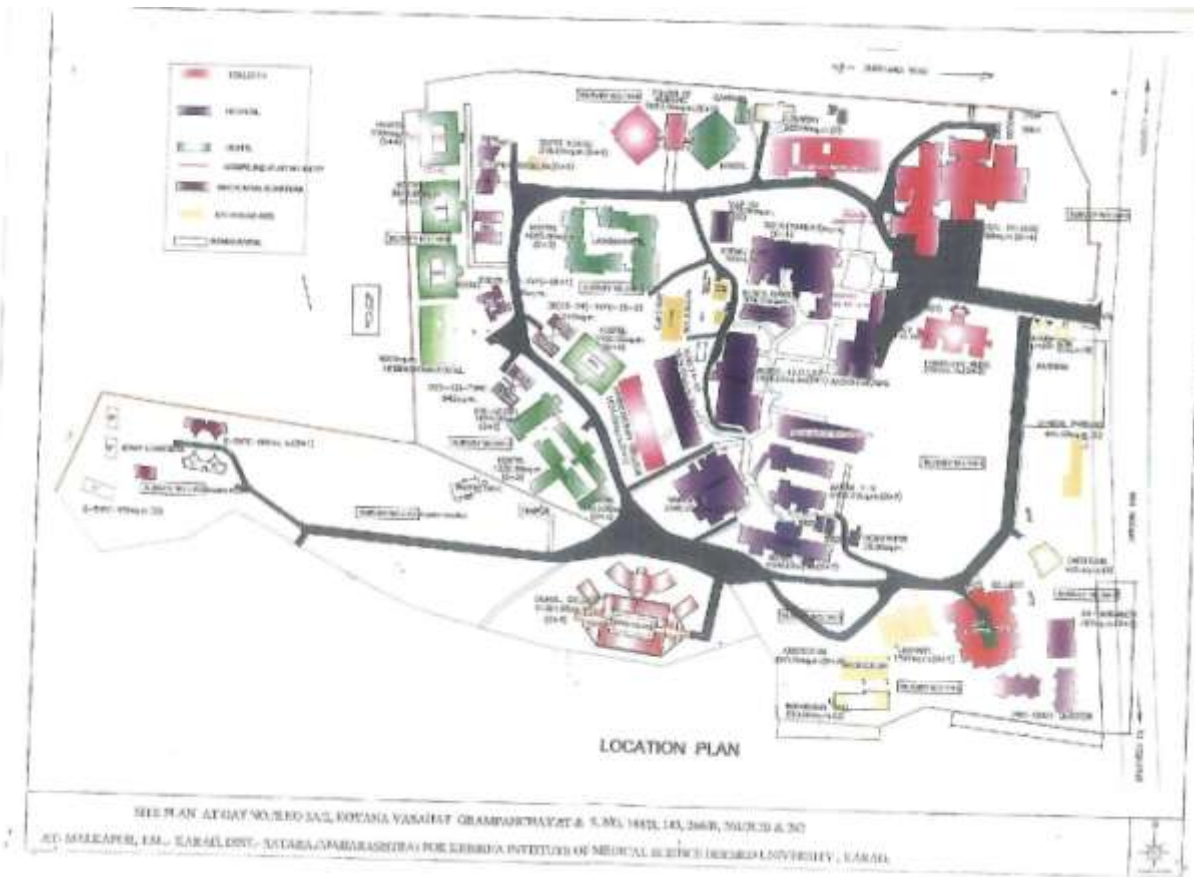
Figure 3: Krishna Institute of Medical sciences Deemed university Map

Sample
A sample is a selected proportion of a defined population. In this study the sample consisted of 58 students who studied in KCT'S Krishna college

Sample Technique
Non probability convenient purposive sampling technique includes participants who were easily accessible to the researcher and who meet the criteria of the study.

Inclusive Criteria
1) Students who were studying final year Pharmacy at KCT'S Pharmacy College, Karad.
2) Students who were available at the time of data collection.
3) Students who were willing to participate in the study

Exclusive Criteria
1) Students who were not willing to participate in the study.

Variables
Three types of variables were dependent variables, Independent Variables and Demographic Variables.

Dependent variables
Dependent variables were knowledge and ability of the selected students regarding cardiopulmonary resuscitation in this study.

