

A Study to Evaluate the Effectiveness of Planned Teaching Program in Terms of Knowledge Regarding Cardiopulmonary Resuscitation Among Staff Nurses at Selected Hospitals Kota (RAJASTHAN)

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How to cite this article: Bhardwaj S.K., A study to evaluate the effectiveness of planned teaching program in terms of knowledge regarding cardiopulmonary resuscitation among staff nurses at selected hospitals Kota (RAJASTHAN). Gfnpss-IJMR 2024; 5:3: 2532-2538

Submitted: 16-March -2024: **Accepted:** 26-March-2024: **Published:** 31-March -2024

Abstract

Introduction: CPR is the artificial method of circulating blood and oxygen through the body and attempting to keep the brain alive if the CPR is initiated within 4 minutes of cardiac arrest, the survival rate is 43 percent; when initiated within 4-8 minutes the survival rate is 10 percent According to the article in "Nursing Times", the physicians, dentists, nurses and health care professionals should be adequately and regularly trained in CPR. Hospital resuscitation is an important life saving measure and warrants appropriate attention, training co-ordination and equipment's.

Materials & Methods : The present study evaluative approach with A quasi-experimental research design with pre and posttest with control group approach was chosen and 80 staff nurses who were working in selected hospitals, Kota. 40 experimental group and 40 control group were selected using non probability purposive sampling. Close ended questionnaire about CPR and Planned teaching programme.(PTP) to assess the knowledge of the staff nurses about CPR.

Results: The result show most of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj (pre level) 44(55.0%) had Inadequate knowledge score, 21 (26.2%) had Moderate knowledge score, and 19 (28.8.0%) had Adequate knowledge score of Central venous pressure monitoring by Cardiopulmonary resuscitation among staff nurses who have working in medical intensive care unit in selected hospital, kota. After planned teaching programm post test show of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj.). 22(27.5%) had Inadequate knowledge score, 28 (35.0%) had Moderate knowledge score, and 30 (37.5%) had Adequate knowledge score of Cardiopulmonary resuscitation among staff nurses who have working in medical intensive care unit in selected hospital, kota.

Conclusions: Knowledge about Cardiopulmonary resuscitation was inadequate among staff nurses working in Govt. MBS Hospital, Kota. Therefore they have gained knowledge in all area of Cardiopulmonary resuscitation. The 't' test which was computed between pre-test and post-test knowledge scores, indicate a true gain in the knowledge. Hence it was concluded that planned teaching program was effective method to improve knowledge among staff nurses. There is no significance association between knowledge score with selected demographic variables such as Age, and Gender and there is significance association between knowledge score with selected demographic variables such as professional qualification, years of experience, working area, and previous knowledge on Cardiopulmonary resuscitation.

Keywords: Knowledge; Cardiopulmonary resuscitation; Planned teaching program; Effectiveness; Staff nurses

Introduction:

The heart is a muscular pump that provides the force necessary to circulate the blood to all the tissues in the body. Its function is vital because, to survive, the tissues need a continuous supply of oxygen and nutrients, and metabolic waste products have to be removed.

Oxygen is important for energy part of the human body. Without oxygen the cells that makeup the body organs brain and other body parts will die. Heart action and respiratory efforts are absolute requirements in transporting oxygen to the tissues.

Cardiac arrest is often caused by an abnormal heart rhythm called ventricular fibrillation (V.F). When VF develops, the heart quivers and doesn't pump blood. The victim VF cardiac arrest needs Cardio Pulmonary Resuscitation (CPR) and delivery of a shock to the heart called Defibrillation. Defibrillation eliminates the abnormal VF heart rhythm and allows the normal rhythm to resume. Defibrillation is not effective for all form of cardiac arrest but it is effective to treat VF. The most common cause of sudden Cardiac arrest. CPR emergency procedure used to treat victims of cardiac and respiratory arrest. It is done with great urgency to avoid the brain damage or death result from 4 to 6 minutes without oxygen.

CPR is the artificial method of circulating blood and oxygen through the body and attempting to keep the brain alive if the CPR is initiated within 4 minutes of cardiac arrest, the survival rate is 43 percent; when initiated with in 4-8 minutes the survival rate is 10 percent.

Importance of Cardiac Resuscitation of sudden cardiac arrest is a leading cause of death, approximately 250,000 per annum outside a hospital setting in the U.S.A. According to the American Heart Association only 2/3 of victims of a witnessed cardiac arrest are administered CPR. Over the 11 years period overall incidence of CPR was 21.9 per 10,000 procedures

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Approximately 460,000 people die from heart disease annually in the either in a emergency department or before reaching hospital. The majority of the death are due to coronary artery disease and most are sudden cardiac death. Remarkable progress has been made in resuscitation from cardiac arrest over the last 50 years.

Materials & Methods

Research approach: evaluative approach

Research design: A quasi-experimental research design with pre and post-test with control group approach

Sample and sample size of the study: 80 staff nurses who were working in selected hospitals, Kota. 40 experimental group and 40 control group.

