

**A STUDY TO ASSESS THE KNOWLEDGE
ABOUT CARDIO PULMONARY
RESUSCITATION GUIDELINES
AMONG CARDIAC NURSES**

PROJECT REPORT

Submitted in partial fulfillment of the requirements

For the

Diploma in Cardiovascular and Thoracic Nursing

By

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Code No. 6198

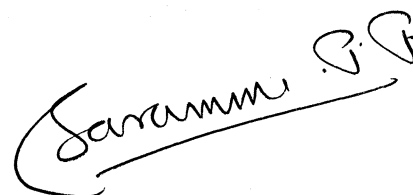


**SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL
SCIENCES AND TECHNOLOGY, THIRUVANANTHAPURAM**

November 2011

CERTIFICATE FROM SUPERVISORY GUIDE

This is to certify that Miss. NISHA L. S has completed the project work on **“A STUDY TO ASSESS THE KNOWLEDGE ABOUT CARDIO PULMONARY RESUSCITATION GUIDELINES AMONG CARDIAC NURSES in SCTIMST, Thiruvananthapuram”** under my direct supervision and guidance for the partial fulfillment of the Diploma in Cardiovascular and Thoracic Nursing in the University of SCTIMST, Thiruvananthapuram. It is also certified that no part of the report has been included in any other thesis for procuring any other degree by the candidate.



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November 2011

CERTIFICATE FROM THE CANDIDATE

This is to certify that the project on **“A STUDY TO ASSESS THE KNOWLEDGE ABOUT CARDIO PULMONARY RESUSCITATION GUIDELINES AMONG CARDIAC NURSES in SCTIMST, Thiruvananthapuram ”** is a genuine work done by me, under the guidance of Dr. P.P. Saramma, PhD, Senior Lecturer in Nursing, SCTIMST, Thiruvananthapuram. It is also certified that this work has not been presented previously to any other University for award of degree, diploma or other recognition.

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APPROVAL SHEET

This is to certify that Miss. NISHA L .S bearing code no: 6198, has been admitted to the Diploma in Cardiac nursing, in January 2011 and she has Undertaken the Project entitled “**A STUDY TO ASSESS THE KNOWLEDGE ABOUT CARDIO PULMONARY RESUSCITATION GUIDELINES AMONG CARDIAC NURSES**” of SCTIMST, Trivandrum, which is approved for the Diploma in cardiac nursing, Awarded by the Sree Chitra Tirunal Institute For Medical Science and Technology, Trivandrum and it is found satisfactory.

EXAMINERS

(1).....

(2).....

GUIDE

(1).....

(2).....

Thiruvananthapuram

November 2011

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NISHA L .S

ABSTRACT

Topic: A study to assess the knowledge about Cardio Pulmonary Resuscitation Guidelines among cardiac nurses. Nurses can be life saving rescuer for a cardiac arrest victim. CPR skills and their applications depend on the nurse's training, experience and confidence. Highly trained nurses working together should coordinate their care and perform chest compressions as well as ventilations in a team-based approach. All rescuers regardless of training should provide chest compressions to all cardiac arrest victims. **Objectives:** (1) To assess the knowledge level of cardiac nurses about cardiopulmonary resuscitation guidelines, (2) To identify the relationship between the knowledge level and selected variables. **Methods:** Fifty cardiac nurses were purposely selected from cardiology medical and surgical units of Sree Chitra Tirunal Institute for Medical Sciences And Technology, Trivandrum. Convenient sampling technique was used for selecting the sample. Total period of study was from August 2011 to October 2011. A self-prepared multiple-choice questionnaire was used for data collection. **Results:** Studies showed that cardiac nurses knowledge on cardio pulmonary resuscitation is above average (10.56/14). There was no statistically significant difference in mean knowledge score and age, years of ICU experience and ACLS Training programme attendance. **Conclusion:** Based on the findings of the study Cardiac nurses have average knowledge about cardio pulmonary resuscitation guidelines.

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LIST OF ABBREVIATIONS

CMICU	-	Cardiac Medical Intensive Care Unit
CSICU	-	Cardiac Surgical Intensive Care Unit
SCTIMST	-	Sree Chitra Tirunal Institute for Medical Sciences and Technology
ED	-	Emergency Department
CPR	-	Cardio pulmonary Resuscitation
ACLS	-	Advanced Cardiac Life Support
BLS	-	Basic Life Support

Chapter - 1

INTRODUCTION

1.1 Introduction

Cardiopulmonary resuscitation (CPR) is the foundational technique for the emergency treatment of cardiac arrest (CA). The standardized training of CPR has been emphasized more than ever. Common people in developed countries and regions have received popular education of CPR program of Advanced cardiac life support (ACLS) training which was launched jointly by Universal Medical Assistance International Center, Ministry of Health, P. R. China and American Heart Association in 2004. Nurses of health services who have received professional education and training should be able to practice CPR accurately and offer advanced cardiac life support to the patient who suffered an attack of cardiac arrest. This is considered as the basic requirement and qualification of licensed nurses. In the wider community it is an expectation that competence in cardiopulmonary resuscitation (CPR) and Advanced Cardiac Life Support (ACLS) is at a high standard in all hospital medical and nursing staff (Buck-Barrett and Squire 2004; Perkins et al 1999). While CPR/ACLS competency is considered a fundamental skill for health care workers, the evidence suggests that retention of CPR/ACLS knowledge and skills is generally poor (Brown et al 2006; Buck-Barret and Squire 2004). Studies have also identified differences in the quality of ACLS /CPR performed by various healthcare providers (Wik et al 2005; Nyman and Sihvonen 2000). Often chest compression is performed inadequately with slow rates of compression and inadequate depth of compression (Abella et al 2005). De Regge et al (2008) found that after a relatively short time following training, nurse's ACLS/CPR skills were poor. Previous studies of CPR/ACLS knowledge and skills have focused on nurses and other mainstream health professionals (Dwyer, Mossel-Williams and Mummery 2005; Monsieurs et al 2005; Buck-Barret and

Squire 2004; Chamberlain and Hazinski 2001; Jordan and Bradley 2000; Perkins et al 1999).

1.2 Background

Successful resuscitation following cardiac arrest requires an integrated set of co-ordinated actions the link include the following;

1. Immediate recognition of cardiac arrest and activation of the emergency response team
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillations
4. Effective advanced life support
5. Integrated post cardiac arrest care.

