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“A Study To Assess The Effectiveness Of Planned Teaching Program On Cardiopulmonary Resuscitation In Terms Of Knowledge And Technique Among Staff Nurses Of Selected Hospitals At Bidar”

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ABSTRACT:

Introduction: India has one of the highest incidences of Cardiac arrest in the world. The high incidence of cardiac arrest and accidents in India has long been linked with sudden cardiac arrest. While it may be difficult and unpredictable to prevent sudden cardiac arrest, till advanced treatment can be provided. One of the best things a person especially people related to health care team can do is to learn CPR to buy time for a person who has gone into a sudden cardiac arrest, till advanced medical help can be imparted. Thus, both health care providers and the public need to increase their knowledge and skills on cardio-pulmonary resuscitation. So, the study was conducted on Assessment of the effectiveness of Planned Teaching Programme on knowledge regarding Cardio-Pulmonary Resuscitation among the Nursing staff **Objectives:**

1. To administer planned teaching programme for the subjects on cardiopulmonary resuscitation. 2. To evaluate the post-test knowledge of the subject on cardiopulmonary resuscitation. 3. To assess the effectiveness of planned teaching programme on cardiopulmonary resuscitation. 4. To find out the association between pre-test and post-test knowledge scores with the selected demographical variables of the subject

Method: The research approach adopted for the study was a quasi-experimental approach. One group pre-test one group post -test design without the control group was adopted for the present study. Simple random sampling was uses to select the samples for this study.

Tool: The tool used for the data collection was close ended Structured Knowledge Questionnaire developed based on the expert's suggestions.

Results: From the findings of the study, it was clear that the knowledge of the respondents regarding Cardiopulmonary resuscitation were inadequate. The Planned Teaching Programme enhanced the

knowledge scores of the respondents regarding cardio-pulmonary resuscitation. The mean post-test knowledge scores were significantly higher than the pre-test knowledge scores. There is significant association between the pre-test and posttest knowledge of the respondents on cardiopulmonary resuscitation to the selected demographic variables.

Keywords: Cardiopulmonary resuscitation, Staff nurses, planned teaching programme

INTRODUCTION: Once life begins instincts begin to work and also to preserve it. For life by itself strives to live and not to die, and that is the normal natural process called life. Meanwhile there are many challenges too. But instincts again seek and find ways and means of preserving that precious little life.¹

In a normal and healthy individual life processes can be achieved by the physiological and physical processes on their own. But there are certain movements like accident which needs on the spot attention or at least the quickest possible attention to pull the victim out of the trauma or crisis, so as in the case of patients who has myocardial infraction. The occurrence of such an emergency is obviously unpredictable. Most of the times the emergencies would be airway obstruction hypoventilation, apnea, blood loss, cardiac arrest resulting from accident, heart attack, or other medical causes. The leading cause of preventable sudden death before old age are ventricular fibrillation from asymptomatic ischemic heart disease, non-traumatic accidents like drowning, and poisoning and trauma caused by violence of man or accidents.²

NEED FOR THE STUDY

The heart can stop beating suddenly due to many reasons – in medical parlance, this is called cardiac arrest. Cardiac arrest can occur due to many. Accidents such as road traffic cases, falls, sports accident drowning electrocution etc., can all stop the hearts beating even young children can be victims of the cardiac arrest. When the heart stops beating the brain stops receiving fresh oxygen-rich blood. The brain can survive only about 4-6 minutes without oxygen. This period of 4-6 minutes is therefore critical. This procedure of maintaining the brain's blood circulation, by reproducing the action of the heart and lung is called Cardiopulmonary resuscitation-(CPR).It is a two-part procedure that involves rescue breathing and external chest compressions. To provide oxygen to the patient's lungs, the rescuer administers mouth to mouth or mouth to mask breath, then help circulate blood through the heart to vital organs, by external chest compressions.

There are no reliable national statistics on cardiopulmonary resuscitation because no single agency collects information about: How many people get cardiopulmonary resuscitation? How many people don't get it? Who needs it? How many people are trained etc....Many studies have examined Cardiopulmonary resuscitation in specific communities while they show varying rates of success. All are consistent in showing benefits from early cardiopulmonary resuscitation⁹.

