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A STUDY TO ASSESS THE EFFECTIVENESS OF SELECTED NURSING STRATEGIES ON STRESS AMONG THE PATIENTS SUBJECTED TO ELECTIVE CORONARY ARTERY BYPASS GRAFT SURGERY IN A SELECTED HOSPITAL

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ABSTRACT

Introduction: *Among the cardiovascular diseases Coronary Artery disease is the leading cause of death worldwide. When the symptoms of these diseases cannot be controlled by pharmacological treatment, Coronary Artery Bypass Grafting (CABG) is the treatment option. Undergoing CABG surgery is the stressful event and that induce physiological and psychological impact to the patient during postoperative period. Nurses play a pivotal role in management of stressors related to CABG surgery and its management. Professional nurses are a major solution for securing optimal heath for persons undergoing cardiac surgery. Hence the researcher decided to focus the study to assess the effectiveness of selected nursing strategies on stress among the patients subjected to elective coronary artery bypass graft surgery*

Aims: *The aim of the present study is to assess the effectiveness of selected nursing strategies on stress among the patients subjected to elective coronary artery bypass graft surgery.*

Methods: *Quasi-Experimental, Pretest posttest control group design was used in this study. A Convenience sampling consisting of 200(100 Experimental and 100 Control group) selected from Frontier Lifeline Hospital at Chennai. During pretest and posttest the structured knowledge questionnaire to assess the knowledge level regarding CABG surgery and Modified Lazarus scale to assess the stress level were used as a tool for both the groups. Then Experimental group received selected nursing strategies for stress reduction whereas the control group received routine hospital care only.*

Results: *In the pretest, the mean stress for the experimental group was found to be 78.83. After the intervention, the stress reduced to 39.42 and 30.20 respectively at the posttest-I and posttest-II. The mean stress for the control group was found to be 78.81, 36.01 and 56.02 respectively at pretest, posttest-I and posttest-II. The finding showed that in the experimental group the level of stress reduction was occurred more compared to the control group at p=0.001.*

Conclusion: *Undergoing CABG surgery patient's perception of the stressors had to be paid attention for a smooth recovery.*

INTRODUCTION

Heart is an amazing organ in the human body. Once the heart begins to beat, it will continue to beat all the way till the end of the life of an individual. As the heart continues to pump and work properly, the myocardium needs continuous blood supply through coronary arteries. Therefore, the coronary arteries are so vital to the effective functioning of the heart. Atherosclerosis (fat deposition the artery) is one such condition that affects coronary arteries as well as which restricts blood flow to the heart muscle and it leads to fatal condition to the patients. This is because of the changing life style and fast food culture in the modern globalised scenario. Atherosclerosis is a preventable and curable disease condition when people following healthy practice life style means. When the symptoms of these diseases cannot be controlled by pharmacological treatment Coronary Artery Bypass Grafting (CABG) is treatment choice for Coronary Artery Disease. The persons who are undergoing CABG surgery, Stress and anxiety are the genuine response to patients, which is usually related to lack of knowledge about surgery and possible outcomes regarding their surgery. Therefore, keeping in view of these facts the investigators planned that to give a preoperative education in the form of problem focused coping information may be designed to reduce stress of the patients undergoing CABG surgery.

LITERATURE REVIEW

Cristiane, Olga, Valmira, and Eliana (2012) conducted a qualitative study using semi-structured interviews to evaluate the stress factors among eight patients who had coronary artery bypass graft or heart valve surgery at the hospital Das Clinical De Ribeirao Preto(HCRP). According to the experiences of the patients, the result of the study revealed stress under four categories: 1) the surgical experience: the patients stated that it was really fearful, ; 2) about the ICU environment and post

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operative period: the patients stated that they felt isolated, the recovery was the hard past, need will power, and the hardest part was to stay there for three days in the ICU, decreased mobility, and depends on the others; 3) unpleasant experiences about thirst, intubation, and pain; 4) the relationship with health care professionals: the patients stated that professional presence representing safety and clarification. So the study findings concluded that these problems need to be addressed for the patients undergoing CABG surgery.

Miguel, et al., (2011) conducted a prospective longitudinal study to evaluate the preoperative mood disorders in patients undergoing cardiac surgery in a sample of 100 patients. Hospital Anxiety and depression Scale were used to assess the level of anxiety; pain, analgesic use and postoperative morbidity were evaluated in the intensive care unit. The results showed that 32% of the patients developed preoperative anxiety and 19% of the patients developed were depression. A length of post-operative hospital stay for more than three days was the main risk factor for preoperative depression. Preoperative anxiety significantly increased the post-operative pain and painkiller consumption. Neither depression nor anxiety significantly modified the rest of the post-operative variables associated with morbidity in the intensive care unit.

