

“Effectiveness of structure teaching programme on knowledge regarding CPR technique among GNM 3rd year students in selected nursing College, Kanpur”

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ABSTRACT

Introduction: CPR is a rescue procedure to be used when the heart and lungs have stopped working. There is a wide variation in the reported incidence and outcome for out of hospital cardiac arrest. Several authors described the problem of poor performance in CPR. Even when provided by medical professionals. Numerous investigations have reported the problem of poor skills retention after various CPR courses. Studies reporting the need for improvement of resuscitation techniques led to the recent changes in BLS and ALS algorithms.

Objectives: 1. to assess the knowledge regarding CPR technique among nursing students.2. To evaluate the effectiveness of structured teaching programme on knowledge regarding CPR technique.3. To find out the association between pre-test knowledge score with their selected socio-demographic variables.

Methodology: A pre experimental one group pre-test, post-test quantitative research design was used for the study.60 samples were selected by using convenience sampling technique from Rama Nursing College, Kanpur. The data collection was done using 20 structured knowledge questions and 07 demographic characteristics. Data was analyzed by using descriptive and inferential statistics.

Result: Result revealed that Majority of the subjects (75.40%) were in the age group of 20-22 years. 100% subjects were female. Majority of subjects 91.66% belonged to Hindu religion, 71.66% Subjects were got information from other sources. The pre-test mean score of knowledge was (8.68±2.78) and post-test knowledge score was (12.76±2.59). The students had good knowledge about the importance of CPR in clinical practice. There is significance association with only one variable as source of information. ($X^2 = 0.034$).

Conclusion: Study Conclude that structured knowledge questions demonstrated that up-to-date CPR skills in nursing students were insufficient, which could be improved by demonstration training programs on CPR. At least, Demonstration training basic skills of CPR should be a mandatory component in the all health-associated fields like medical, paramedical, and nursing colleges and faculties. From this study, we suggest that all members of our community and especially health care professionals should join CPR training programs.

Key word: -STP, Nursing Students, CPR, Training programme,

1 Introduction

CPR has been existing since biblical time. Men have attempted to restore life to the death or nearly dead individual. In the eighteenth century, it was common in Europe to throw an unconscious person over the backs of trotting horses or rolling them over barrels, in an attempt to move air in and out of their chests. Later Schafer's prone position method of artificial respiration was developed. In 1960s Mr. Kouwenhoven and his associates developed the present technique of external chest compression in the supine position and coupled this with artificial respiration.[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 moments like accidents, which need on-the spot attention or at least, the quickest possible attention to pull the victim out of that trauma or crisis. So, also in the case of a patient who has had Myocardial infarction? The occurrence of such an emergency is obviously unpredictable. Most of the times these emergencies would be airway obstruction, hypoventilation, apnea, blood loss, cardiac arrest, resulting from accidents, heart attacks and other medical causes. The leading causes 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 the violence of man or accidents (Berg, Kern,1988).[2]

Hence the Cardiopulmonary Resuscitation is the

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most modern and appropriate lifesaving emergency technique known so far to reverse the Cardiopulmonary Arrest, which is practiced throughout the world to meet the oxygen and nutritional demands of the cells of the brain. [3] Resuscitation includes all measures that are applied to revive patients who have stopped breathing suddenly and unexpectedly due to either respiratory or cardiac failure. Cardiac arrest is one of the common causes of cardio-respiratory failure. Cardiac arrest refers to a sudden state of apnea and circulatory failure. Cardiac arrest is synonymous with the terms sudden death; it means that the victim's heartbeat, circulation of blood and respiration have suddenly and unexpectedly stopped. Prompt action is vitally important for the success of cardiopulmonary resuscitation. When a person stops breathing spontaneously, his heart also stops beating, clinical death has occurred. Within four to six minutes, the cells of the brain, which are sensitive to the paucity of oxygen, begin to deteriorate. If the oxygen supply is not restored, the patient suffers irreversible brain damage and biological death occurs (AHA, 2000).[4]

Teaching is an essential part of education. Its special function is to impart knowledge, develops understanding and skills. It generally includes inculcation of values like truth. Teaching technology involves the mechanism of an instructional process in a classroom situation, with a level of teaching theories. There are principal teaching operations and establishment of a relation between theories and teaching operations.[5]

The Nursing students belong to these groups who have enthusiasm in learning and excellence in performing in new things. When a competent student uses correct technique of CPR, large number of clients can be saved. Emergency resuscitation is the first hand management done for critically ill and students need to be knowledgeable in all aspects to revive the client who is struggling for life. Competence and confidence in CPR is the corner stone's of emergency management of critically ill. Health teaching is an integral part of nursing and it emphasis a scientific attitude towards health which is very important to modern healthy living [6]

2 Objective

- 1- To assess the knowledge level of nursing students regarding CPR technique.
- 2- To evaluate the effectiveness of structured teaching programme on knowledge regarding CPR technique.