Independent Variables
The Planned video assisted teaching programme on cardio pulmonary resuscitation.

Demographic Variables
The base line information such as age, gender, religion, and previous knowledge about CPR,

Development of the Tool

Development of Video (Intervention)
The audio visual learning package (A.V aid CD-ROM) on cardiopulmonary resuscitation was developed based on the review of the related research / non research literature, books online as well as streaming media on the internet and standardized instructional videos on CPR as well as objective stated and instruction of American Heart Association instructor. The following steps were adapted to Develop Audio Visual Learning package

Preparation of Audio Visual Learning Package (CD-ROM) On Cardiopulmonary Resuscitation
Based on the content and instructions from the experts the script was prepared and schedule for shooting was prepared and schedule for shooting was prepared

A professional videographer from Art and Photography Department of Krishna Institute of Medical science Deemed University was hired and the criteria and location of the shoot was discussed. The venue of the shooting was selected as a fundamental laboratory of KINS Kard.

Prior permission was taken from principal and the in charge of Fundamental lab

Tool and technique

The tools of data collection translate the research objectives into specific questions/items, the response to which will provide the data required to achieve the research objectives. In order to achieve this purpose each question/item much convey to the respondent the idea or group of ideas required by the research objectives and each item must obtain a response which can be analyzed for fulfilling the research objectives.

The tools used in this study for data collection are

Section 1: Structured questionnaire
a) Demographic Data
b) An observational Checklist

The following sources were used for the development of the tool.
1) Literature review.
2) Consultation and discussion with nursing experts, AHA instructors & Medical Experts.
3) Personal experience and discussion with guide and colleagues.

Ethical clearance

The main study conducted after the approval of ethics committee of the Krishna Institute of Medical Science Deemed University, permission obtained from the respective head of the institutions.

Blue print

A blue print was prepared prior to the construction of the observational checklist which showed the distribution of the items according to the content areas, number of items serial numbers of item and weightage in percentage for each content area.
Description of the tool

Section I: An observational checklist
The purpose of the observational checklist was recorded the skills of the students regarding Adult CPR. This consists of 12 items. Test answered on the basis of 0-3 point scale.

Technique

The investigator choose the following technique in this study An observation technique was used to assess the skills of the students before and after the VAT intervention.

Result of the Pilot Study

On the analysis of data gathered during pilot study it was founded that there was significant difference between the pre-test and post test of the students and it meant that the learning package was effective, and tool required no further changes and also gave better insight to the investigator.

Description of the teaching plan

The method used for training was audio visual aids teaching programme. It was support by a video assisted teaching

Procedure for Data Collection

The researcher obtained the formal permission from the principal KCT'S Krishna College of pharmacy Karad to collect the data for the main study. The main study was conducted at Krishna pharmacy college Karad

Steps for conducting main study were as follows
1) The investigator introduced him in front of the students
2) Written informed consent was obtained from each subject after explaining the purpose of the study
3) A structured questionnaire was administered to assess the socio demographic data and pre test knowledge related to Adult CPR to study Object
4) By using the observational check list calculated the ability of the student.
5) Audio visual learning package (CD- ROM) was shown to the subject
6) Post test was conducted on 7th day after showing the learning package.
7) Duration of the data collection was days.
The data collection began on 24th October 2016; the first day researcher introduced himself to the students. After explaining the purpose and details of the study, assurance was given regarding the confidentially of the collected data.

On the very next day, consent from the students was taken and socio demographic data acquired. On 26th and 27th, the pre-test ability of students was taken batch wise using the observational checklist. Each student was given a time interval of 4 minutes to complete the procedure. Two days later, on 30th Oct. 2016, the students were shown a video on "Adult CPR" application. After 7 days, on 6th Nov 2016 another test was conducted over a period of 4 hours to check the ability of students in assessing the effectiveness of the video. A structured questionnaire was given to students later on, for the post test knowledge assessment.