MATERIALS AND METHOD:

The research approach adopted for the study was a quasi-experimental approach. One group pre-test one group post -test design without the control group was adopted for the present study. Simple random sampling was uses to select the samples for this study. The sample size of the present study consists of 60 students of Global College of Nursing

Inclusion criteria- The study includes

1. Nursing staff of a selected hospital in Bidar
2. Nursing staff who has given consent for the Study.

Exclusion criteria- The study excludes:-

1. Other than Nursing staff
2. Students who have not given consent for the Study.

Tool: A data collection instrument is a formal document used to collect & record information such as questionnaires (Polit & Hungler 1999)

Development of the tool

In this study a questionnaire was developed to assess the knowledge regarding cardio-pulmonary resuscitation

Tool preparation was based on following key points

1. Review of literature
2. Consultation with the guide
3. Based on expert opinions &
4. Educational material

Description of the tool

The structured questionnaire consists of two sections.

Section A –: It consists of demographic variables such as age, gender, education, percentage of marks obtained in the previous examination, religion, residential background, have you ever been part of a cardiopulmonary resuscitation team, have you attended any programme related to cardiopulmonary resuscitation, If-yes source of information

Section B-: Comprises of 50 multiple choice questions which includes-

- I - General concepts of cardiopulmonary resuscitation and human body mechanism. (18)
- II - Procedure of cardiopulmonary resuscitation. (26)
- III - Follow up aspects. (6)

Scoring key

Scoring key was prepared for Section- A by coding the demographic variables. For Section – B, score '1' was awarded to correct response and '0' for wrong response in all items. Thus, a total score of 50 was allotted. To interpret the level of knowledge the score was distributed as follows.

1. Inadequate knowledge-< 50% score.
2. Moderate knowledge – 50- 74% Score.
3. Adequate knowledge - > 75% score.

RESULT:

Table–1 Frequency and percentage distribution of the participants according to Age, Gender, educational level, marks obtained in previous examination, attended programme on cardiopulmonary resuscitation. n=60

Characteristics	Category	Respondents	
		Number	Percent
Age	20 years	16	26.7
	21 years	33	55.0
	22 years	11	18.3
Gender	Male	0	0.0
	Female	60	100.0
Educational level	PUC	50	83.3
	Degree	10	16.7
Marks obtained in Previous examination	51-59 %	14	23.3
	60-63 %	30	50.0
	64-69 %	16	26.7
Attended Programme on Cardiopulmonary Resuscitation	Yes	17	28.3
	No	43	71.7

1. The table 1 shows that the maximum number of respondents 33(55.0%) belongs to 21years of age, 16 (26.7%) are of 20 years of life and 11(18.3%) are aged 22 years.
2. Gender wise distribution of respondents shows that all the samples 60 (100%) were females.
3. With regards to the educational status, it is evident that most of the respondents 50(83.3%) have completed their PUC/10+2 years prior to joining for Basic B.Sc. Nursing and 10 (16.7%) had obtained a degree other than in nursing prior to joining the Basic B.Sc. Nursing degree course.(Graph-1)
4. In context to the marks obtained in previous examination half of the samples 30 (50%) had obtained an overall percent between 60-63% another 16 (26.7%) had obtained between 64-69%, followed by the remaining respondents 14(23.3%) who had obtained between 51-59%.(Graph-2)
5. Only 17 (28.3%) of the respondents have attended any programme on Cardio-pulmonary resuscitation. Majority of the respondents 43(71.7%) have not attended any programme on cardiopulmonary resuscitation.