Ping (2012) conducted a randomized controlled trial study to evaluate whether a preoperative education intervention could reduce anxiety and improve recovery among 153 (73 usual care and 77 preoperative education that includes information leaflets and verbal advice) Chinese cardiac patients from December 2009 to may 2010 at two public hospitals in Luoyang, China. Anxiety was measured by the Hospital Anxiety and Depression Scale (HADS), pain was measured by the Brief Pain Inventory short form (BPI-sf), and length of ICU stay and postoperative hospital stay were also evaluated. The results showed that participants who received preoperative education experienced a greater decrease in depression score and less interference from pain in sleeping compared with those who did not. There was borderline evidence to suggest a reduced number of hours spent in the ICU among preoperative education patients but no difference in length of postoperative hospital stat (p=0.17).

To sum up, review of literature revealed that undergoing CABG surgery patients typically experiences stress related to chances of successful surgery, fear of death due to surgery, fear about the recovery process, fear of pain and discomfort, resumption of normal life activities after surgery and length of hospitalization etc. Among the patients the stressors related to CABG surgery has to be managed by professional nurses through well designed preoperative educational intervention.

RESEARCH OBJECTIVES

*T*he present study has been aimed to assess the effectiveness of selected nursing strategies on stress among the patients subjected to elective coronary artery bypass graft surgery.

MATERIALS AND METHODS

To carry out the study a Quasi-Experimental, Pretest posttest control group design was adopted. A Convenience sampling consisting of 200(100 Experimental and 100 Control group) selected from Frontier Lifeline Hospital at Chennai. The tool consist of Socio-demographic variable proforma, Knowledge questionnaire regarding CABG surgery , Modified Lazarus scale used to assess the stress level and selected nursing strategies were used for stress reduction.

INCLUSION AND EXCLUSION CRITERIA

The study included patients who are undergoing elective CABG surgery at first time, available at the time of data collection and willing to participate in the study. Patients who had previous cardiac surgery and any other major surgery were excluded from the study.

DATA COLLECTION PROCEDURE

Formal ethical and administrative permission were obtained from concerned hospital. Informed consent was obtained from the sample. The study was explained to the samples and confidentiality was assured. In the preoperative period the data were collected regarding the socio demographic variables of the patients, knowledge questionnaire related to CABG surgery and modified Lazarus stress scale were used to assess the stress level for both the groups. Then the Selected Nursing Interventions were given to the subjects in the experimental group which includes preoperative information and booklet related to CABG surgery to address the problem focused information whereas the control group received routine hospital care only. The posttest knowledge was conducted in the preoperative stage itself and the level of stress were assessed during second and sixth postoperative day for both the groups. The level of stress ranges from mild, moderate and severe.

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ResultsL: Table 1: Distribution of selected socio demographic variables of subjects Undergoing CABG surgery by group wise

SL. NO	Variables	Sub-Variables	Experimental Group(n=100)		Control Group(n=100)		Chi-square test value	df	P value
			No	%	No	%			
1.	Age(In Years)	30-40	9	9	6	6	0.885	3	**0.829 (NS)**
		41-50	20	20	18	18			
		51-60	34	34	37	37			
		61-70	37	37	39	39			
2.	Gender	Male	63	63	70	70	1.100	1	0.294(NS)
		Female	37	37	30	30			
3.	Educational Status	Non-Literature	13	13	09	09	2.289	4	0.683(NS)
		Primary school	18	18	16	16			
		Secondary school	23	23	18	18			
		Higher Secondary	15	15	21	21			
		Graduate and above	31	31	36	36			
4.	Occupation	Coolie	31	31	26	26	0.244	2	0.885(NS)
		Employee	39	39	44	44			
		Business	22	22	19	19			
		Unemployed	08	08	11	11			
5.	Family History of Heart Disease	Yes	23	23	19	19	0.482	1	0.487(NS)
		No	77	77	81	81			
6.	Having Hypertension	Yes	76	76	74	74	0.381	1	0.422(NS)
		No	24	24	26	26			
7.	Diagnosis	Single vessel disease	09	09	14	14	1.684	4	0.794(NS)
		Double vessel disease	16	16	12	12			
		Triple vessel disease	30	30	33	33			
		Left ventricular dysfunction	23	23	21	21			
		Disabling angina	22	22	20	20			

Table 1 shows the distribution of selected socio demographic variables of the study participants undergoing CABG surgery by group wise. The data on age indicates that, among the 37% of the subjects in the experimental group and 39% subjects in the control group were in the age group of 51-60 years. The Chi-square test was applied to verify the similarity in the age distribution for the two groups. The non significant P value of 0.829 indicates that in both groups the age distribution was similar. In relation to the gender, 63% subjects in the experimental group and 70% subjects in the control group were male. The educational status of the subjects showed that, 31% subjects in the experimental group and 36% subjects in the control group were graduates. Non significant P value 0.683 indicates that the educational distribution was similar in both groups. In relation to the occupation the non significant P value 0.885 indicates that the occupational distribution was similar in both groups. The family history of heart disease revealed that, 23% of the subjects in the experimental group and 19% subjects in the control group had a family history of heart disease. Regarding the condition of Hypertension76% of the subjects in the experimental group and 74% subjects in the control group had hypertension. Regarding diagnosis, 30% of the subjects in the experimental group and 33% subjects in the control group had a triple vessel disease. The non significant P value 0.794

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indicates that the diagnosis distribution was similar in both groups.

