**Journal Of Medical Science And Clinical Research**
IGM Publication
An Official Publication Of IGM  Publication

# Cardiopulmonary Resuscitation Knowledge and Skills of Newly Graduated Nurses in Selected College of Nursing, AP, India

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**Abstract**

*The American Heart Association (AHA) recommends that healthcare providers and lay people should learn to perform high-quality cardiopulmonary resuscitation (CPR) for improving survival among sudden cardiac arrest (SCA) victims. Consequently, people who are professionally trained to provide life-saving measures should have the basic knowledge, skills, and confidence to do so. To assess the knowledge & skill scores of CPR technique among nursing graduates before and after intervention. to find out the association between knowledge & practice scores with selected demographic variables. The design selected for the present study was quasi-experimental design and approach in which one group pre and post design. Purposive sampling technique was used to select 60 newly graduated nurses as a subject study. Comparison of overall mean, SD and mean percentage of pre and post test knowledge scores shows that over all pre test mean score was 18.6+_4.14 which is 41.33%whereas in post test the mean score was 35.8+- 3.5 which is 79.5% revealing the difference of 38.17% shows the effectiveness of STP. Study reports revealed that Cardiopulmonary Resuscitation knowledge among nurses were important. There was no significant association between the level of knowledge and their selected demographic variables like age, gender, year of graduation, unit assigned. Mostly all the participants had less than two years of experience and very minimal exposure to handle sudden cardiac arrest independently. The study concluded that the structured teaching was found really useful to them, which will help them to take prompt decisions, perform cardiopulmonary resuscitation and save many lives and help them decide and perform independently.*

## Introduction

Cardiopulmonary resuscitation (CPR) is a critical component of basic life support (BLS) as the first-line response to cardiac arrest before defibrillation and advanced life support become available. Whilst CPR has become well established in the healthcare systems of developed countries, it remains a challenging procedure in some developing countries.

In early days, CPR training was meant only for health care professionals. Later, it was noticed that many of these events occurred outside the hospital setting and that early CPR need to be performed by the bystanders who witnessed the event. Hence, CPR is said to be a skill for all people. Quality of life is also found to be better for victims who immediately receive bystander CPR even in the absence of Health care workers.

Studies have shown that immediate CPR after collapse due to ventricular fibrillation doubles or even triples the chances of survival.

As nurses are usually the first professional persons to provide BLS during emergency situations, they should possess the knowledge and skills to be able to perform CPR effectively and thus to save lives. Because of the nature of their profession, nurses spend significant time alongside patients and are often the first to realize in-hospital SCAs. Training programs in CPR would make a significant contribution to the elimination of nurse's anxiety and an increase in their self-confidence. As a result, effectiveness in dealing with a SCA individually or as members of a team could also be improved.

At present our questionnaire study, which is compatible with the 2010 American Heart Association (AHA) Guidelines and its 2015 update for CPR and Emergency Cardiovascular is first to highlight awareness among nursing graduates in AP, INDIA.

## Significance for the Study

Cardiac arrests are more common than we think, and they can happen to anyone at any time. Nearly 400,000 out –of hospital sudden cardiac arrests occur annually, and 88 percent of cardiac arrests occur outside the hospital. Four out of five cardiac arrests happen at home. The American Heart Association trains more than 12 million people in CPR annually, to equip Americans with the skills they need to perform bystander CPR.

Healthcare professional's CPR knowledge and skills differ even in developed countries. Many studies on CPR conducted in developed countries such as the United States of America, the United Kingdom, Finland and Ireland revealed inadequate levels of CPR knowledge and skills amongst registered nurses.

## Aim of the Study

This study attempted to evaluate the level of CPR knowledge and skills among newly graduated nurses.

## Literature Review

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

Hollenberg et al stated that cardiac disease is the most common cause of mortality in western countries.

