A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge regarding Post Operative Management of Patients with CABG among Staff Nurses Working in Post Operative Cardiac Units of Selected Hospitals at Guntur

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Abstract: *Cardiovascular disease is the world's leading killer, accounting for 16.7 million or 29.2per cent of total global deaths. Heart-attack victims are just the first wave of a swelling population of Asians with heart problems; global cardiovascular disease related deaths now occur in nations which cover most countries in Asia. Objectives of the Study: The objectives of the study are1. To determine the level of knowledge among staff nurses regarding post operative management of patients withCABG.2To evaluate the effectiveness of planned teaching programme on level of knowledge regarding post operative management of patients with CABG among staff nurses in Post Operative CardiacUnits.3. To find out the association between levels of knowledge regarding post operative management of patients with CABG among staff nurses in Post Operative Cardiac Units with their selected demographic variables. Hypothesis: The following hypotheses will be tested at 0.05 level of significance. H_1: Mean posttest knowledge score of postoperative management of patients with CABG among staff nurses in Post Operative Cardiac Units will be significantly higher than mean pretest knowledge score. H_2: There will be significant association between pretest level of knowledge score of staff nurses regarding post operative management of patients with CABG and with their demographic variables. Major Findings of the Study: comparison between mean scores of both pre-test and post-test level of knowledge among staff nurses working in post operative cardiac units regarding post operative management of CABG. The mean value of pre-test is 15.3 with standard deviation of. The mean percentage is 51%. The mean value of post-test is 24.72 with standard deviation of. The mean percentage is 82.4% the "t" value is 14.2190. Table value at αf is 2.008 at o.05 level. So that calculated value is difference between pre-test and post-test knowledge scores. With the mean difference of 9.42. There is no significant association between their selected demographic variables like age, gender, educational qualification, income. There is an significant association between the selected demographic variables such as religion X^2 =17.284 p=.00176 df = 3. Hence h_2 is partially accepted.*

Keywords: Effectiveness, Planned Teaching Programme, Knowledge, Post Operative Cardiac Units Staff Nurses, Coronary Artery Bypass Grafting (Cabg), Post-Operative Care

1. Introduction

Cardiovascular disease is the world's leading killer, accounting for 16.7 million or 29.2per cent of total global deaths. Heart-attack victims are just the first wave of a swelling population of Asians with heart problems; global cardiovascular disease related deaths now occur in nations which cover most countries in Asia. The genetic predisposition and acquisition of traditional risk factors at a rapid rate as a result of urbanization seems to be the major cause. While efforts are being made to contain this epidemic by educating public and applying preventive measures, the ever-increasing burden of patients with symptomatic and life-threatening manifestations of the disease is posing a major challenge. This requires a concerted effort to develop modern facilities to treat these patients. The healthcare facilities to manage these high risk patients by contemporary methods like percutaneous coronary revascularization and surgical methods have shown a very promising trend during the lastdecade[1].

According to the World Health Report, circulatory diseases such as heart attacks kill more people than any other disease, accounting for at least 15 million deaths every year. Cardiovascular disease (CVD) was certified to be the primary cause of death in 43.33% of all deaths in Australia and 41.97% in Victoria. The majority of these deaths were from coronary heart disease (CHD). The Victorian Inpatient Minimum Database for the 12-month periods highlights the rapid increase in the number of patients admitted to hospital with CHD and a rapid increase in the number of major interventions in its treatment. The mortality attributable to CVD in India is expected to rise by 103 per cent in men and 90 per cent in women from 1985 to 2015[3].

CABG produces the most dramatic and rewarding relief of severe disability in a high proportion of patients. The development of CABG provides an example of the interdependence and interaction of many different fields of technology and science leading to surgical advance. CABG is very effective at prolonging life and relieving angina in appropriately selected patients. However, these patients are at high risk for disease progression and recurrence of cardiac events such as angina, myocardial infarction, repeat revascularization and death; hence CABG surgery is a stressor not only to the patient but also to those caring after them[4].

2. Review of Literature

Literature related to:
1) Incidence and prevalence of CABG.
2) Post operative management of CABG patient.
3) Complications in CABG patients.
4) Knowledge of staff nurses regarding management of CABG patient.

2.1 Literature related to incidence and prevalence of CABG

A randomized controlled trial was conducted in South Africa among 2290 patients to analyze the demographic data and outcome of acute coronary syndrome in South African Asian Indian population. The participants were divided into three age subgroups, ≤ 45 yrs. (young), >45 yrs. (middle), >65 yrs. (old). All three age groups were predominantly males, but this was more evident in the younger and middle age groups and became less striking as the proportion of females increased with age.48% were subjected to angiographic studies and among them 14% underwent CABG. This shows the increasing prevalence of coronary disease and cardiacsurgery[20].