CPR traditionally has integrated chest compressions and rescue breathing with the goal of optimizing circulations and oxygenation. Rescuer and victim characteristics may influence the optimal application of the components of CPR. Everyone can be a life saving rescuer for a cardiac arrest victim. CPR skills and their applications depends on the rescuer's training, experience and confidence . Chest compressions are the foundations of CPR . All rescuer's regardless of training should provide chest compressions to all cardiac arrest victims .Because of their importance, chest compressions should be the initial CPR actions for all victims regardless of age .Rescuers who are able should add ventilations to chest compressions. Highly trained rescuers working together should co ordinate their care and perform chest compressions as well as ventilations in a team based approach. Integrating the critical components of CPR

The universal Adult advanced cardiac life support (ACLS) algorithm is a conceptual frame work for all levels of rescuer can and should perform .when encountering a victim has experienced a cardiac arrest, based on

unresponsiveness and lack of normal breathing .After recognition, the rescuer should immediately activate the emergency response system ,get an AED/defibrillator ,if available and start CPR with chest compressions. If an AED is not close by, the rescuer should proceed directly to CPR .If other rescuer are present, the first rescuer should direct them to activate the emergency response system and get the AED/defibrillator. The first rescuer should start CPR immediately .When the AED /defibrillator arrives apply the pads, if possible, with out interrupting chest compression and turn the AED “ON”. The AED will analyze the rhythm and direct the rescuer either to provide a shock or to continue CPR without interruptions until more experienced rescuer assume care.

Recognition And Activation of Emergency Response:

Pulse detection alone is often unreliable, even when performed by trained rescuer, and it may require additional times. Consequently rescuers should start CPR immediately if the adult victim is unresponsive and not breathing or not breathing normally.

Chest compressions:

The prompt initiation of effective chest compressions is a fundamental aspect of cardiac arrest reususcitation. CPR improves the victim chance of survival by providing heart and brain circulation .Rescuer should perform chest compression for all victim in cardiac arrest ,regardless of rescuer skill level ,victim characteristics, or available resources .Rescuer should focus on delivering high quality CPR.

- Providing chest compression of adequate rate (atleast100/min)
- Providing chest compression of adequate depth
- Adults :a compressions depth of atleast 2 inches (5cm)
- Infant and children :a depth of atleast one third the anterior –posterior (AP) diameter of chest or about 1 1/2 inches (4cm)in infants and about 2 inches in children .
- Allowing complete chest recoil after each compression

- Minimizing interruption in compression
- Avoid excessive ventilation
- If multiple rescuer are available ,they should rotate the task of compressions every 2 minutes.

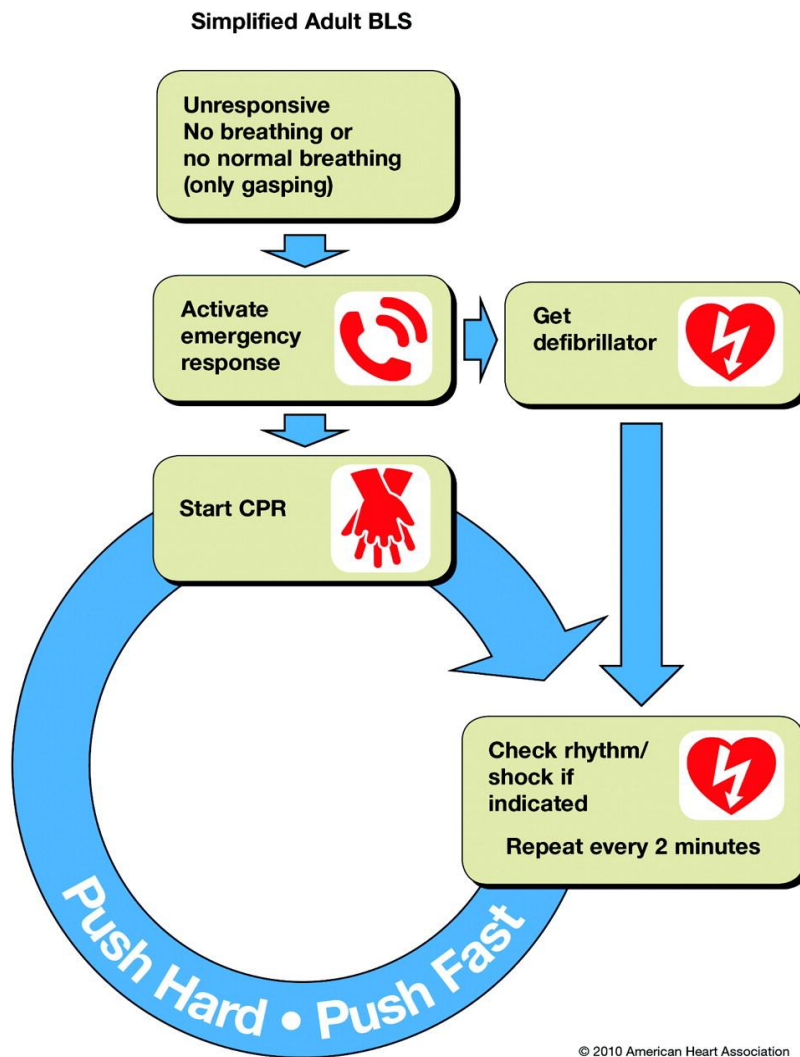
Airway And Ventilations :

Opening the airway (with a head tilt chin lift or jaw thrust) followed by rescue breath can improve oxygenation and ventilations. The maneuvers can be technically challenging and requires interruption of chest compressions , particularly for a lone rescuer who has not been trained .Thus the untrained rescuer will provide hands only (compressions only) CPR (ie compressions without ventilations) and the lone rescuer who is able should open the airway and give rescue breaths with chest compressions . Ventilations should be provided if the victim has a high likelihood of an asphyxial cause of the arrest (infants ,child ,or drowning victim).Once an advanced airway is in place ,health care providers will deliver ventilation at a regular rate breaths 6 to 8 seconds and chest compression can be delivered without interruptions.

Defibrillation

The victims chance of survival decreases with an increasing interval between the arrest and defibrillation .Thus early defibrillation remains the cornerstone for ventricular fibrillation and pulseless ventricular tachycardia .Hospital strategies should aggressively work to reduce the interval between arrest and defibrillation .one of the determinants of successful defibrillation is the effectiveness of chest compressions. Defibrillation outcome is improved if interruption in chest compression are kept as minimum.