- 3- To find out the association between pre-test knowledge score with their selected socio-demographic variables.

3 Hypothesis

H1: There is significance different between pre-test and post-test knowledge score regarding CPR technique among GNM 3rd year students.

H2: There is a significance association between Post-test Knowledge score with their selected socio-demographic variables.

4 Methodology

The quantitative research approach was used for present study. One group pre-test post-test research design used to assess the effectiveness of the STP on knowledge regarding CPR. The study was conducted in selected nursing colleges in Kanpur. The 60 sample were selected by using non-probability convenience sampling method to collect data. A structured questionnaire and on CPR technique was used for data collection. The investigators developed Structured Teaching Programme on "CPR Technique". The content validity of the research tool was established by experts. Reliability of the tool was tested by using split half method. The questionnaire and rating scale was found to be reliable. A pilot study was conducted on a small sample of 6 nursing student. In data collection procedure, a pre-test was administered first to assess knowledge of the samples. On first day STP was implemented. On the seventh day post-test was administered using the same questionnaire to assess knowledge after Structured Teaching Programme. Collected data was organized and analyzed in terms of frequency, percentages, paired't' test and presented in the form of table and graph.

5 Result

On the basis of above mentioned objectives the data is presented in the five sections.

1. Distribution of frequency and percentages according to socio- Demographic Variables
2. Assessment of pre-test level of knowledge of nursing students regarding CPR technique
3. Assessment of Post-test level of knowledge of nursing students regarding CPR technique.
4. Comparison of pre and post-test knowledge with respect to CPR technique among students studying in a selected nursing college.
5. Association between the pre-test knowledge scores with respect to CPR technique among nursing students.

Description of Socio Demographic Variable

Table No 1: Frequency and Percentage Distribution of Samples According To Socio Demographic Variables

S.No	Socio Demographic variables	Samples	
		Frequency(n)	%
1	Age in year of the participant.		
	(A)- 20 – 22	46	75.40 %
	(B)- 23 – 24	10	16.66 %
	(C)- 25 – 26	3	5%
	(D)- More than 26	1	1.66 %
2	Gender of the participant.		
	(A)- Male	0	0
	(B)- Female	60	100 %
	(C)- Other	0	0
3	Religion of the participant		
	(A)- Hindu	55	91.66 %
	(B)- Muslim	3	5 %
	(C)- Christian	2	3.33 %
	(D)- Other	0	0
4	Family income per month.		
	(A)- Below 10000	18	30 %
	(B)- 10001 – 20000	27	45 %
	(C)- 20001 – 30000	5	8.33 %
	(D)- More than 30000	10	16.66 %
5	Father/Mother's occupation		
	(A)- Govt. employee	13	21.66 %
	(B)- Private employee	21	35 %
	(C)- Self employed	26	43.33 %
	(D)- House wife	0	0
6	Have you attended any training programme on CPR Technique?		
	(A)- Yes	38	63.33 %
	(B)- No	22	36.66 %
7	Source of information regarding CPR Technique.		
	(A)- News paper	2	3.33 %
	(B)- TV	10	16.66 %
	(C)- Social Media	5	8.33 %
	(D)- Other	43	71.66 %

Table no – 1 Shows that Majority of the subjects (75.40%) were in the age group of 20-22 years. 100% subjects were female. Majority of subjects 91.66% belonged to Hindu religion, 45% subjects had family income of Rs. 10001-20000, Majority

of subject (43.33%) parents had self-employed, 63.33 % sample had previous knowledge on CPR, and 71.66% Subjects were got information from other sources.