Sampling technique: Non-probability purposive sampling technique

Population: Staff nurses working in selected hospitals Kota.

Setting of the Study: MBS hospital, JK Loan hospital Kota.

Independent Variables: Planned teaching programme on CPR.

Dependent Variables: knowledge of staff nurses

Extraneous Variables: age, religion, professional qualification in nursing years in experience,

department where working and previous information acquired regarding cardiopulmonary resuscitation.

Tool for data collection: The tools used for the study were

1. Close ended questionnaire to assess the knowledge of the staff nurses about CPR.
2. Planned teaching programme.(PTP)

Level of scoring

Level of knowledge	Percentage of scores	Actual scores
Very poor	< 20%	
Poor	21% to 40%	8-14
Average	41% to 60%	15-22
Good	61% to 80%	23-29
Excellent	81% and above	>30

Table 2: Frequency and percentage Distribution According to Socio-demographic data

S.N	Variable	Frequency	Percent
1	Age		
	31 – 40	14	17.5
	41 – 50	37	46.2
	51 – 60	18	22.5
		11	13.8
		80	100
2	Professional qualification in nursing		
	GNM	61	76.2
	B.Sc	11	13.8
	Post basic	6	7.5
	M.Sc / Ph.d	2	2.5
		80	100
3	Working experience(in year)		
	Less then one year	12	15
	1 to 5 year	14	17.4
	6 to 10 year	15	18.8
	Above 10 year	39	48.8
		80	100
4	Working area		
	General ward	37	46.2
	Emergency	17	21.3
	Intensive care unit	14	17.5
	Other	12	15
		80	100
5	Previous information acquired regarding cardio pulmonary resuscitation		
	Book	28	35
	Video	26	32.5
	Work shop/ Seminar	9	11.3
	Past experience from hospital	17	21.2
		80	100
6	In-service education		
	Yes	5	6.2
	No	75	93.8
		80	100

N=80

Table-2: Frequency and percentage distribution of pre knowledge score

N=80

	Frequency	Percent
Inadequate knowledge	44	55.0
Moderate knowledge	21	26.2
Adequate knowledge	15	18.8
	80	100.0

Table-3: Frequency and percentage distribution of post knowledge Cardiopulmonary resuscitation score

N=80

	Frequency	Percent
Inadequate knowledge	22	27.5
Moderate knowledge	28	35.0
Adequate knowledge	30	37.5
	80	100.0

Table-4: Effectiveness of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj)

	Variables	Marks	Pre group			Post Group			Effectiveness		
			Mean	S.D	Mean%	Mean	S.D	Mean%	Mean	S.D	Mean%
1	Meaning, causes, signs and symptoms of cardiac arrest.	5	3.48	1.091	69.6	4.51	1.067	90.2	1.308	0.024	20.6
2	Recognition of cardiac arrest	3	1.5	0.928	50.0	2.64	0.783	88.0	1.138	0.200	38.0
3	Meaning and indication for CPR	3	1.5	0.857	50.0	2.2	0.96	73.33	0.7	0.103	23.37
4	Precautions to be taken during CPR	3	1.4	0.857	46.67	1.95	1.03	65.0	0.55	0.173	18.33
5	Airway	3	1.38	0.786	46.00	2.25	0.948	75.0	0.875	0.162	29.00
6	Breathing	4	1.78	0.981	44.50	2.98	0.981	99.3	1.2	0.000	54.8
7	Circulation	8	4.88	1.633	61.00	7.38	1.296	92.95	2.5	0.337	31.95
8	Complications and	4	2.08	1.088	52.00	2.74	1.145	68.5	0.663	0.057	16.5
	CPR	34	17.98	3.158	52.88	26.64	3.163	78.35	8.663	0.01	25.47

Table-5: Mean, standard Deviation and 't' distribution of pre and post test level of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj)

	Group	Mean	Std. Deviation	Std. Error Mean	M.D	t-test	d.f	P.Value	Result of Ho hypothesis
Meaning, causes, signs and symptoms of cardiac arrest.	Pre	3.48	1.091	.122	1.038	6.066	79	.000	Rejected
	Post	4.51	1.067	.119					
Recognition of cardiac arrest	Pre	1.50	.928	.104	1.138	8.009	79	.000	Rejected
	Post	2.64	.783	.088					
Meaning and indication for CPR	Pre	1.50	.857	.096	.700	4.829	79	.000	Rejected
	Post	2.20	.960	.107					
Precautions to be taken during CPR	Pre	1.40	.821	.092	.550	3.646	79	.000	Rejected
	Post	1.95	1.030	.115					

	Group	Mean	Std. Deviation	Std. Error Mean	M.D	t-test	d.f	P.Value	Result of Ho hypothesis
Airway	Pre	1.38	.786	.088	.875	6.383	79	.000	Rejected
	Post	2.25	.948	.106					
Breathing	Pre	1.78	.981	.110	1.200	7.343	79	.000	Rejected
	Post	2.98	.981	.110					
Circulation	Pre	4.88	1.633	.183	2.500	11.288	79	.000	Rejected
	Post	7.38	1.296	.145					
Complications and nurse's responsibilities in CPR	Pre	2.08	1.088	.122	.663	3.782	79	.000	Rejected
	Post	2.74	1.145	.128					
CPR	Pre	17.98	3.158	.353	8.663	17.805	79	.000	Rejected
	Post	26.64	3.163	.354					

According d.f. (79) table t-test table value is at .05 level 1.99

Table-5: Association between knowledge of regarding Cardiopulmonary resuscitation in selected conditions selected hospitals Kota.(Raj) with socio-demographic variables.