Plan for data analysis

The data obtained was analyzed in terms of objective of the study by using descriptive and inferential statistics. The investigator planned to analyzed data from the questionnaire and observational checklist using frequency and percentage and paired 't' test. Ch-square test was used to find out the association between pre and post test knowledge & ability score with selected socio demographic variable

4. Analysis and Interpretation

Objectives of the Study
1) To evaluate the effectiveness of video assisted teaching in terms of gain in knowledge ability regarding CPR among students.
2) To find out the association between knowledge, ability and socio demographic variables

Hypothesis
H_1: The mean post ability of Final year Pharmacy Diploma students regarding CPR will be significantly higher than their mean pre observation score

Organization of Findings
In order to find out the improvement in ability the responds the data s organized, analyzed and presented under the following headings

Section A
Distribution of the students according to socio demographic variables

Section B
Evaluate the effectiveness of audio visual learning packages on CPR

Section C
Frequency and percentage distribution of pre test ability scores regarding CPR
Frequency and percentage distribution of post test ability score of regarding CPR
Comparison of pre test and post test ability score of students regarding CPR
Evaluate the effectiveness of audio visual learning packages on ability of the student regarding how to provide CPR.
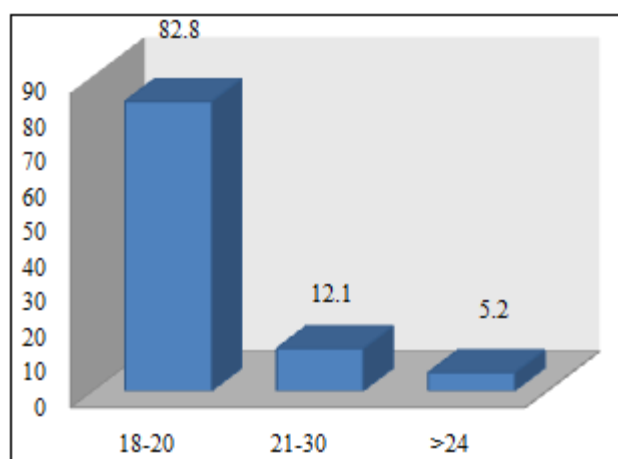
Section – A

Figure 4: Bar diagram representing distributions of Students according to age groups

The above diagram depicts that most of 48 (82.8%) participant sof Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad were in the age group of 18-20 years followed by7 (12.1%) who were in the age group of 21-30 years and 3(5.2%) were >24 years of age.
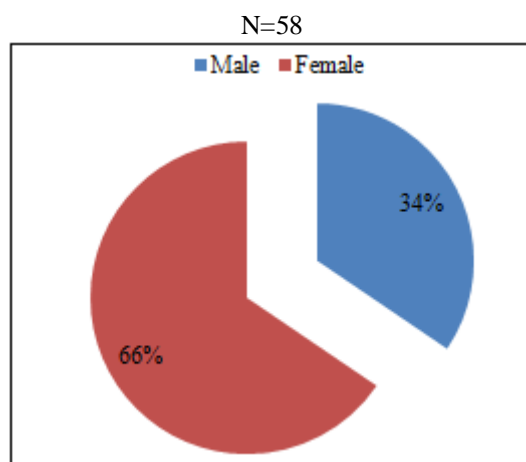

Figure 5: Pie diagram representing distributions of students according to gender

The above diagram depicts that most of 38(66%) participant of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad were females and the remaining 20 (34%) respondents of were males.
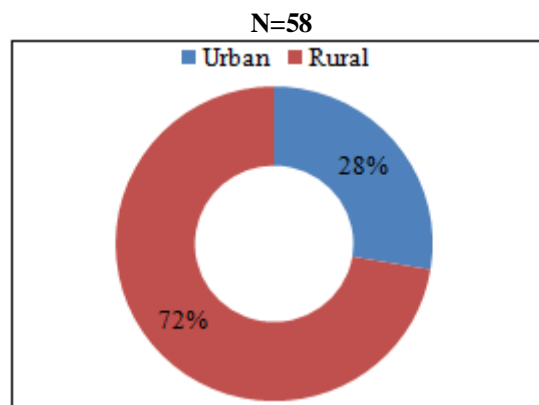

Figure 6: Distributions of Students according to residence

The above diagram depicts that most of42 (72%) participant of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad live in rural area while only 16(28%) live in urban area.
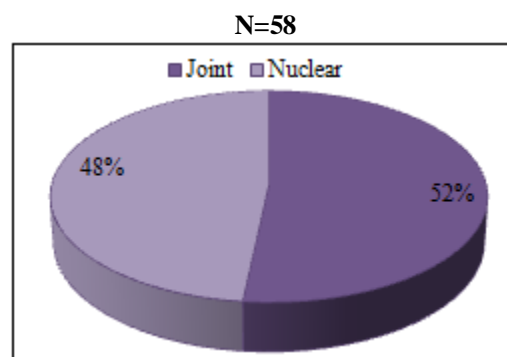
Figure 7: Pie diagram representing distributions of students according to type of family

The above pie diagram shows, majority of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad 30 (52%) of live in joint family and28 (48%) from nuclear family.