Simplified Adult BLS



AMERICAN HEART ASSOCIATION 2010 BLS GUIDELINES

Include :

- Immediate recognition of sudden cardiac arrest based on assessing unresponsiveness and absence of normal breathing (ie, the victim is not breathing or only gasping)
- “ Look, listen and feel ” removed from BLS algorithm

- Encouraging hand only (chest compression over the middle of chest) for the untrained lay rescuer.
- Health care providers continue effective chest compressions/CPR until return of spontaneous circulation (ROSC) or termination of resuscitative efforts.
- Increased focus on methods to ensure that high quality CPR (compressions of adequate rate and depths ,allowing full chest recoil between compressions, minimizing interruption in chest compression and avoiding excessive ventilation) is performed.
- Continue de-emphasis on pulse check for health care providers.
- Recommendation of a simultaneous choreographed approach for chest compressions. Airway management, rescue breathing rhythm detection and shock by an integrated team of highly trained rescuers in appropriate settings.
- Immediate recognition of cardiac arrest and activation of emergency response system.
- Early CPR that emphasis chest compressions.
- Rapid defibrillation if indicated
- Effective advanced life support
- Integrated post cardiac arrest care

1.3 Need and significance of the study

Poor knowledge and skill retention following cardiopulmonary resuscitation training for nursing and medical staff. Cardiopulmonary resuscitation training is mandatory for nursing staff and is important as nurses often discover the victims of in-hospital cardiac arrest. Many different methods of improving this retention have been devised and evaluated. However, the content and style of this training lack standardization.

Cardiac nursing is a nursing specialty that work with patients who suffer various conditions of cardiovascular system , such as Unstable angina ,Cardiomyopathy ,Coronary artery diseases ,Congestive heart failure ,Myocardial infraction ,Cardiac dysarrhythmias and Congenital cardiac diseases . Cardiac nurses must assess and care for patients with heart problems that range in severity from arrhythmias to Heart transplant .Nurses must be able to immediately assist in treating or initially diagnose a sudden life threatening emergency. Cardiac nurses monitor patient for any signs of a change in condition, administer medication help with basic personal care need and work with the cardiologist to develop a plan of action for patient care. Cardiac Nurses must acquire specialized skills .including ECG Monitoring, Defibrillation, emergency medication, CPR Techniques.

Cardiac nurses are responsible for identifying emergency situations and to initiate methods for treating emergency situation .Each nurse should aware of emergency situation ,medication, methods of CPR ,rate ,depth of compressions ,ventilation and defibrillation.

The investigator experience in cardiac medical Intensive care unit in Sree Chitra Tirunal Institute for Medical Sciences and Technology, showed that as nurses often discover the victims of in-hospital cardiac arrest, the content and knowledge of the CPR method lack standardization. This institution had been providing ACLS training programme for staffs and students every year, maximum of 50 members have been trained every year . Hence the investigator planned to conduct a study to assess the knowledge of nursing staff on CPR techniques .

1.4 Statement of the problem

“ A study to assess the knowledge of Cardiac nurses about Cardio Pulmonary Resuscitation guidelines “

1.5 Objectives

The objective of this study are :-

- (1) ” To assess the knowledge level of cardiac nurses about cardiopulmonary resuscitation guidelines”
- (2) To identify the relationship between the knowledge level with selected variables.

1.6 Operational definitions

Knowledge :-

A state of awareness or understanding with conscious mind. In this study the investigator assesses the knowledge on cardio pulmonary resuscitation guidelines among cardiac nurses using a self prepared validated knowledge test.

Cardiac nurses :-

It means permanent and temporary and student nurses working in cardiac medical and surgical intensive care units.

Cardio pulmonary resuscitation; -

2010 AHA Guidelines are guidelines of CPR consisting of external cardiac massage and artificial respiration; the first treatment for a person who has collapsed and has no pulse and has stopped breathing; attempts to restore circulation of the blood and prevent death or brain damage due to lack of oxygen.

Critical care:-

The specialized care of patients whose conditions are life-threatening and who require comprehensive care and constant monitoring, usually in intensive care units. Also known as intensive care.

1.7 Methodology

This is a descriptive survey of nursing staff . The investigator first assess the knowledge about cardio pulmonary resuscitation guidelines among cardiac nurses with a self prepared questionnaire .The total duration of assessment is 10 minutes . Fifty nursing staff will be selected for the study .The duration of the study is August- October.

1.8 Delimitation

This study is limited to nursing staff working in cardiac surgical and medical unit in Sree Chitra Tirunal Institute of Medical science and Technology, Trivandrum.

1.9 Organisation of the report

The report is divided into five chapters. The first chapter is the introduction. In this chapter the background of the study is outlined, the subject assessing the nurse's knowledge about cardio pulmonary resuscitation guidelines. The need and significance of research problem stressed, and problem and objective are stated. An attempt is made to operationally define the terms so as to clarify a brief discussion on methodology adopted for the study .The delimitations is specified.

Chapter - II

REVIEW OF LITERATURE

2.1 Introduction

Review of literature is the key step in the research process, which helps to lay a foundation for the study. The literature review provides a background for understanding current knowledge on a topic and illuminate the significance of the study. A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic.

The literature review relevant for this study is presented on the following sections .

- 2.2 Studies on knowledge related to 2005/2010 American Heart Association guidelines on advanced cardiac life support
- 2.3 Studies on practice related to American Heart Association guidelines on advanced cardiac life support
- 2.2 Interventional studies on knowledge related to 2005/2010 American Heart Association guidelines on advanced cardiac life support

Roppolo P. L. et. al (2007), conducted a study about effectiveness and retention of training for CPR and AED. It was a abbreviated (30 min) course group (cardiopulmonary resuscitation, choking, and automated external defibrillator use). Immediately after training, and at 6 months, participants were provided identical individual testing scenarios. Computerized recordings of compression rate/depth, ventilation rates, and related pauses were obtained and subsequently rated by blinded reviewers. The result of the study is like that Performance following 30-min training was either equivalent or superior ($p < 0.007$) to the multi-hour Heart saver-Automated External Defibrillator training in all measurements, both immediately and 6 months after training.