S . N	Variable	frequency	inadequate	Moderate	Adequate	Ch. sq	D.f	P.Value/ Table vale	Results of Ho
1	Age	14	8	4	2	17.658	6	.007 12.591	Rejected
	21 – 30	37	22	11	4				
	31 – 40	18	12	4	2				
	41 – 50	11	2	2	7				
	51 – 60								
2	Professional qualification in nursing	61	40	15	6	21.185	6	.002 12.591	Rejected
	GNM	11	3	4	4				
	B.Sc	6	1	2	3				
	Post basic	2	0	0	2				
	M.Sc / Ph.d								
3	Working experience (in year)	12	4	6	2	8.360	6	.213 12.591	Accepted
	Less than one year	14	8	4	2				
	1 to 5 year	15	6	4	5				
	6 to 10 year	39	26	7	6				
	Above 10 year								
4	Working area	37	17	10	10	7.439	6	.282 12.591	Accepted
	General ward	17	13	3	1				
	Emergency	14	9	4	1				
	Intensive care unit	12	5	4	3				
	Other								
5	Previous information acquired					2.296	6	.891	Accepted
	Book	28	14	8	6				
	Video	26	17	5	4				
	Work shop/ Seminar	9	5	2	2				
	Past experience from hospital								
6	In-service education	80	44	21	15	8.808	2	.012	Rejected
	Yes	5	0	4	1				
	No								

Discussions

The result show most of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj (pre level) 44(55.0%) had Inadequate knowledge score, 21 (26.2%) had Moderate knowledge score, and 19 (28.8.0%) had Adequate knowledge score of Central venous pressure monitoring by Cardiopulmonary resuscitation among staff nurses who have working in medical intensive care unit in selected hospital, kota.

After planned teaching programm post test show of Cardiopulmonary resuscitation among staff nurses at selected hospitals Kota.(Raj Post level) 22(27.5%) had Inadequate knowledge score, 28 (35.0%) had Moderate knowledge score, and 30 (37.5%) had Adequate knowledge score of Cardiopulmonary resuscitation among staff nurses who have working in medical intensive care unit in selected hospital, kota.

The dimensions of cardiopulmonary resuscitation i.e. Meaning, causes, signs and symptoms of cardiac arrest, Recognition of cardiac arrest, Meaning and indication for CPR, Precautions to be taken during CPR, Airway, Breathing, Circulation and Complications and nurse's responsibilities in CPR and cardiopulmonary resuscitation obtained as 6.066, 8.009, 4.829, 3.646, 6.383, 7.343, 11.288, 3.782 and 17.805 respectively. The 't' test was statistically significant as all the obtained values are higher than the tabulated value 1.99 required for t-test to be significant at 0.05 level of confidence. There is a difference between the pre and post group staff nurses towards Meaning, causes, signs and symptoms of cardiac arrest, Recognition of cardiac arrest, Meaning and indication for CPR, Precautions to be taken during CPR, Airway, Breathing, Circulation and Complications and nurse's responsibilities in CPR and cardiopulmonary resuscitation alternative null hypotheses have been rejected.

the generalization has been established as there is significant difference between the pre and post group found i.e. Meaning, causes, signs and symptoms of cardiac arrest, Recognition of cardiac arrest, Meaning and indication for CPR, Precautions to be taken during CPR, Airway, Breathing, Circulation and Complications and nurse's responsibilities in CPR and cardiopulmonary resuscitation.

There are 6 socio demographic variables which showed there is significant association with Cardiopulmonary resuscitation score by analyzing

chi square value.

Conclusions

Majority of the subjects had inadequate knowledge in the pre-test whereas majority of the subjects had adequate knowledge in post-test. The mean post-test percentage scores and the modified gain scores in all areas were found to be high. Knowledge about Cardiopulmonary resuscitation was inadequate among staff nurses working in Govt. MBS Hospital, Kota. Therefore they have gained knowledge in all area of Cardiopulmonary resuscitation.

The 't' test which was computed between pre-test and post-test knowledge scores, indicate a true gain in the knowledge. Hence it was concluded that planned teaching program was effective method to improve knowledge among staff nurses.

There is no significance association between knowledge score with selected demographic variables such as Age, and Gender and there is significance association between knowledge score with selected demographic variables such as professional qualification, years of experience, working area, and previous knowledge on Cardiopulmonary resuscitation.

Financial support and sponsorship: No

Conflict of Interest: There are no conflicts of interest

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