Resuscitation of patients is based on the 'chain of survival concept, including (i)early access (ii) CPR (iii) defibrillation, (iv)advanced cardiac life support and (v) post resuscitation care. Resuscitation consists of the following steps:

1. Circulation: promoting artificial circulation by external cardiac compressions
2. Airway: maintaining an open airway
3. Breathing: providing artificial ventilation by rescue breathing
4. Defibrillation: restoring the heartbeat.

Stiell et al found suboptimal compression depth in half of patients by 2005 guideline standards and almost all by 2010 standards as well as inverse association between compression depth and rate. They found a strong association between survival outcomes and increased compression depth but no clear evidence to support the 2010 recommendation of >50mm.although compression depth is an important component of CPR and should be measured routinely the most effective depth for adult is atleast 5 cm according to 2015 changes. Recommending that chest compressions be the first step for lay and professional rescuers to revive victims of sudden cardiac arrest, the association said the A-B-Cs (Airway-Breathing-

Compressions) of CPR should now be changed to C- A-B (Compressions-Airway-Breathing).

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

Shanta Chandrasekaran, Sathish Kumar, 2010, A cross-sectional study was conducted by assessing the responses to 20 selected basic questions regarding Basic Life Support, among students of nursing colleges in Tamilnadu, India to study the awareness of Basic Life Support (BLS), in nursing colleges. After excluding the incomplete response forms the data was analysed on 1,054 responders. The results were analysed using an answer key prepared with the use of the Advanced Cardiac Life Support manual. Out of 1,054 responders no one among them had complete knowledge on BLS. Only 2 out of (0.19%) had secured 80 - 89% marks, 10 out of (0.95%) had secured 70 - 79% marks, 40 of (4.08%) had secured 60 - 69% marks and 105 (9.96%) had secured 50 - 59% marks. A majority of them that is 894 (84.82%) had secured less than 50% marks. Awareness of BLS among students in nursing colleges is very poor and teaching is required.

**Statement of the Problem**

"A study to assess the effectiveness of structured teaching programme on knowledge and skills regarding cardio pulmonary resuscitation among newly graduate nurses a in selected college of nursing, Andrapradesh, India".

**Objectives**

- To assess the knowledge level regarding cardio pulmonary resuscitation among newly graduates in selected college of nursing.
- To evaluate the effectiveness of structured teaching programme on knowledge and skills regarding cardio pulmonary resuscitation among newly graduates in selected colleges.
- To find out the association between knowledge and skills regarding cardio pulmonary resuscitation among newly graduates with selected socio demographic variables.

**Operational Definition**

**Assess:** It is the organized, systematic and continuous process of collecting data from the newly nursing graduates regarding cardio pulmonary resuscitation.

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

**Structured Teaching Programme:** It refers to systematically developed Instruction designed to provide information regarding cardio pulmonary resuscitation to newly graduate nurses.

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

**Knowledge:** The sum of what is known regarding cardiopulmonary resuscitation.

Newly graduates: who are recently completed the degree (Bsc Nursing) and doing their first year internship in a selected college.

## Hypothesis

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

**H2:** There will be a significant association between the knowledge and skill with selected demographic variables of the graduates (such as assigned area, previous information regarding cardio pulmonary resuscitation).

## Assumption

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

## Limitation

The study was conducted to those who were,

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

## Research Methodology

### Research design and approach:

The design selected for the present study was quasi-experimental design and approach in which one group pre and post design without control group. A pre test, intervention and post –test, retest were utilized to determine the same registered nurses CPR Knowledge and skills.

### Setting of the study:

The study was conducted in selected college of nursing, Kareem Nagar, AP.

### Research Population:

The target population comprised 60 newly graduates from selected college of nursing. Purposive sampling technique was used. During the pre test intervention and posttest immediately.

## Development of Tools

The following tools was used for the present study-

1. Structured teaching programme regarding CPR among degree students.
2. Questionnaire to assess the knowledge regarding CPR among degree students.