Although retention of certain skills deteriorated over the 6 months among a significant number of participants from both groups, 84% of the 30-min training group still was judged, overall, to perform cardiopulmonary resuscitation adequately. Moreover, 93% still were performing chest compressions adequately and 93% continued to apply the automated. External defibrillator and deliver shocks correctly. The study concluded that Using innovative learning techniques, 30-min cardiopulmonary resuscitation and automated external defibrillator training is as effective as traditional multi-hour courses, even after 6 months. Thirty-minute courses should decrease labor intensity, demands on resources, and time commitments for cardiopulmonary resuscitation courses, thus facilitating more widespread and frequent retraining

Jensen L.M et.al (2009),conducted a study about significance of clinical experience on learning outcome from resuscitation It was a randomized controlled study with an aim of determining whether half a year of clinical experience before participation in an Advanced Life Support (ALS) course increases the immediate learning outcome and retention of learning. The material used in this study was a prospective single blinded randomized controlled study of the learning outcome from a standard ALS course on a volunteer sample of the entire cohort of newly graduated doctors from Copenhagen University. The outcome measurement was ALS-competence assessed using a validated composite test including assessment of skills and knowledge. The intervention used was half a year of clinical work before an ALS course. The intervention group received the course after a half-year of clinical experience. The control group participated in an ALS course immediately following graduation. There was no difference between the intervention and control groups with regard to the immediate learning outcome. The intervention group had significantly higher retention of learning compared to the control group, intervention group mean 82% (CI 80–83), control group mean 78% (CI 76–80), $P = 0.002$. The magnitude of this difference was medium (effect size = 0.57).the study concluded that Half a year of clinical experience, before participation in an ALS course had a small

but statistically significant impact on the retention of learning, but not on the immediate learning outcome.

Christina et.al (2010) conducted a study to assess and compare the theoretical knowledge on BLS and ALS in nurses and doctors. A total of 82 nurses and 134 doctors agreed to respond to a questionnaire containing demographic questions, resuscitation experience questions and 15 theoretical knowledge questions. Our study demonstrated that nurses and doctors working in Greece have knowledge gaps in current BLS and ALS guidelines. However, resuscitation training had a positive effect on theoretical CPR knowledge. Furthermore, nurses and doctors who worked in high-risk areas for cardiac arrest, scored significantly higher than those who worked in low-risk areas. Those who had encountered more than 5 cardiac arrests the previous year, scored significantly better. Finally the percentage of nurses who had attended the ALS course was quite low thus ALS training should be incorporated into the nursing.

Pediatr et.al (2007), The study findings includes the greatest guideline changes are in the area of basic life support. The new guidelines emphasize the new chest compression/ventilation ratio for trained health professionals, which is now 15:2 for all children except neonates. Also emphasized is the need for harder and faster chest compressions, and the need to avoid hyperventilation during and after cardio respiratory arrest. The use of high-dose epinephrine has been removed, as have some other previous recommendations. The researches concluded that the most recent AHA guidelines for pediatric resuscitation are focused primarily on basic life support care. They are based on the best available scientific evidence, although further research is required to validate these changes and provide new evidence for future guidelines

B .Spencer et.al (2011) conducted a study about The 2010 American heart association guidelines for cardiopulmonary resuscitation and emergency cardiac care: an overview of the changes to pediatric basic and advanced life support.

This article presents the 2010 AHA major guideline changes to pediatric basic life support (BLS) and pediatric advanced life support (PALS) and the rationale for the changes. The following topics are covered in this article: (1) current understanding of cardiac arrest in the pediatric population, (2) major changes in pediatric BLS, and (3) major changes in PALS.

Nagashima et.al (2003) conducted a survey on knowledge of and experience in cardiopulmonary resuscitation (CPR) and on knowledge of the Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care (ECC) established in 2000. Three hundred and four nurses at Asahikawa Medical College Hospital were asked to fill in questionnaires. This was the method of study. The results show that more than 80% of the nurses are much interested in CPR. Most of the nurses had received education and training in CPR as students or after graduation. However, cases of cardiopulmonary arrest and CPR were experienced by only about 40% of the nurses. Most of the nurses had never heard of the Guidelines for CPR and ECC in 2000. The researchers concluded that there is a need to provide more education (on CPR) to nursing staff.

2.3 Studies on practice related to 2005/2010 American Heart Association guidelines on advanced cardiac life support

Rodgers et.al (2010), conducted a study whether there was a correlation between written and practical evaluations in an ACLS course. The method of the study is by 34 senior nursing students from four nursing programs participated in two separate ACLS classes, completing both the written and practical evaluations. Immediately following the courses, all participants served as team leader for a video recorded simulated cardiac arrest event. A panel of expert ACLS instructors who did not participate as instructors in the courses reviewed each video and independently scored team leaders' performances. The result of the study was Spearman's rho correlation coefficient between the written test scores and practical skills performance was 0.194 (2tailed significance =

0.272).the study reached a conclusion that The ACLS written evaluations was not a predictor of participant skills in managing assimilated cardiac arrest event immediately following an ACLS course. Both work in concert to define participant knowledge and neither should be used exclusively to determine participant competence.

Graham, Crouch (1993) conducted a study about Nurses' skills in basic life support. The study includes Cardiopulmonary resuscitation (CPR) skills are fundamental to the function of health professionals, but studies have shown them to be inadequate and outdated. This week, Nursing Standard launches a three-part weekly series on resuscitation. Parts two and three will address the associated ethical issues and measures of outcomes and accountability. The series begins with a survey in a district general hospital which aimed to establish nurses' levels of awareness on the current recommendations for CPR laid down by the Resuscitation Council of the UK. The results show a poor knowledge level and recommendations are offered.

King et.al (2011) conducted a study to compare the effectiveness of static simulation to high-fidelity simulation when teaching advanced cardiac life support guidelines. Using a quasi-experimental design, 49 BSN students were randomly assigned to 2 groups of either static or high fidelity simulation. There were no significant differences between the static and high fidelity simulation groups on the written examination. The high-fidelity simulation group outperformed the static simulation group on mega code performance.

Stiell et.al (2004) conducted a Study to test the incremental effect on the rate of survival after out-of-hospital cardiac arrest of adding a program of advanced life support to a program of rapid defibrillation .The method of the study contains controlled clinical trial was conducted in 17 cities before and after advanced-life-support programs were instituted and enrolled 5638 patients who had had cardiac arrest outside the hospital. Of those patients, 1391 were enrolled

during the rapid-defibrillation phase and 4247 during the subsequent advanced-life-support phase. Paramedics were trained in standard advanced life support, which includes end tracheal intubations and the administration of intravenous drugs. The result of study showed that From the rapid-defibrillation phase to the advanced-life-support phase, the rate of admission to a hospital increased significantly (10.9 percent vs. 14.6 percent, $P < 0.001$), but the rate of survival to hospital discharge did not (5.0 percent vs. 5.1 percent, $P = 0.83$). The multivariate odds ratio for survival after advanced life support was 1.1 (95 percent confidence interval, 0.8 to 1.5); after an arrest witnessed by a bystander, 4.4 (95 percent confidence interval, 3.1 to 6.4); after cardiopulmonary resuscitation administered by a bystander, 3.7 (95 percent confidence interval, 2.5 to 5.4); and after rapid defibrillation, 3.4 (95 percent confidence interval, 1.4 to 8.4). There was no improvement in the rate of survival with the use of advanced life support in any subgroup. The researchers reached a conclusion that the addition of advanced-life-support interventions did not improve the rate of survival after out-of-hospital cardiac arrest in a previously optimized emergency-medical-services system of rapid defibrillation. In order to save lives, health care planners should make cardiopulmonary resuscitation by citizens and rapid-defibrillation responses a priority for the resources of emergency-medical-services systems