Table-2:- Frequency and percentage distribution the respondents. According to food Religion, Residential background, attended programme on cardiopulmonary resuscitation, source of information, have you ever been a part of cardiopulmonary resuscitation team. n=60

Characteristics	Category	Respondents	
		Number	Percent
Religion	Hindu	25	41.7
	Christian	35	58.3
Residential Background	Rural	11	18.3
	Urban	18	30.0
	Semi-urban	31	51.7
Have you ever been part of Cardiopulmonary Resuscitation team	Assisted	15	25.0
	Witnessed	30	50.0
	No	15	25.0
Source of information	Radio/Television	05	8.3
	Print media	11	18.3
	Health personnel	13	21.7

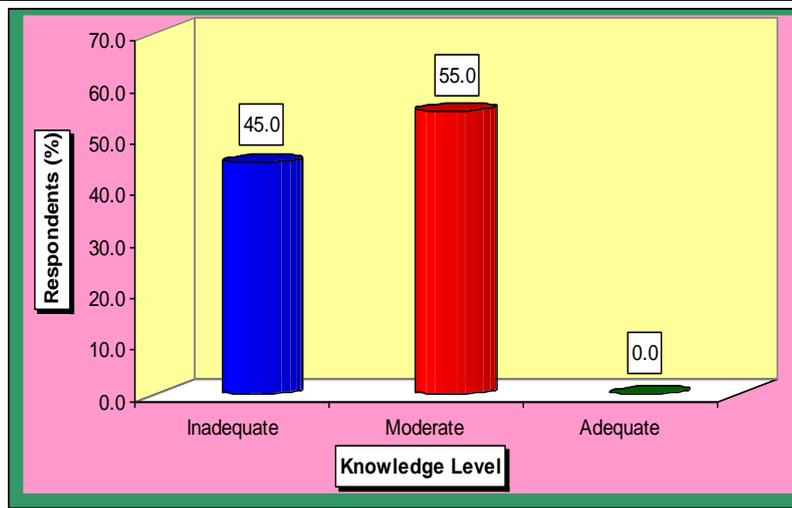
SECTION - II

Assessment of knowledge before and after planned teaching programme

Table-3:- Frequency & percentage distribution of the level of knowledge of the respondents before administering PTP. n=60

Level of Knowledge	Classification of Respondents	
	Pre test	
	Number	Percentage
Inadequate knowledge(<50% of score)	27	45%
Moderate knowledge(51-75% of score)	33	55%
Adequate knowledge($\geq 75\%$ of score)	-	-
Total	60	100.0

The table 3 depicts that in pretest majority of the respondents 33 (55.0%) had moderate knowledge and 27(45%) had inadequate knowledge regarding cardiopulmonary resuscitation. None of the respondents were found with adequate knowledge on cardio-pulmonary resuscitation. (Graph-1)



Graph-1:- Classification of Respondents according to Pretest Knowledge level on Cardiopulmonary Resuscitation

Table-4:- Mean, Standard Deviation and mean percentage of pre-test knowledge among the respondents regarding CPR. n=60

S N	Knowledge Aspects	State ments	Max. Score	Respondents Knowledge		
				Me an	Mean(%)	SD(%)
I	General concepts & Human body Mechanism	18	18	13. 20	73.3	10.4
I I	Procedure of Cardiopulmonary Resuscitation	26	26	10. 80	41.5	11.5
I I I	Follow-up Aspects	6	6	3.5 2	58.6	16.7
I V	Combined	50	50	27. 52	55.0	8.8

The table 4 shows the descriptive measures of knowledge regarding cardiopulmonary resuscitation. The category of General Concepts and human body mechanisms had a mean of 13.20 and standard deviation of 10.4 % with mean score of 73.3%.The procedure of cardiopulmonary resuscitation showed a mean of 10.80 and standard deviation of 11.5% with mean score percentage of 41.5% .The statements on the follow-up aspects were 6 with a mean of 3.52 and standard deviation of 16.7% with mean score percentage of 58.6. The overall combined mean score was 27.52, standard deviation 8.8% and mean score percentage of 55.0%

Association between pre-test knowledge and all the selected demographic variables.

The results of Chi-square analysis, indicates that there was significant association between the pre-test knowledge scores with age of the respondents younger the age higher was the knowledge scores, marks obtained in the previous examination, programmes attended prior to this programme ,the knowledge scores of the students who has attended the programmes previously were higher compared to that of others who has not attended any programme. In context to the religion the Christian students have scored better in comparison to the others.

DISCUSSION:

The findings of the study have been discussed with reference to the objectives, hypothesis and with the findings of other studies.