Figure 8: Cylindrical Bar diagram representing distributions of students according information about the emergency care for a person who collapses and becomes unresponsive.

The above bar diagram shows, majority of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad 35(60.3%)have information about emergency care for a person who collapses and becomes unresponsive while 23 (39.7%) have no information.

Figure 9: Cylindrical Bar diagram representing distributions of students according information about emergency care/ cardio pulmonary resuscitation given to an un responsive person whose heart beat and breathing has suddenly stopped

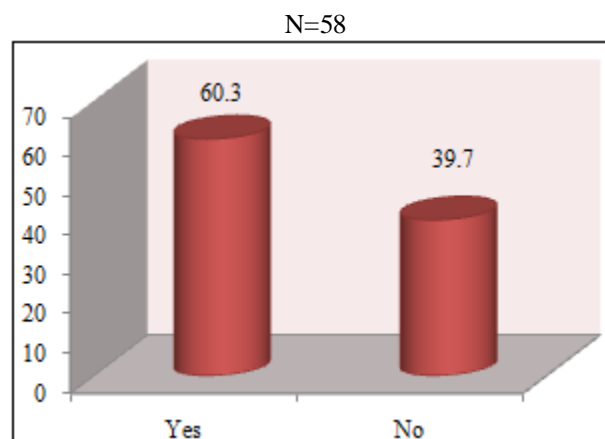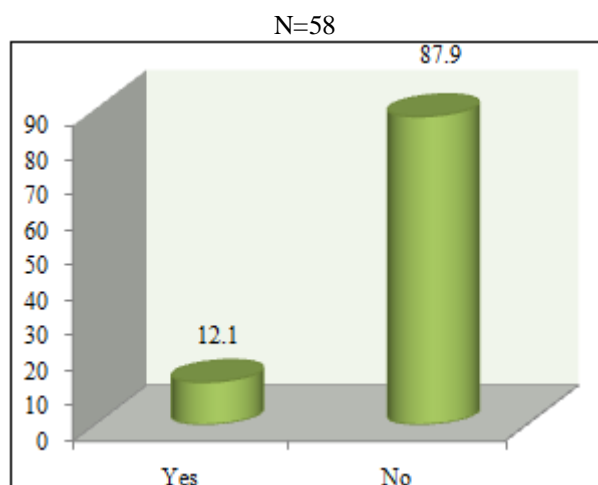The above bar diagram shows, majority of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad .51(87.9%) have no idea about emergency care to an un responsive person whose heart beat and breathing has suddenly stopped while only 7 (12.1%) have information.
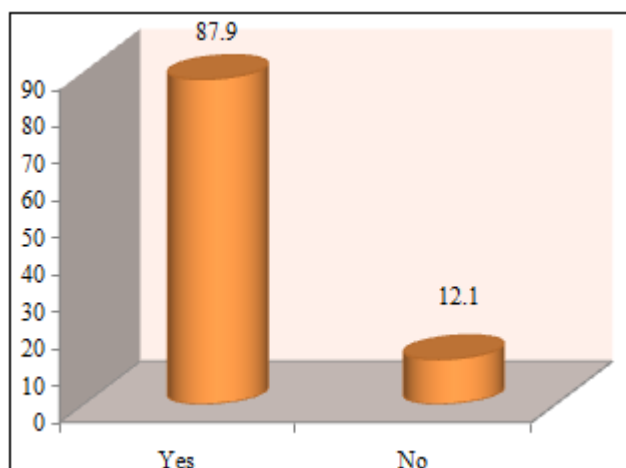

Figure 10: Cylindrical Bar diagram representing distributions of students according information from television or read in newspapers, magazines etc about basic life support/ cardio pulmonary resuscitation.