2.3 Summary

Insufficient knowledge is a factor for ineffective CPR techniques. Most of them will affect patient's life during emergency overall theoretical knowledge increased after systematic standardized training in CPR. The increase was more pronounced for those without previous training and for those staff categories with the least medical education. Most of the studies show that nurses have not much knowledge about cardio pulmonary resuscitation. Studies recommended educational programme for improving nurse's knowledge.

Chapter - 3

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is the systemic way to solve the research problem. This chapter provides a brief description of the method adopted by the investigator to conduct this study. This chapter includes research approach ,research design ,setting of the study and sampling technique, development and description of tool, pilot study ,data collection procedure and plan of analysis .

3.2 Research approach

A descriptive survey approach is used.

The objective of the study are:

1. To assess the knowledge level of cardiac nurses about cardiopulmonary resuscitation guidelines .
2. To identify the relationship between the knowledge level with selected variables.
3. Research design

To accomplish the objectives of the study a survey approach is used for data collection and analysis of the data. In order to assess the knowledge level of cardiac nurses about cardiopulmonary resuscitation data were collected from nurses by self-prepared questionnaire including 14 questions.

3.4 Setting of the study

The study was conducted in Sree Chitra Tirunal Institute for Medical Science and Technology, Trivandrum; this institute had one cardiac surgical and

medical intensive care units and medical and surgical wards. Here the institute offers CPR training programme for the staff and students every year maximum of fifty members per year. A written exam and practical exam should be conducted by the nursing department.

3.5 Study population

The target population of the study was staff nurses in cardiology medical and surgical intensive care unit.

3.6 Sample and sampling techniques

The sample was selected from the nursing staff working in Sree Chitra Tirunal Institute for Medical Science and Technology; Trivandrum. A purposive sampling technique was used to collect the samples. The samples were selected from the nursing staff working in Cardiology Medical Intensive Care Unit, Cardiology Medical Ward, Cath Lab, Cardiac surgery Intensive Care Unit. The duration of study period was from August 2011 to October 2011. The size of the sample was fifty.

3.7 Inclusion Criteria

Nursing staff working in Cardiology Medical Intensive Care Unit, Cath Lab ,Cardiology medical ward ,Cardiac Surgical Intensive Care Unit in Sree Chitra Tirunal Institute for Medical Science and Technology; Trivandrum.

3.8 Exclusion criteria

Nursing staff working in departments other than cardiology medical and surgical units.

3.9 Development of data collection tool

The tool present in the study consist of the following parts.

PART –1

The part 1 socio demographic data ,which consist of age, sex, educational qualification, Total years if professional experience, Total year of ICU experience, ACLS Training programme attended or not.

PART -2

It consist of fourteen multiple choice questions about CPR guidelines .It covers nurses knowledge on CPR ,about the depth ,time ,sites for checking pulse, ratio for compression to ventilation .The questions were multiple choice questions .Each correct answer carries one mark .Actual duration for completing the questionnaire was ten minutes. The maximum obtained score is 14.

3.10 Pilot study

A pilot study was conducted to find out the feasibility and practicability of the tool and methodology. After obtaining permission from the authorities pilot study was conducted among nursing students of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. Six students were taken for pilot study .The purpose of study was to test the feasibility of original tool.

3.11 Data collection procedure

Since there was no problem faced during pilot study, the same method of data collection was used for the final study. The final study was done during the month of October 2011.for a period of 30 days.

The research tool was given to the cardiac nurses and then 10 minutes was given to answer the questions. The samples were very cooperative and no problem occurred during data collection.

3.12 Plan for analysis

After data collection, data will be organized, tabulated, summarized and analyzed and presented in the forms of tables, bar diagrams and pie diagrams.

3.13 Summary

This chapter includes the research approach, research designs, and setting of study, study population, sample size, sampling techniques, and selection criteria. Description of the tool, pilot study, data gathering process, plan for data analysis.

Chapter - 4

ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the analysis and interpretation of data collected from fifty cardiac nurses working in cardiology medical and surgical unit at Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. Fifty nurses were selected for assessing the knowledge about Cardio pulmonary Resuscitation guidelines. Analysis is a process of organizing and synthesizing data in such a way that research questions can be answered.

Interpretation is the process of making sense of the result and examining the implication of finding within the broader content.

The finding of the study were analyzed and arranged under the following sections.

4.1 Distribution of sample according to demographic data.

4.2 Distribution of sample according to knowledge score .

4.3 Comparison of mean ,standard deviation and p value of nurses knowledge about CPR guidelines and selected variables.

4.1 Distribution of sample according to demographic data

Distribution of data according to age :-

The age of the sample ranged from 23 to 58 with a mean age of 34.28, standard deviation of 10.72, median age of 31 and mode of 24.

AGE	FREQUENCY	PERCENTAGE
<30	22	44%
30--39	13	26%
40--49	6	12%
50--60	9	18%
TOTAL	50	100%

Age categories were based on the age distribution of samples so as to have a minimum number under each class. The data given in table 4.1 shows that majority of samples belonged to the younger age category(<30).