**Description of the Tool:** Construction of Questionnaire

The questionnaire consists of 2 parts.

Part A:

It consists of participant's demographic characteristics such as age, gender, and year of graduation, professional status, assigned area, previous knowledge of CPR.

Part B:

It consists of knowledge items regarding CPR. This section consists of 25 items. Each item has four options with one most correct answer.

For each item, the correct answer carriers the score of 'one' and wrong answer carries the score of 'Zero'.

## Data Analysis

All of the participants were female nurses. Most of the respondents were between 22-25 year old, out of that 25 members had less than one-year experience. as many as 30 candidates (50%) had no formal training and 20(33%) had received no training after completion of their basic training. The remaining number of participants had training once only. Most of the respondents said that patients had died during or after CPR intervention.

Level of knowledge of graduates on CPR:

Pretest overall level of knowledge and skill:

52% of graduates had poor knowledge and 48% of degree graduates had average knowledge.

46% of graduates had poor skill and 54% of degree graduates had average skill.

Posttest overall knowledge and skill level:

68% of graduates had good knowledge and 32% of graduates had very good knowledge.

56% of graduates had good knowledge and 44% of graduates had very good knowledge.

Comparison of Pretest and Posttest Knowledge:

Percentage of Students scores of the new graduated nurses regarding CPR

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

Association between the Selected Demographic Variables with the Levels of Knowledge Among Newly Graduate Nurses.

Chi square was calculated to find out the association between the knowledge scores and demographic variables of the newly graduate nurses. Significant association was found between knowledge scores of newly graduate nurses regarding Cardiopulmonary Resuscitation with their demographic variables such as Source of information ($P<0.05$). No significant association was found between knowledge scores of graduate nurses regarding Cardiopulmonary Resuscitation with their demographic variables such as age, gender, and year of graduation, previous knowledge on CPR.

## Discussion

Study reports revealed that Cardiopulmonary Resuscitation knowledge among nurses were important. There was no significant association between the level of knowledge and their selected demographic variables like age, gender, year of graduation, unit assigned. Mostly all the participants had less than two years of experience and very minimal exposure to handle sudden cardiac arrest independently. Competent and knowledgeable nurses can implement effective CPR intervention to save patients' lives. This study finding emphasize the importance of increasing the CPR knowledge and skills of nurses as less than 50% of nurses scored the passing marks in pre test. Here the sample received the knowledge about CPR. So the researcher concluded that the STP gives better result.

## Scope of the study

Nursing is a service-oriented profession and it must advance and keep pace with the advancing technology, newer problems, evidence based practice and growing demands of consumer.

Nursing education:

❖ Nurse educator has to pay more attention on training of newly graduated nurses regarding cardiopulmonary resuscitation. so that they can impart appropriate knowledge and skill when emergency occurs.

❖ Students Nurses can be motivated to participate actively in awareness of community in awareness campaign.

Nursing administration:

❖ Nurse administrator has to organize educational programs in the schools and community settings.

❖ The nurse administrators have a responsibility to provide nurses with continuing education opportunities. This will enable them to update their knowledge and acquire special skills.

Nursing research:

❖ Nursing research is an essential aspect of nursing as it uplifts the profession and develops new nursing norms and body of knowledge. The research design findings can be used as avenues for further research. The study will motivate the beginners to conduct similar study in large scale and on a comparative basis it also motivates enthusiastic researcher to implement demonstration and teaching program activities and see its effectiveness.

## Conclusion

Newly graduate nurses from selected college of nursing had inadequate knowledge and skills that could impact negatively on patient's survival rates during cardiac arrest situation. During the study it was observed that all the subjects were very conscious and interested to learn. in the posttest

there is significant gain in knowledge and practice was seen. The result indicated that equal positive response to the demonstration and planned teaching was found really useful to them. However, skills of CPR have to be improved by current training programs at regular intervals. Their knowledge and practical approach have to be updated with the current guidelines in CPR.

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