The above bar diagram shows, majority of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad i.e. 51(87.9%) have received information from television or read in newspapers, magazines etc about basic life support/ cardio pulmonary resuscitation while 7(12.1%) have not received such information.

Section B

Table 8: Comparison of ability of students before and after video-assisted teaching (VAT), N=58

Level of Ability	Score	Pre Test		Post Test	
		No	%	No	%
Poor	0-12	55	94.83	0	0.00
Good	13-24	3	5.17	52	89.66
Excellent	25- 36	0	0.00	6	10.34
Total		58	100.00	58	100.00

The above table shows the comparison of pre test and post-test ability of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad on Adult Cardio Pulmonary Resuscitation (CPR). The pre-test table depicts that, majority of students 55(94.83%) had poor level of ability about CPR, whereas 3(5.17%) of students had good level of ability and none 0 (0%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching.

The post-test table depicts that, none 0(0%) had poor level of ability about CPR, whereas majority of students 52(89.66%) of students had good level of ability and 6 (10.34%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching.
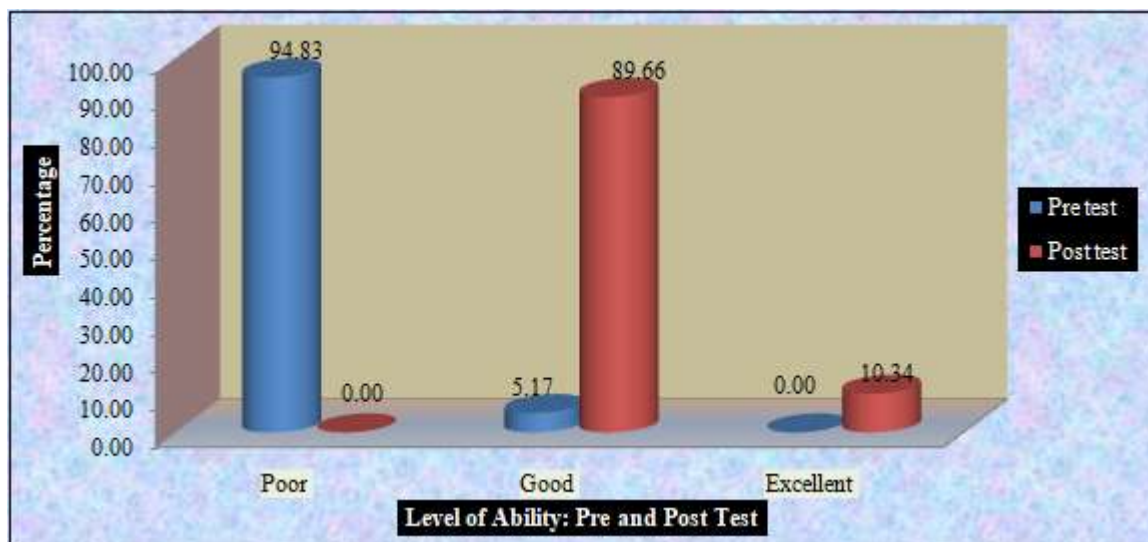N=58

Figure 16: Simple bar diagram representing Mean % of the ability of students regarding Adult CPR before and after administering the Video Assisted Teaching.

Table 9: Determining the ability of final year pharmacy diploma students regarding adult cardio pulmonary resuscitation (CPR), N=58

Pre test			Post test			Mean gain percentage	Paired t statistic	p- value
Mean	Mean Percentage	SD	Mean	Mean Percentage	SD			
7.66	21.26	2.93	20.83	57.85	3.89	36.59	24.34	<0.0001

The above table depicts the mean and standard deviation of ability score obtained before and after the administration of the Video Assisted Teaching.

The paired t test was used to test the hypothesis and highly significant difference in the level of ability between pre-test and post-test by Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) and is significant (p< 0.0001).