2.2 Literature related to post operative management of CABGpatient

A randomized controlled trial study was conducted to examine the effects of a short intervention on behavioral risk factor modification in patients with coronary artery disease (CAD) on Type A behavior. Samples were the acute myocardial infarction patients or patients who underwent coronary artery bypass grafting (CABG). They were randomly assigned to an 8-week multiple risk modification group program (n = 94) or to a control group (n = 90) that received usual care with standard physical exercise training. The result had shown that the intervention was effective in reducing hostility and total Type A behavior at post intervention (P =.01) and at 9-month follow-up (P =.03). The study concludes that a short behavioral intervention for coronary patients can result in relatively large and persistent reductions in cognitive aspects of Type A behavior and hostility, inparticular[24].

2.3 Literature related to post CABG complications

An evaluative study was conducted in selected hospitals Italy, among 74, 577 patients of different age groups and gender to examine the rates of complications following coronary artery bypass surgery. A significant effect modification by gender was found in 39 hospitals; the adjusted odds ratios showed significant increased risk for females. In three of these hospitals a significant increased risk was found for older age. Two hospitals showed a significant excess risk for patients' ≥75 years. The result shows that women and elderly are more prone for post operative complications after a CABG[33].

2.4 Literature related to knowledge of staff nurses regarding management of CABG patient

A focus group study was conducted in Canada to identify nurses' learning needs to prepare patients for managing pain before and after discharge home from cardiac surgery and to develop a pain education intervention for nurses. Participants (N = 22) were asked about their perceptions of patients' education needs forpain management after cardiac surgery and approaches to help nurses meet these needs. Participants identified the most common pain knowledge gaps for patients before and after discharge after cardiac surgery and they also identified their most helpful educational approaches being brief in-services, hands-on learning, lunch-and-learn sessions, and designated educationdays[38].

Statement of the problem
"A study to assess the effectiveness of planned teaching programme on knowledge regarding post operative management of patients with CABG among staff nurses working in post operative cardiac units of selected hospitals at Guntur district".

Objectives of the Study
The objectives of the study are
- To determine the level of knowledge among staff nurses regarding post operative management of patients with CABG
- To evaluate the effectiveness of planned teaching programme on level of knowledge regarding post operative management of patients with CABG among staff nurses in Post Operative Cardiac Units.
- To find out the association between levels of knowledge regarding post operative management of patients with CABG among staff nurses in Post Operative Cardiac Units with their selected demographic variables.

Hypotheses
The following hypotheses will be tested at 0.05 level of significance.
H_1: There is a significant difference between pretest and post test level of knowledge of staff nurses regarding post operative management of CABG.
H_2: There will be significant association between pre test level of knowledge score of staff nurses regarding post operative management of patients with CABG and with their demographic.

Assumption
The study assumes that:
1) Staff nurses may have inadequate knowledge regarding post operative management of CABG.
2) Staff nurses may have interest to know more about post operative management of CABG
3) Planned teaching programme will enhance the knowledge of postoperative management of CABG.

Delimitation
The study is delimited to staff nurses
1) The study is limited to the age group of 20-60 years.
2) The study is conducted only in selected hospitals.
3) Data collection period will be for 4 weeks

3. Materials and Methods

Source of the data
Staff nurses working in Postoperative cardiac Units of selected hospitals at Guntur

Research Approach and Research Design
Qualitative research approach will be used for this study. Pre experimental one group pre-test post-test design is the most appropriate design for measuring the impact or effectiveness of a programme.

Pre Test	Treatment	Post Test
O_1	X	O_2

$E = O_2 - O_1$

O_1– Pre-test knowledge score of staff nurse

X – Implementation of Planned teaching programme regarding post operative management of patients with CABG among staff nurses

O_2 – Post test knowledge score of staff nurses

E-Effectiveness of Planned teaching programme regarding post operative management of patients with CABGamong staff nurses.

Setting of the study
Study will be conducted in the Selected hospitals at Guntur district

Population
In the present study population consist of staff nurses working in post operative cardiac units of selected hospitals at Guntur district.

Methods of data collection

Sampling Technique
Purposive sampling is will be used for the study.

Sample Size
The sample for the present study consisted of 50 staff nurses who met the inclusion criteria.

Criteria for Sample Selection

Inclusive Criteria
Staff nurses in Postoperative cardiac Units
1) Who are in the age group of 20-60years
2) Who are willing to participate in the study
3) Who are available at the time of data collection period only females will be selected.

Exclusive Criteria
Staff nurses in Postoperative cardiac Units,
1) Who don't have previous experience in Postoperative cardiac Units
2) Who are not willing to participate in this study.

Tool for the Data Collection
To fulfill the objectives of the study a closed-ended structured knowledge questionnaire was prepared to measure the dependent variable before and after the administration of PTP

The tool was constructed in two parts. Part I consists of demographic variables. Part II consists of 30 items on CABG.