Table No 2: Frequency and percentage wise assessment of level of knowledge of the samples according to their pre test. N=60

S.No	Knowledge Score	No. of Samples	Percentage (%)	Remark
1	16 –20	0	0	Adequate level of knowledge
2	11 – 15	13	21.66 %	Moderate level of knowledge
3	0 –10	47	78.66 %	Inadequate level of knowledge

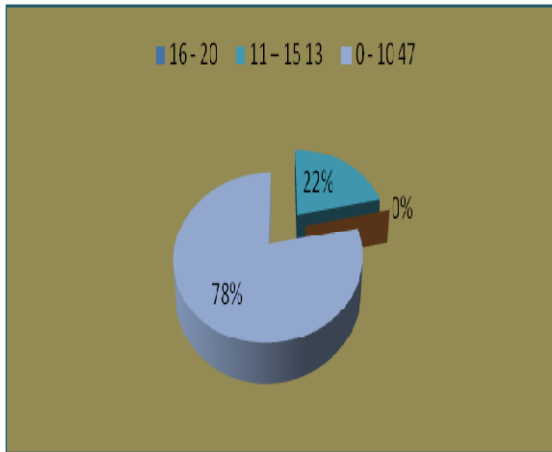


Figure No1: Pie diagram showing level of knowledge of the students in pre-test

Table No-2 and figure no-1 showing the level of knowledge of students shows that majority 47 (78.66%) of the sample had Inadequate knowledge, 13 (21.66%) of the subjects had moderate knowledge regarding and none of them had good knowledge regarding CPR technique.

Table No 3:Pre-Test Overall Knowledge Score on CPR Technique N=60

Questions	No. of questions	Mean	Mean %	SD
Overall Pre-test knowledge	20	8.68	43.15%	2.78

Table no.3 shows the sample pre-test overall knowledge of CPR technique. They are having 43.15% of knowledge before the organization of structured education programme.

Table No 4: Frequency and percentage wise assessment of level of knowledge of the samples according to their post test. N=60

S.No	Knowledge Score	No. of Samples	Percentage (%)	Remark
1	16 –20	7	11.66 %	Adequate level of knowledge
2	11 – 15	40	66.66 %	Moderate level of knowledge
3	0 –10	13	21.66 %	Inadequate level of knowledge

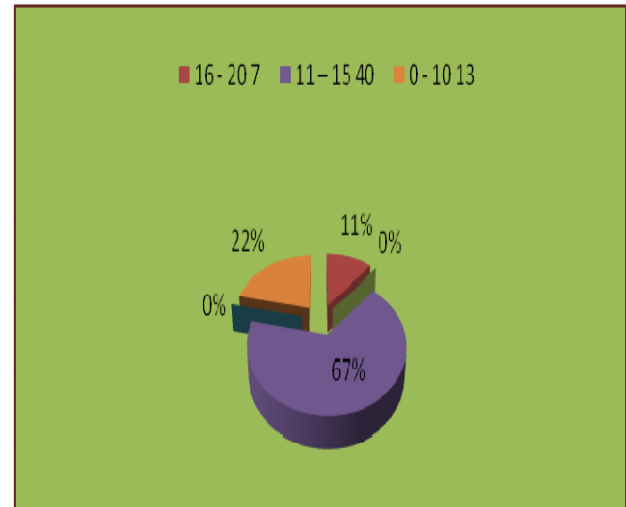


Figure no 2: Pie diagram showing level of knowledge of the students in post-test

Table no 4 and Figure no-2 showing the level of knowledge of students shows that majority 40 (66.66%) of the sample had moderate knowledge, 13 (21.66%) of the subjects had inadequate knowledge and 7(11.66%) of the subject had adequate knowledge regarding CPR technique.

Table5: Post Test Overall Knowledge Score on CPR Technique N=60

Questions	No. of Questions	Mean	Mean %	SD
Overall post-test Knowledge	20	12.76	63.8%	2.59

Table no 5 Shows that the subject’s post-test overall knowledge on CPR technique was 63.80% of knowledge after the organization of structured instructing program

Table No. 6: Determination of Overall Mean Knowledge Score before and After Structure Teaching Programme N=60

	Max. Score	Pre-test	Post-test	Student paired
		Mean ±SD	Mean ±SD	T-test
Over all Knowledge Score	20	8.68 ± 2.78	12.76±2.59	13.485 Df =59 p <.001

Table no. 6 shows the sample pre-test and post-test in general learning on CPR technique.. Mean pre-test information score is 8.68 and mean post-test learning score is 12.76. The variation identified before and after knowledge score t-13.485(df-59) at **p<.001**. So after statistical analysis, this difference seems to be high and it is statistically significant. Pre-test and post-test mean knowledge scores and ‘t’ value showed that the mean gain in knowledge was 12.76. The ‘t’ value was significant (t= 13.48) at p < 0.001 level indicating the structured teaching programme regarding CPR technique was effective. Hence, stated research hypothesis H₁ has been accepted.