The major findings of the study

Regarding demographic variables:-

- In context with distribution of the participants by age it is evident that the maximum number of subjects 33(55.6%) belonged to 21years of age 16 (26.7%) belonged to the age group of 20 years and 11(18.3%) were 23 years old
- With reference to the educational status, it is evident that most of them 50(83.3%) has completed their PUC and 10 (16.7%) has obtained a degree other than Nursing before joining for the Basic B.Sc. Nursing .
- With regard to marks obtained in the previous examination most of the respondents 30(50.0%) had a percentage of 60-63%,16 (26.7) had obtained between 64-69% and 14 respondents obtained marks between 51-59%
- Majority of the participants 43(71.7%) has not attended any programme on CPR prior to this.
- In context to the residential Background 31(51.7%) belonged to semi-urban area 18(30.0)were from urban area and 11(18.3%) from rural area
- Half 30(50%) of the participants had witnessed cardio-pulmonary resuscitation being performed, 15(25%) had assisted and another 15 (25%) had never seen or assisted in performing CPR.
- Most of the participants 13(21.7%) had obtained information about cardio-pulmonary resuscitation from health professionals, 11(18.3%) had obtained about CPR from media.

Assessment of Pretest knowledge of the subjects regarding Cardiopulmonary resuscitation.

The overall mean knowledge score obtained by the participants were 27.52 with standard deviation of 4.4 and mean score percentage of 55.0 in the pretest. The level of knowledge distribution shows that majority of the subjects 33 (55.0%) had moderate and 27 (45.0%) had inadequate knowledge on Cardiopulmonary resuscitation.

The findings of the present study are consistent with the results of

A survey on cardio-pulmonary resuscitation knowledge of the nursing staff in the Asahikawa Medical College Hospital which shows that the CPR knowledge of both the nursing staffs and the student nurses was not sufficient, indicating the necessity of CPR education for both nursing staffs and student nurses¹⁸.

A descriptive study to assess the knowledge regarding CPR among the general nursing Mangalore Hospital, Bangalore showed that maximum number of students (73.33%).of Nursing staff had inadequate knowledge scores (30.25%). The overall mean % of Nursing staff are low. The study revealed that the theoretical

knowledge of students about CPR and management are insufficient. Thus, planned teaching programme is required to improve the knowledge and management skills of CPR²¹.

As indicated in the above-mentioned studies, there is a need for more elaborated assessment of knowledge and a need for training programmes on Cardio-pulmonary resuscitation for the nurses and Nursing staff.

Evaluation of post- test knowledge of the subjects regarding Cardiopulmonary resuscitation.

The overall mean knowledge score obtained by the participants were 40.13 with standard deviation of 4.6 and mean score of 88.3% in the post test. The level of knowledge distribution shows that most of the subjects 39 (65%) were having adequate knowledge and 21(35%) were having moderate knowledge on Cardio-pulmonary resuscitation in the post test. None of the respondents showed inadequate knowledge in the post post-test.

The findings of the present study are supported by the following studies

A study was conducted for "Undergraduate Nursing staff' acquisition and retention of CPR knowledge and Skills." And to investigate the extent to which Irish Nursing staff acquire and retain CPR cognitive knowledge and psychomotor skills following CPR training. A pre-test, CPR training programme, post-test, and re-test were conducted. Students' knowledge and skills were improved over their pre-training scores, which clearly indicated a positive retention in CPR cognitive knowledge and psychomotor skills. The study findings present strong evidence to support the critical role of CPR training in ensuring that nursing student's progress to competent and confident responders in the event of a cardiac related emergency³⁹.

The Avon and Gloucestershire College of Health, Glenside Centre (now University of the West of England), conducted a small survey, testing students' knowledge and skills in delivering CPR. CPR training in the curriculum, using uniform teaching packs which follow the ERC Guidelines (ERC1992a), are administered to the responded. In addition to maintaining uniform content, sessions are compulsory and students' CPR skills are tested, with 70% competency level. Evaluations shows that CPR skills and knowledge show obvious improvement and the students' general confidence and enthusiasm are enhanced post training³⁵.

Assessment of effectiveness of planned teaching programme.

The overall mean score percentage of pre-test was measured to be 55 and the overall mean score percentage of post-test was calculated to be 80.3.