Section C

Table 10: Association between demographic variables and pre-test knowledge level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad on Adult Cardio Pulmonary Resuscitation (CPR), **N=58**

Sr. No	Socio Demographic Variables	No.	%	Knowledge: Pre Test				Chi Square statistic	P value
				Poor		Good			
				No.	%	No.	%		
1	**Age**								
	18-20	48	82.8	39	82.98	9.00	81.82	1.12	0.57
	21-30	7	12.1	5	10.64	2.00	18.18		
	>24	3	5.2	3	6.38	0.00	0.00		
2	**Gender**								
	Male	20	34.5	12	25.53	8.00	72.73	8.79	**0.003***
	Female	38	65.5	35	74.47	3.00	27.27		
3	**Residence**								
	Urban	16	27.6	13	27.66	3.00	27.27	0.001	0.98
	Rural	42	72.4	34	72.34	8.00	72.73		
4	**Type of Family**								
	Joint	30	51.7	23	48.94	7.00	63.64	0.77	0.38
	Nuclear	28	48.3	24	51.06	4.00	36.36		
5	**Have you received any information about the emergency care for a person who collapses and becomes unresponsive?**								
	Yes	35	60.3	33	70.21	2.00	18.18	10.08	**0.001***
	No	23	39.7	14	29.79	9.00	81.82		
6	**Have you ever seen emergency care/ cardio pulmonary resuscitation given to an un responsive person whose heart beat and breathing has suddenly stopped?**								
	Yes	7	12.1	6	12.77	1.00	9.09	0.11	0.74
	No	51	87.9	41	87.23	10.00	90.91		
7	**Have you ever seen on television or read in newspapers, magazines etc about basic life support/ cardio pulmonary resuscitation?**								
	Yes	51	87.9	41	87.23	10.00	90.91	0.11	0.6
	No	7	12.1	6	12.77	1.00	9.09		

- Significant at P<0.05 level

Table-10 shows the association of pre test knowledge level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) before administering the Video Assisted Teaching with their selected demographical variables, using Chi –square test. The analysis revealed that there is significant association between gender and information about the emergency care for a person who collapses and becomes unresponsive with pre test knowledge. No significant association could be found with other demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad with pre test knowledge.

Table 12: Association between demographic variables and pre-test ability level of the Students on Adult Cardio Pulmonary Resuscitation (CPR), N=58

Sr. No.	Socio Demographic Variables	No.	%	Ability: Pre Test				Chi Square statistic	P- value
				Poor		Good			
				No.	%	No.	%		
1	Age								
	18-20	48	82.8	45	81.82	3	100.00	0.66	0.72
	21-30	7	12.1	7	12.73	0	0.00		
	>24	3	5.2	3	5.45	0	0.00		
2	Gender								
	Male	20	34.5	20	36.36	0	0.00	1.67	0.19
	Female	38	65.5	35	63.64	3	100.00		
3	Residence								
	Urban	16	27.6	15	27.27	1	33.33	0.05	0.82
	Rural	42	72.4	40	72.73	2	66.67		
4	Type of Family								
	Joint	30	51.7	29	52.73	1	33.33	0.43	0.51
	Nuclear	28	48.3	26	47.27	2	66.67		
5	Have you received any information about the emergency care for a person who collapses and becomes unresponsive?								
	Yes	35	60.3	33	60.00	2	66.67	0.05	0.82
	No	23	39.7	22	40.00	1	33.33		
6	Have you ever seen emergency care/ cardio pulmonary resuscitation given to an un responsive person whose heart beat and breathing has suddenly stopped?								
	Yes	7	12.1	7	12.73	0	0.00	0.43	0.51
	No	51	87.9	48	87.27	3	100.00		
7	Have you ever seen on television or read in newspapers, magazines etc about basic life support/ cardio pulmonary resuscitation?								
	Yes	51	87.9	48	87.27	3	100.00	0.43	0.51
	No	7	12.1	7	12.73	0	0.00		

- Significant at P<0.05 level

Table-12 shows the association of pre test ability level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) before administering the Video Assisted Teaching with their selected demographical variables, using Chi –square test. The analysis revealed that no significant association could be found with any of the demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad with pre test ability.