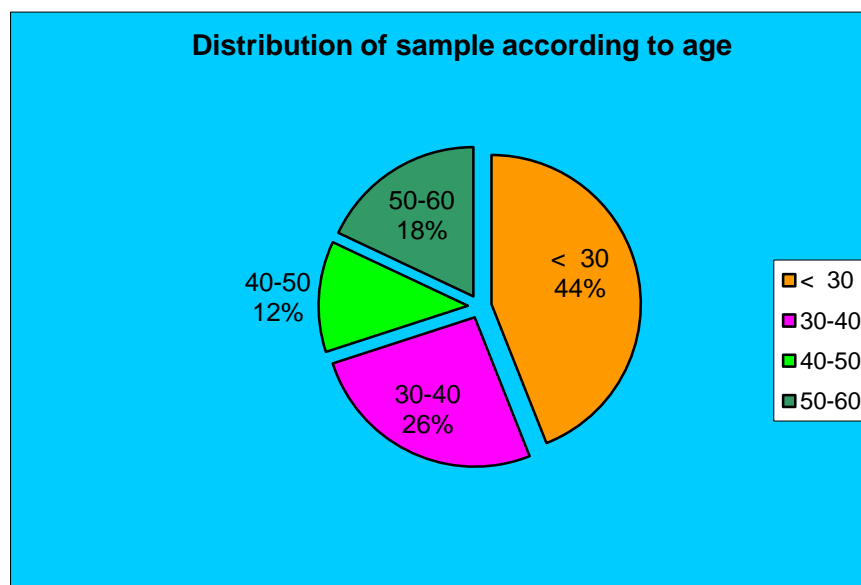


Fig 4.1 The diagram showing the distribution of samples according to age category.

Distribution of samples according to sex:-

Table 4.2 shows the distribution of sample according to sex.there were (88%) females in the sample.

Table 4.2 . Distribution of sample according to sex category

SEX	FREQUENCY	PERCENTAGE
FEMALE	44	88%
MALE	6	12%
TOTAL	50	100%

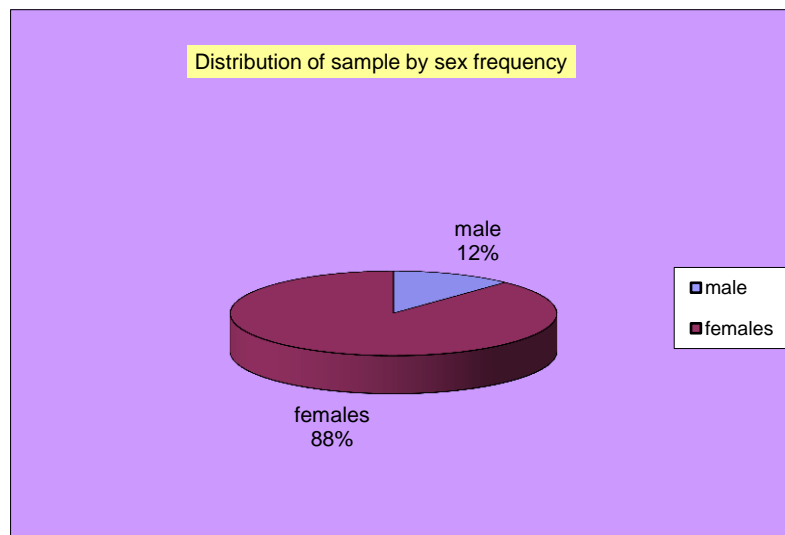


Fig 4.2 The pie diagram shows distribution of sample according to sex category.

Distribution of sample according to educational qualification

Data collected from cardiac nurses working in cardiology medical and surgical unit shows that 46% of them are GNM, 42% of them are Bsc nursing, 2% of them are Msc nursing and 10% of them had CVT Specialty nursing education..

Table 4.3 Distribution of sample according to educational qualifications

EDUCATIONAL QUALIFICATIONS	FREQUENCY	PERCENTAGE
GNM	23	46%
BSc NURSING	21	42%
MSc NURSING	1	2%
Specialty Nursing	5	10%
TOTAL	50	100%

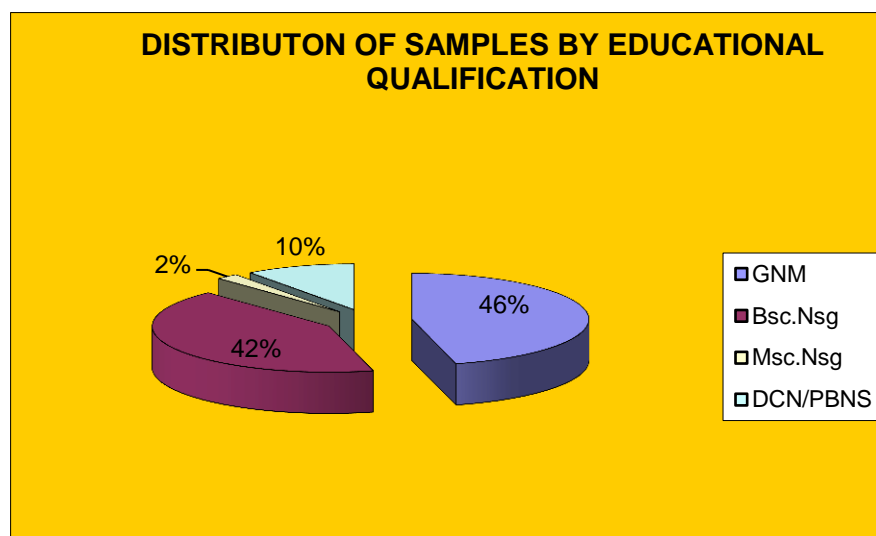


Fig 4.3 The pie diagram shows the distribution of sample according to Educational qualification.

Distribution of sample according to year of professional experience:

Data collected from cardiac nurses with their year of experience, which ranged from <5 -- >35 years.

Table 4.4 Distribution of sample according to year of professional experience

EXPERIENCE	FREQUENCY	PERCENTAGE
<5	22	44%
5--14	13	26%
15--24	7	14%
25--34	6	12%
>35	2	4%
TOTAL	50	100%

Data given in Table 4.4 shows that 22 of them had <5 years of professional experience ,13 of them had 5—14 years of experience ,7 of them had 15—24 years of professional experience,6 of them had 25-34 years of professional experience ,2 of them had > 35 years of experience.

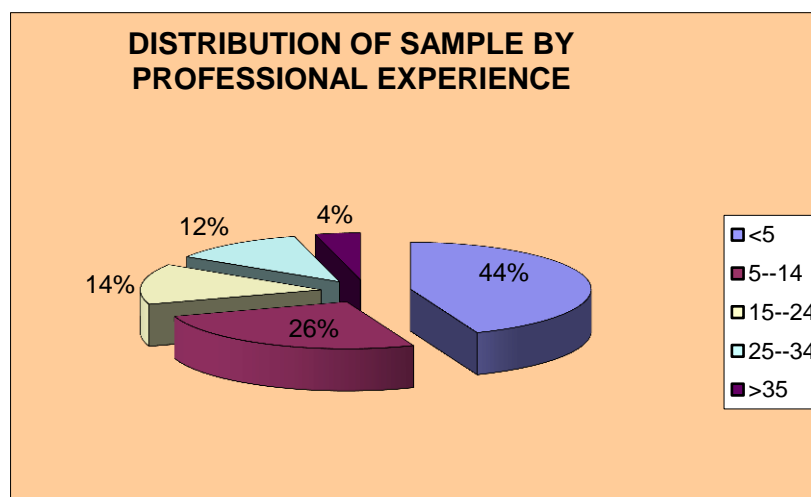


Fig 4.4. The pie diagram showing the distribution of sample according to years of professional experience

Distribution of sample according to years of ICU experience:-

Data collected from cardiac nurses with year of ICU experience ,which ranged from 0—24years.