Table 2 shows that the Mean and Standard Deviation of the level of knowledge related to CABG surgery among the CABG subjects during the pretest and the posttest wise. During pretest, the mean level of knowledge for the experimental group was found to be 9.25 with standard deviation of 3.54, and in the posttest, the mean score was 16.31 with standard deviation of 3.71. The significant P value of pared-t test revealed that, there is a difference in the level of knowledge between pretest and post. In the control group, the mean pretest knowledge was found to be 9.14 with standard deviation of 3.02, and in the posttest, the mean score was 10.90 with standard deviation of 3.34. The significant P value of pared-t test revealed that, there is a difference in the level of knowledge between pretest and post.

Table 2: Mean and Standard Deviation of the level of knowledge related to CABG surgery among CABG subjects during pretest and posttest group wise.

Group	Control Group		Experimental Group		ANCOVA		
	Mean	Standard Deviation	Mean	Standard Deviation	Source	'F' Value	'P' Value
Pretest	9.14	3.02	9.25	3.54	Group	207.16	**0.001**
Posttest	10.90	3.34	16.31	3.71			
Paired 't' value	35.49		31.53				
P value	0.001 (S)		0.001 (S)		Knowledge at Pretest	741.86	0.001 (S)

(S)-Significant

Table 3 shows the distribution of overall stress among the CABG surgery during pretest, posttest-I and posttest-II group wise. Out of 100, 82% of the subjects in the control group had severe stress and 5% had mild stress during the pretest among the subjects undergoing GABG surgery, whereas in the experimental group, 77% of the subjects had severe stress and 7% had mild stress during the pretest. During posttest-I among the subjects, 36% in the control group had severe stress and 14% had mild stress, whereas in the experimental group, 13% of the subjects had severe stress and 61% had mild stress during posttest-I. During posttest-II, among the subjects, 21% in the control group had severe stress and 27% had mild stress, whereas in the experimental group, 11% of the subjects had severe stress and 72% had mild stress during posttest-II.

Table-3: Distribution of overall stress among the CABG surgery subjects during pretest, posttest-I and posttest-II group wise

Level of stress among CABG subjects		Pretest				Posttest-I (2nd Post operative day)				Posttest-II (6th Post operative day)			
		Control Group (n=100)		Experimental Group (n=100)		Control Group (n=100)		Experimental Group (n=100)		Control Group (n=100)		Experimental Group (n=100)	
Level of Stress	Score Range	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mild	0-47	05	05	07	07	14	14	61	61	27	27	72	72
Moderate	48-70	13	13	16	16	50	50	26	26	52	52	17	17
Severe	71-94	82	82	77	77	36	36	13	13	21	21	11	11

The above findings concluded that more number of subjects had reduction in the level of stress in the experimental group than in the control groups.

DISCUSSION

The findings well recognized that undergoing CABG surgery is a very stressful time for patients. Assessing the level of stress is feasible and it can be measured easily in the preoperative period. Keeping in view these facts the researcher conducted to assess the effectiveness of selected nursing strategies on stress among the patients subjected to elective coronary artery bypass graft surgery. The distribution of analysis revealed that, both the groups had severe stress in the preoperative period. Thus the selected nursing strategies were given to the subjects in the experimental and its effectiveness was tested. The findings of the study reflect that the selected nursing strategies were extremely effective to reduce stress in the experimental group than control group. Similar finding have also been reported by Odreona (2013) investigated the effects of preoperative nursing education on stress and postoperative complications. Findings revealed that at admission, the level of stress measurements in the intervention and control groups were approximately 56 and 55 in both the groups. Just before entering the operating room, these values reduced to 32.30 and 39.04 respectively.

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Lack of preparedness to surgery which leads to acute psychological distress. Excessive preoperative stress can in turn have major implications for the recovery of patients. Stress may trigger activation of the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis. This activation produces a variety of physiological changes that leads to poorer surgical outcomes and prolonged inpatient stay (Lewis et al., 2006). Thus, the health care providers have a role in determining and monitoring the patients' stress, identifying what causes stress, and then find the possible solutions to prevent or decrease it while preparing for CABG surgery.

CONCLUSION

The study finding concluded that the selected nursing strategies was found to be effective to reduce stress and improved knowledge of the patients. The stress of patients undergoing CABG surgery has to be managed by the nursing professional with the help of well designed preoperative education. It is well documented in other countries, that nurse led education programmes reduce the impact of stress on health and is cost effective.

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