Hence an enhancement of 25.2% was noted between pre-test to post-test knowledge scores.

The findings of the present study are consistent with the results of

A study conducted to evaluate the effectiveness of structured teaching programme on cardio-pulmonary resuscitation technique among staff nurses in selected hospital in Bangalore city. The total mean of the post-test knowledge score was 97.10% with enhancement of 46.9% (SD- 3.7%) which shows gain in knowledge after implementation of STP and t value was 29.06 at $p < 0.01$ level. The mean post-test skill scores were 98.18% with enhancement of 44.20% and T value was 6.46 at $p < 0.01$ level. The analysis showed that the STP has enhanced and improved the knowledge of the subjects regarding CPR⁵⁰.

A study to evaluate the effects of a planned teaching programme in Basic Life support Terms of Knowledge and skills of staff nurses of a selected hospital in Punjab. the study was conducted using experimental design and systemic sampling techniques. 30 selected staffs were given pre-test and post-test knowledge questionnaire and observation checklist. The knowledge was assessed using both pre-test and post-test it

was found that the post test scores were higher indicating PTP is effective in increasing the knowledge and skills⁵¹.

Association between pre-test and post-test knowledge scores with the selected demographic variables of the subject.

There is a significant association of the pre-test knowledge scores with the selected demographic variables, like age, younger the age higher was the knowledge scores, marks obtained in the previous examination, programmes attended prior to this programme, the knowledge scores of the students who has attended the programmes previously were higher compared to that of others who has not attended any programme. In context to the religion the Christian students have scored better in comparison to the others. Hence (H_0) was rejected at 0.05 level of significance.

There is no significant association found between the pre-test knowledge scores and selected demographical variables like previous educational level, residential background, have you ever been a part of cardio-pulmonary resuscitation team and source of information. Hence the H_0 was accepted at 0.05 level of significance.

A significant association is found between the post-test knowledge scores and selected demographical variables like previous educational status of the respondents' samples with a previous degree showed higher knowledge scores, Programme attended on CPR. The knowledge scores of the students who had attended the programmes previously were higher compared to that of others who has not attended any programme, in context to the residential background the respondents from rural community have scored better in comparison to the others in the urban and semi-urban community. Hence (H_0) was rejected at 0.05 level of significance.

There is no significant association found between the post-test knowledge scores and selected demographical variables like age, marks obtained in previous examination, religion, have you ever been a part of cardio-pulmonary resuscitation team and source of information. Hence the H_0 was accepted at 0.05 level of significance.

The findings of the present study are supported by the following studies

A study to determine the quality of basic life support by hospital nurses was conducted that investigated the relation between BLS quality and some of its potential determinants. During a BLS refresher course, 296 nurses from non-critical care wards completed a questionnaire including demographic data and a "self-confidence" score. Subsequently, they performed a BLS test on a manikin connected to a PC using Skill reporting System software (Laerdal, Norway). The study showed that Male gender, greater self-confidence, recent BLS training and recent CPR were associated with better quality of BLS²⁹.

A study to determine if the different academic degrees or years of working experience in the emergency room (ER) modify the ability to learn the Basic Cardiopulmonary Resuscitation Guide of the American Heart Association. Over a period of 3 years, 68 health care professionals participated. Participant's data were grouped by their education level as well as their experience in ER. The students were evaluated before and after the course with various tests. The result of the study showed that the students with more experience working in ER obtained the best grades ($p < 0.001$). In addition, those with higher academic degrees attained high grades ($p < 0.01$). The cumulative effect of experience and education also influenced the

students' performance ($p < 0.001$). Thus, we can conclude that the study found that experience has the highest weight in determining learning performance. The combination of both experience and educational attainment has a synergic effect in mastering the competencies:

CONCLUSION:

Planned teaching programme was effective in improving the knowledge levels of the Nursing staff regarding cardiopulmonary resuscitation. Further researches should be conducted on Cardio-pulmonary resuscitation to improve its quality. Training and re-training of Nursing staff and nurses should be carried out based on the latest guidelines of administering Cardio-pulmonary resuscitation, so that they can effectively administer cardio-pulmonary resuscitation and thus save life which is precious to everyone.

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