Table 4.5 Distribution of sample according to years of ICU experience

ICU EXPERIENCE	FREQUENCY	PERCENTAGE
0--5	31	62%
5--14	14	28%
15--24	5	10%
TOTAL	50	100%

Data given in Table 4.5 shows that 31 of them had 0—5 years of ICU experience,14 of them had 5—14 years of ICU experience ,5 of them had 15—24 years of ICU experience.

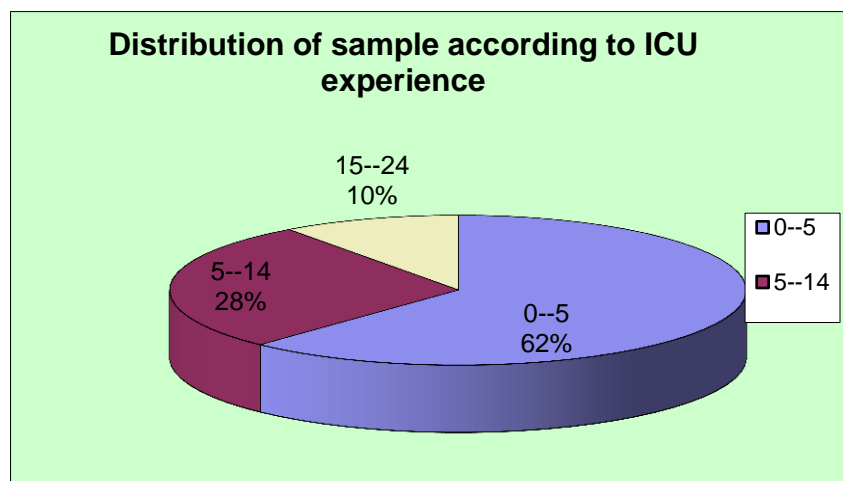


Fig 4.5 The pie diagram showing the distribution of sample according to years of ICU experience

Distribution of sample according to ACLS Training.

Data shows that 52% have attended ACLS training program and 48% of them have not attended the programme.

Table 4.6 Distribution of sample according to the AC LS training program

ACLS TRAINING PROGRAMME	FREQUENCY	PERCENTAGE
ATTENDED	26	52%
NOT ATTENDED	24	48%
TOTAL	50	100%

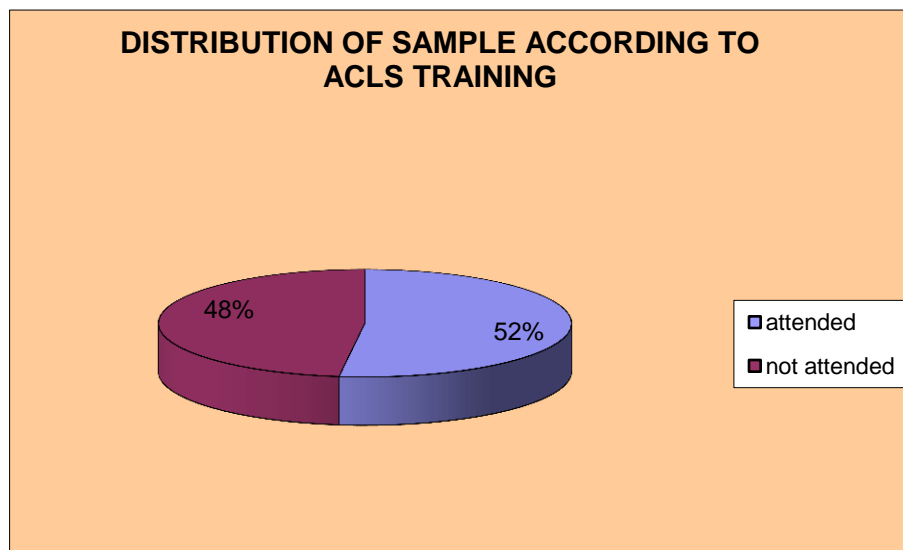


Fig 4.6 The pie diagram showing distribution of sample according to ACLS training programme.

4.2 Distribution of sample according to percentage of knowledge score about CPR Guidelines among cardiac nurses.

4.3

Table 4.7 Distribution of sample according to percentage of knowledge score on CPR Guidelines.

KNOWLEDGE SCORE	FREQUENCY	PERCENTAGE
<8	7	14%
9--11	28	56%
12--14	15	30%
TOTAL	50	100%

There were fourteen questions in the knowledge test related to CPR Guidelines with a maximum score of fourteen. Total knowledge score obtained ranged from 5—14 with a mean of 10.56, standard deviation of 2.27, median of 11 and mode of 11, this shows the nurses have above average knowledge about CPR Guidelines.

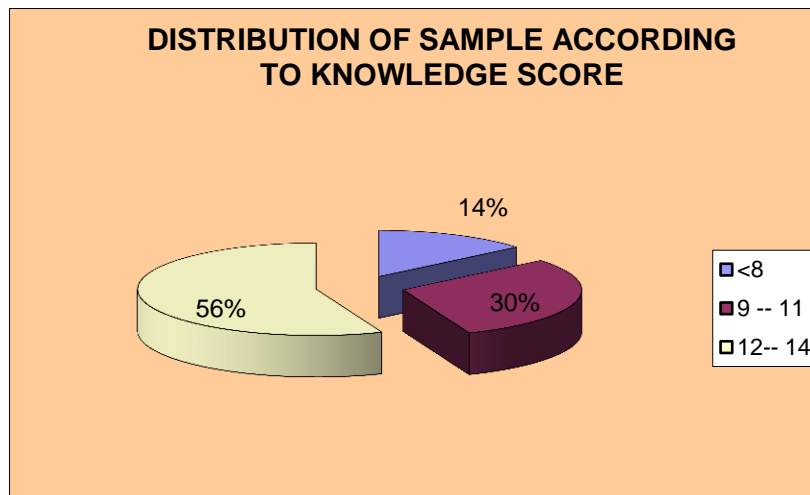


Fig 4.7 The pie diagram shows the knowledge score of cardiac nurses about CPR Guidelines.