Table 13: Association between demographic variables and post test ability level of Students on Adult Cardio Pulmonary Resuscitation (CPR), N=58

Sr. No.	Socio Demographic Variables	No.	%	Ability: Pre Test				Chi Square statistic	P- value
				Good		Excellent			
				No.	%	No.	%		
1	Age								
	18-20	48	82.8	43	82.69	5	83.33	2.52	0.28
	21-30	7	12.1	7	13.46	0	0.00		
	>24	3	5.2	2	3.85	1	16.67		
2	Gender								
	Male	20	34.5	16	30.77	4	66.67	3.07	0.08
	Female	38	65.5	36	69.23	2	33.33		
3	Residence								
	Urban	16	27.6	15	28.85	1	16.67	0.39	0.53
	Rural	42	72.4	37	71.15	5	83.33		
4	Type of Family								
	Joint	30	51.7	28	53.85	2	33.33	0.91	0.34
	Nuclear	28	48.3	24	46.15	4	66.67		
5	Have you received any information about the emergency care for a person who collapses and becomes unresponsive?								
	Yes	35	60.3	33	63.46	2	33.33	2.04	0.15
	No	23	39.7	19	36.54	4	66.67		

6	Have you ever seen emergency care/ cardio pulmonary resuscitation given to an un responsive person whose heart beat and breathing has suddenly stopped?							
	Yes	7	12.1	7	13.46	0	0.00	0.92	0.34
	No	51	87.9	45	86.54	6	100.00		
7	Have you ever seen on television or read in newspapers, magazines etc about basic life support/ cardio pulmonary resuscitation?							
	Yes	51	87.9	45	86.54	6	100.00	0.92	0.34
	No	7	12.1	7	13.46	0	0.00		

*- Significant at P<0.05 level

Table-13 shows the association of post test ability level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) after administering the Video Assisted Teaching with their selected demographical variables, using Chi –square test. The analysis revealed that no significant association could be found with any of the demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad with post test ability.

5. Discussion

Objectives of the Study
1) To evaluate the effectiveness of video assisted teaching in terms of gain in knowledge ability regarding CPR among students.
2) To find out the association between knowledge, ability and socio demographic variables.

The first objective of the study is: -
1) **To evaluate the effectiveness of video assisted teaching in terms of gain in ability regarding CPR among students.**
The pre-test data depicts that, majority of students, 38(65.52%) had poor level of knowledge about CPR, whereas 20(34.48%) of students had good level of knowledge and none 0 (0%) of students had Excellent knowledge regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching.

The post-test data depicts that, 1(1.72%) had poor level of knowledge about CPR, whereas majority of students 27(46.55%) of students had good level of knowledge and 30 (51.72%) of students had Excellent knowledge regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching.

Hence the data reveals the effectiveness of Video Assisted Teaching.

Also, the pre-test data depicts that, majority of students 55(94.83%) had poor level of ability about CPR, whereas 3(5.17%) of students had good level of ability and none 0 (0%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching.

The post-test data depicts that, none 0(0%) had poor level of ability about CPR, whereas majority of students 52(89.66%) of students had good level of ability and 6 (10.34%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching.

Hence the data reveals the effectiveness of Video Assisted Teaching.

The Last objective of the study is:

2) **To find out the association between ability and socio demographic variables.**
The association of knowledge level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) before and after administering the Video Assisted Teaching with their selected demographical variables, using Chi –square test was done.

The analysis revealed that there is significant association between information about the emergency care for a person who collapses and becomes unresponsive with post test knowledge. No significant association could be found with other demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad with post test knowledge.

The association of pre test and post test ability level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR) before and after administering the Video Assisted Teaching with their selected demographical variables, using Chi –square test was done. The analysis revealed that no significant association could be found with any of the demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad with pre and post test ability.

The finding of the present study is supported by a quasi experimental design with pre and post test study conducted by Dr. K. Tamizharasi. The pre test mean knowledge was 43% whereas in post test it was 58%. Highly significant difference was founded between the total knowledge score of pre and post test. It revels the effectiveness of VAT programme and it is similar with the present study findings

The findings of the present study are supported by the other study which was conducted by Ruby Prathan and Geeta Rani Nayak in IMS and SUM hospitalS Bhubanswar, Odisha. The study was conducted to assess the pre and post knowledge of staff nurses on neonatal resuscitation. The data was collected from 40 staff nurses using structured knowledge questionnaire .The study results revealed that the mean post test knowledge score (17.92) was higher than the mean pre test knowledge score(13.17).Enhancement between the pre-test and post test was obtained by paired "t" test value 6.81 for knowledge on neonatal resuscitation at p <0.001.which was highly significant in improving the knowledge of staff

nurses. There is extremely significant association between the demographic variables like mass media exposer and the post test knowledge as the chi square value is 17.14 at p value 0.002.The findings conclude that the video assisted teaching module developed by the researcher was found to be helpful in enhancing knowledge of staff nurses regarding neonatal resuscitation. Thus it may reduce the incidence of neonatal mortality rate