Part I: Includes 6 items of demographic variables
Part II: It consists of total 30 items related to knowledge regarding CABG.

Methods of Data Analysis and Interpretation
Descriptive statistics are useful for summarizing empirical information. Inferential statistics, which is based on laws of probability, provides a means of drawing conclusion about the population from which data is obtained for sample. Data will be analyzed using descriptive and empirical statistics.

Data analyzed by the following steps:
1) Data arranged in a master sheet.
2) Descriptions of the subjects with respect to demographic variables were presented using frequencies, and percentage.
3) Mean, standard deviation, mean percentage were used to evaluate the effectiveness of the PTP.
4) Statistical significance of the effectiveness of the PTP was analyzed using a paired 't' test.
5) Data were represented in tables, graphs and diagrams.

Independent Variable
In the present study the independent variable is the planned teaching programme on post operative management of patients with CABG.

Dependent Variable
In the present study it refers to the knowledge of staff nurses about post operative management of patients with CABG.

Demographic Variable
In the present study the demographic variables are age, sex, educational qualification, religion and income.

4. Results

Part I: Description of the demographic variables of the staff nurses. Frequency and percentage distribution of demographic variables of staff nurses.

Distribution of the staff nurses with respect to their demographic variables shows that highest percentage (56%) was in the age group of 21-29 years, maximum number (86%) participated in the study were females, highest percentage (82%) has General Nursing and Midwifery diploma, most (40%) of staff are Muslims, many (40%) did get salary about 8000-10000.

S. No	Variables	Frequency	Percentage (%)
1	Age in years		
	21 – 29 years	29	56%
	30-39 years	13	26%
	40 – 49 years	05	10%
	50 – 60years	03	6%
2	Gender		
	Male	07	14%
	Female	43	86%
3	Educational qualification		
	General nursing and Midwifery	41	82%
	B. sc nursing or post Certificate b. sc (n)	09	18%
	M. sc nursing	0	0%
4	Religion		
	Hindu	17	34%
	Muslims	20	40%
	Christians	13	26%
	Others	0	0%
5	Income		
	8000-10, 000 /-rs	20	40%
	10, 001-12, 000 /-rs	20	40%
	12001-15, 000 /-rs	6	12%
	Above 15, 000/-rs	4	8%

Part-II: Evaluation of effectiveness of the planned teaching programme on post operative management of patients with CABG among staff nurses working in post operative cardiac units. (N=50)

S. No	Group	Mean	Mean Percentage	Mean difference	Standard Deviation	"t" value
1	Pre –test	15.3	51%	9.42	2.913	T=18.663 df=49 Table value 2.008
2	Post –test	24.72	82.4%		2.843	

Tables shows that comparison between mean scores of both pre-test and post-test level of knowledge among staff nurses working in post operative cardiac units regarding post operative management of CABG. The mean value of pre-test is 15.3 with standard deviation of. The mean percentage is 51%. The mean value of post-test is 24.72 with standard deviation of. The mean percentage is 82.4% the "t" value is 14.2190. Table value at αf is 2.008 at o.05 level. So that calculated value is difference between pre-test and post-test knowledge scores. With the mean difference of 9.42.

5. Discussion

Part I: Description of the demographic variables of staff nurses.
Distribution of the staff nurses with respect to their demographic variables shows that highest percentage (56%) was in the age group of 21-29 years, maximum number (86%) participated in the study were females, highest percentage (82%) has General Nursing and Midwifery diploma, most (40%) of staff are Muslims, many (40%) did get salary about 8000-10000.

The above study findings is supported by another study conducted in USA to explore and describe the experiences of registered nurses regarding in-service training programs in their institutions and, to make recommendations to Nursing Service Managers relating to the development of effective in-service training programs in their institutions. A qualitative, exploratory, descriptive design was implemented. Data was analysed using Tesch's descriptive approach. The study results showed that majority of registered nurses experienced in-service training programs in

their institution as inadequate. This highlights the need for conducting more in-service education programmes to improve the knowledge and skills of the staffnurses[51].

Part II: Evaluation of effectiveness of the planned teaching programme on post operative management of patients with CABG among staff nurses working in Post Operative Cardiac Units.
The knowledge score of staff nurses on post operative management of patients with CABG reveals that, post-test mean knowledge score was higher 24.72 (82.4%) with SD of 2.843 when compared with pre-test mean knowledge which was 15.3 (51%) with SD of 2.913. The mean effectiveness score was 9.42. Area wise comparison of effectiveness of PTP also shows significant difference between pre test and post test. these findings indicate that there is significant gain in knowledge on post operative management of patients with CABG among staff nurses after PTP.