Percentage of score in the area of knowledge about CPR Guidelines.

The data given in table 4.8 shows the percentage of knowledge obtained in each item of knowledge test on CPR Guidelines. Result shows that the area of lesser knowledge (<50%) are ,depth of sternum depression in adult (34%) ,.The area of higher knowledge (>85%) are why not advisable for blind sweep on unconscious choking infant (96%) , preference of bag mask to ventilate (96%),when to call help for unresponsive adult (92%).

Table 4.8 Percentage of knowledge about CPR Guidelines in each item of knowledge test among cardiac nurses.

N==50

AREA OF KNOWLEDGE	FREQUENCY	PERCENTAGE
Depth of sternum depression in adult	17	34%
Depth of sternum depression in infant	38	76%
Hand placement on the chest to perform CPR in infants	37	74%
Hand placement on the chest to perform CPR in adult	40	80%
Step just before ventilate in CAB'S	26	52%
Common cardiac rhythm during cardiac arrest	39	78%
Pulse location in infant	34	68%
Why not advisable to blind finger sweep on unconscious choking infant	48	96%
Method to open airway in non trauma patient	40	80%
Time taken to check pulse	39	78%
Preference of bag mask for ventilation	48	96%
Ratio of compression to ventilation in one rescuer on a child	41	82%
When to call help for an unresponsive adult	46	92%
Rate of chest compression for infants / min	35	70%

4.3 Comparison of mean standard deviation and p value of knowledge score and selected variables.

Table 4.9 Mean, Standard Deviation and p- value of knowledge score by age group

AGE IN YEARS	MEAN	STANDARD DEVIATION	P VALUE
Young age <31	11.04	2.18	0.15
Older age >31	10.12	2.30	

The median was used to divide the group in to two –young <31 years and older age >31years.

The knowledge score of younger age group ranged from 5 to 14 with a mean of 11.04 ± 2.18 and that of older age group ranged from 5 to 14 with a mean of 10.12 ± 2.30 . An unpaired ‘t’ test showed that there was no significant difference in the mean knowledge ($p=0.15$) of both groups.

According to years of ICU Experience:-

Table 4.10 Mean knowledge score by years of ICU experience .

Years of ICU experience	MEAN	STANDARD DEVIATION	P VALUE
Lesser experience < 2.5yrs	10.6	2.40	0.90
More experience >2.5yrs	10.52	2.18	

The knowledge score of less experience group ranged from 5—14 with mean of 10.6 ± 2.40 and that of higher experience ranged from 5—14 with a mean of 10.52 ± 2.18 . There is no significant difference in the mean knowledge score of both groups (P=0.4).

According to the ACLS Training programme attended

Table 4.11 Mean knowledge score according to the ACLS training program attended

ACLS TRAINING PROGRAMME	MEAN	STANDARD DEVIATION	P VALUE
ATTENDED	10.13	2.53	0.41
NOT ATTENDED	10.83	1.97	

In ACLS attended group the knowledge score ranged from 5—14 with a mean of 10.13 ± 2.53 .In the case of ACLS not attended group the knowledge score ranged from 8—14 with a mean of 10.83 ± 1.97 . There is no significant difference in the mean knowledge score of both groups (P = 0,41).

4.4 Summary

This chapter contains distribution of samples according to the demographic data and the knowledge score, analysis and interpretation of data collected.

Chapter - 5

SUMMARY, CONCLUSION, LIMITATION, DISCUSSION AND RECOMMENDATION

This chapter gives a brief account of the present study including conclusion drawn from the findings and possible application of the results. Recommendation for further research and suggestion for improving the present study also presented.

Summary :-

This study was undertaken to assess the knowledge about CPR Guidelines among cardiac nurses working in cardiology medical and surgical unit. in Sree Chitra Tirunal Institute for Medical Sciences And Technology, Trivandrum.

The specific objectives of this study :-

1. To assess the knowledge level of cardiac nurses about cardiopulmonary resuscitation guidelines
2. To identify the relationship between the knowledge level with selected variables.

Need for study was that many studies done in abroad revealed lack of knowledge, among critical care nurses about CPR Guidelines. Cardiac nurses are responsible for life saving attempts in emergency situation .The investigators experience in Cardiac Medical Intensive Care Unit in Sree Chitra Tirunal Institute for Medical Sciences And Technology, showed that there is no difference in the mean knowledge score of both groups about CPR Guidelines .This study was on attempt to find out whether the nursing staff working in Sree Chitra Tirunal Institute for Medical Sciences And Technology, have adequate knowledge about cardio pulmonary resuscitation guidelines. A self-prepared

questionnaire was used for assessing the knowledge level of nursing staff. After assessment the investigator explained and cleared doubts regarding CPR Guidelines.

The study was conducted in Sree Chitra Tirunal Institute of Medical Sciences And Technology, Trivandrum, Kerala, during the period of August to October 2011. cardiac nurses were selected by purposive sampling .Total sample is fifty.

Major finding of the study

This study showed that cardiac nurses knowledge on Cardio pulmonary resuscitation is above average.(10.56/14) .How ever there was no statistically significant difference between mean knowledge and age , year of ICU experience or ACLS Training.

Discussion

In this study 14-item survey includes specific questions about cardio pulmonary resuscitation guidelines .A total fifty cardiac nursing staff responded to the survey. The data given in Table 4. 8 shows the nurses had above average knowledge on cardio pulmonary resuscitation guidelines. Study shows that cardiac nurses knowledge on cardio pulmonary resuscitation guidelines are about 75.43% that is (10.56/14). While CPR/ACLS competency is considered a fundamental skill for health care workers, the evidence suggests that retention of CPR/ACLS knowledge and skills is generally poor (Brown et al 2006; Buck-Barret and Squire 2004).

The investigator concluded that nurses have sufficient knowledge about cardio pulmonary resuscitation guidelines and could benefit from additional education. Standardized training in CPR is expected to be associated with improvement in many aspects of resuscitation.

Limitation

The study was limited to cardiac nurses working in cardiology medical and surgical unit in Sree Chitra Tirunal Institute for medical Sciences And Technology, Trivandrum.

Conclusion

Based on the findings of the study following conclusion were drawn. Nurses have above average knowledge about cardio pulmonary resuscitation guidelines. Younger age group had higher mean knowledge than that of older age group. However the study shows that there is no statistically significant difference between the mean knowledge score and age ,years of ICU experience or ACLS training.

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