Table 7: Association between Post Test Knowledge Regarding CPR Technique among Nursing Students with Their Selected Socio Demographic Variables N=60

	Variables	Categories	Post-test Level Of Knowledge			Chi-Square	D.f	Level Of Significance.
			Inadequate	Moderate	Adequate			
1	Age in year of the participant.	20 – 22	10	32	4	1.88	6	0.930 (NS)
		22 – 24	2	8	0			
		24 – 26	1	2	0			
		More than 26	0	1	0			
2	Gender of the participant.	Male	1	0	0	3.67	2	0.159 (NS)
		Female	12	43	4			
		Other	0	0	0			
3	Religion of the participant.	Hindu	11	41	3	5.26	4	0.261 (NS)
		Muslim	1	1	1			
		Christian	1	1	0			
		Other	0	0	0			
4	Father's income per month.	Below 10000	6	11	1	7.14	6	0.308 (NS)
		10001 – 20000	6	20	1			
		20001 – 30000	1	4	0			
		More than 30000	0	8	2			
5	Father's occupation	Govt. employee	1	11	1	2.17	4	0.704 (NS)
		Private employee	5	15	1			
		Self employed	7	17	2			
6	Have you attended any training programme on CPR technique?	Yes	11	24	3	3.81	2	0.148 (NS)
		No	2	19	1			
7	Source of information regarding CPR technique.	News paper	0	2	0	13.61	6	0.034 (S)
		TV	6	4	0			
		Social Media	2	3	0			
		Others	5	34	4			

Table no 7 shows the association between socio-demographic variables and the post-test level of Knowledge. Association with Source of information regarding CPR technique, $\chi^2=0.034$ ($P<0.001$ significance), are significantly associated with their post-test Knowledge score. These types of association are statistically significant and it was calculated using Pearson chi square test/Yates corrected chi square test. The association was calculated by Chi square test. Therefore the Research hypothesis H_2 has been accepted.

6 Discussion

The present study was conducted to evaluate the effectiveness of STP on CPR technique among nursing students. Quasi experimental research design with single group pre-test post-test design approach was adopted in order to achieve the objective of the study. The samples were selected using simple random technique. The sample of 60 GNM students and the data was collected from them using a structured questionnaire before and after administration of STP. As per demographic data Table no – 1 Shows that Majority of the subjects (75.40%) were in the age group of 20-22 years. 100% subjects were female. Majority of subjects 91.66% belonged to Hindu religion, 45% subjects had family income of Rs. 10001-20000, Majority of subject (43.33%) parents had self employed, 63.33 % sample had previous knowledge on CPR, and 71.66% Subjects were got information from other sources. If we compare knowledge score of sample table no. 6 shows the pre-test and post-test in general learning on CPR technique.. Mean pre-test information score is 8.68 and mean post-test learning score is 12.76. The variation identified before and after knowledge score $t=13.485$ (df-59) at $p<.001$. So after statistical analysis, this difference seems to be high and it is statistically significant. There is a significant association between post-test knowledge score and source of information regarding CPR technique. The association was calculated by Chi square test. Therefore the Research hypothesis H_2 has been accepted.

7 Conclusion

Assessment of knowledge regarding CPR technique among nursing students and teaching them about CPR technique is the main concept of the study. This will help student to gain knowledge regarding CPR technique. Most of the nursing students' knowledge was not up to the mark before the STP among nursing students facilitated them to learn more about CPR technique, which is evident in the post-test knowledge scores. Very highly significant difference was found between pre-test and post-test knowledge scores of nursing students

on CPR technique. The study showed that STP was very highly effective in improving the knowledge of nursing students regarding CPR technique.

Bibliography

- [1] Alemma (1997), "A study to assess the effectiveness of teaching of nurses regarding the knowledge of cardiopulmonary resuscitation in a selected hospital", Unpublished M. Sc. Nursing thesis, MangaloreUniversity.
- [2] Berg; Kern et al, "Bystander Cardiopulmonary repatriation: Is ventilation necessary?", *Circulation*, 1999;88:1907-1915.
- [3] Hand Book and Emergency cardio vascular case for Health care providers, American Heart Association,2000
- [4] Health care providers manual for basic life support, American Heart Association,1997
- [5] Dr. B. T. Basavanthappa, "Nursing Education", New Delhi, Jaypee Brothers: 2000.
- [6] Reena George, 2003, "Evaluate the effectiveness of a planned teaching programme regarding prevention of nutritional anaemia in adolescent girls of selected rural pre-university college at Mangalore, Unpublished M. Sc. Nursing thesis,RGUHS.