The findings of the present study are supported by another study which was conducted by Bonnie Lynch a, Eric L. Einspruch a, and Graham Nichol b, the study was conducted to assess the effectiveness of a 30-min CPR self-instruction program for lay responders: a controlled randomized study. The data was collected from 285 adults between 40 and 70 years old who had had no CPR training within the past 5 years were assigned to an untrained control group, Heart saver training, or one of three versions of VSI. Basic CPR skills were measured by instructor assessment and by a censored manikin. The percentage of subjects who assessed unresponsiveness, called the emergency telephone number 911, provided adequate ventilation, proper hand placement, and adequate compression depth was significantly better (P < 0.05) for the VSI groups than for untrained controls. VSI subjects tended to have better overall performance and better ventilation performance than did Heart saver subjects. And the study concluded that older adults learned the fundamental skills of CPR with this training program in about half an hour. If properly distributed, this type of training could produce a significant increase in the number of lay responders who can perform CPR.

Hypothesis Testing
Hypothesis testing was done to evaluate the effectiveness of Video Assisted Teaching on ability of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR). The paired 't' test was used to test the hypothesis and significant difference in the level of ability between pre-test and post-Observation. Chi-square test was used to test the association between the level of ability with selected socio demographic variables of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad towards Adult Cardio Pulmonary Resuscitation (CPR).

The overall mean score of Pre-test ability is 7.66(21.26%) and overall mean score of post-test ability was 20.83(57.85%). Based on the Paired t tests p-value, H_0 is rejected as there was significant difference between pre test and post test knowledge and ability scores of the Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR). And H_1 was accepted as there was significant association between pre and post test knowledge scores and selected demographic variables.

6. Conclusion

The data was collected by the investigator during the pre-test revealed that the ability of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad on Adult Cardio Pulmonary Resuscitation (CPR).

Pre-Observation
Ability: Majority of students 55(94.83%) had poor level of ability about CPR, whereas 3(5.17%) of students had good level of ability and none 0 (0%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching.

Post-Observation
After the administration of Video Assisted Teaching

Ability: The post-test data depicts that, none 0(0%) had poor level of ability about CPR, whereas majority of students 52(89.66%) of students had good level of ability and 6 (10.34%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching.

Hence the data reveals the effectiveness of Video Assisted Teaching.

Ability: Majority of students 55(94.83%) had poor level of ability about CPR, whereas 3(5.17%) of students had good level of ability and none 0 (0%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) before administration of Video Assisted Teaching. The post-test data depicts that, none 0(0%) had poor level of ability about CPR, whereas majority of students 52(89.66%) of students had good level of ability and 6 (10.34%) of students had Excellent ability regarding Adult Cardio Pulmonary Resuscitation (CPR) after administration of Video Assisted Teaching. Hence the data reveals the effectiveness of Video Assisted Teaching.

From the data analysis and findings of the present study, it is concluded that there was significant difference between the pre-observation ability level of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad regarding Adult Cardio Pulmonary Resuscitation (CPR).

The mean knowledge score of 58 Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad during the pre-test was 33.19% where as it had increased up to 70.40% during the post-test as an effectiveness of Video Assisted Teaching. Therefore the difference assessed was 37.21% between pre-test and post-test.

The mean ability score of 58 Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad during the pre-test was 21.26% where as it had increased up to 57.85% during the post-test as an effectiveness of Video Assisted Teaching. Therefore the difference assessed was 36.59% between pre-test and post-test.

Hence on-going teaching and health education programs can further improve the knowledge of Final year Pharmacy Diploma Students at KCT'S Krishna College of Pharmacy, Karad.

7. Future Scope

1) Same study can carried out on larger population of lay people
2) Similar study can carried out the by developing audio-visual aids package on different body system of human body
3) The study can carried out to assess the knowledge as well as skill of other medical students or lay people regarding CPR
4) A descriptive study can be carried out to assess the teaching methods used to teach CPR regarding the effective understanding of those methods used for gaining knowledge in other colleges

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