A study was conducted to assess the effectiveness of PTP on knowledge and practice of endotracheal suctioning among staff nurses in different intensive care units of selected hospital in Guntur. An evaluative research approach was done. Sample size was 50 and purposive sampling was used. The overall mean post-test knowledge score (27.5) was significantly higher than the overall means pre-test score (17.0), the paired 't' test value is 24.42 (t_{49} – 3.4 P 96 < 0.01). This shows that PTP is an effective teaching aid for improving knowledge of staffnurses.[46]

Chi-square test was done to analyze the association between the pre-test knowledge scores and the selected demographic variables. The study findings show that shows that the chi

square values of all demographic variables, i. e. age, sex, educational qualification, and income are not significant at 0.05 level of significance. Hence the Religion Is significant H2 is accepted and research for all the demographic variables.

6. Conclusion

The main aim of the study was to assess the knowledge of staff nurses regarding post operative management of patients with CABG and teach them about it. Teaching was given through PTP which helped the staff nurses to gain knowledge and skills on post operative management of patients with CABG. The following conclusions were drawn on the basis of findings of the study:

In the pre test, the distribution of staff nurses according to their level of knowledge showed that majority of respondents, 56% had average knowledge scores and 44% had poor knowledge scores.

Mean percentage of the knowledge score in the pre test was 51% with mean± SD of 15.3±2.913, which had increased after administration of PTP with mean percentage of 82.4% and mean± SD of 24.72±2.843. The planned teaching programme tested in the study was found to be effective (t= 18.663, p< 0.05) in improving the knowledge on post operative management of patients with CABG among staff nurses. This shows that PTP is an effective teaching method for providing information.

Association of demographic variables with pre test scores was computed using chi-square test. Analysis showed that, there is significant association of selected demographic variables with pre test knowledge scores.

Thus the findings indicate that there is lack of knowledge among staff nurses regarding post operative management of patients with CABG and information through various means like planned teaching programme is an important source of improving the knowledge.

Nursing Implications
1) Nursing is built on a body of knowledge discreetly synthesized from physical, biological, and social science and uniquely applied as a humanistic discipline of caring for people wherever they are recognizing the health care needs of patients.
2) Nurses must incorporate scientific knowledge and technical advances into their practice to assist the patients in remaining well and functioning at the maximum level.
3) The findings of the study have several implications in the field of nursing practices, nursing education, nursing administration and research.

Nursing Practice
1) All nurses have the responsibility to provide adequate care for the patients undergoing CABG.
2) These responsibilities are outlined in standards of practice, best practice guidelines, and institutional policies and procedures. The implications for nursing from this study include an emphasis of the need for

nurses to gain knowledge regarding post operative management of CABG patients and utilise this in their daily clinical practice.
3) This can be accomplished through preventing complications, reducing pain, providing psychological support and providing discharge advices for the patients along with appropriate interventions and documentation of findings, in accordance with the standards of practice and institutional policies.
4) Nurses must continue to expand their knowledge and provide their patients with state-of-the-art pre and post operative pain management. The planned teaching programme used in the present study is one of the means to improve nurses' skills to reach positive outcome through appropriate knowledge.

Nursing Education
1) Education on post operative management of CABG patient should be an essential part of nursing curricula at both graduate and undergraduate levels.
2) Nursing curricula should incorporate the entire major strategies essential in caring for patients admitted for CABG. This will provide all nurses with a basic foundation on which they can grow in their knowledge of caring Post Operative Cardiac Units patients, as it relates to caring patients with differing cardiac surgeries.
3) Their role is pivotal in raising awareness and increasing the knowledge base of nurses, regarding the impact on patient outcomes that is caused by unskilled and careless management.
4) Special classes and in-service education programmers should be conducted. The teaching programme can act as a good teaching and learning material.

Nursing Administration
1) Nurse administrators in the inpatient setting are ultimately responsible for ensuring positive patient outcomes. Administrators of clinical organizations must ensure proper nursing management to their patients and to the community.
2) The primary focus of today's healthcare administrators is to deliver cost-effective care and ensure patient satisfaction.
3) They also have the duty and responsibility to empower and align with the staff nurses to implement a strategic plan designed to improve nursing management practices within their organizations.
4) By supporting staff nurses in continuing educational activities, administrators will ensure adequate post operative management activities, improve patient outcomes, and increase nursing and patient satisfaction.

Nursing Research
The present study has identified the gaps in knowledge of nurses regarding care of CABG patients. This study guides future research related to testing the effects ofeducationalinterventionsinimprovingknowledgeofnursesin otherareasofcardiology nursing. In addition, the replication of the study should be carried out with a larger sample and multiple locations

7. Limitations

The limitations of the present study are:
1) The study was confined to a small sample selected by purposive sampling techniques which restricts the generalizability.
2) The study lacked control group to allow testing for an increase in knowledge without planned teaching programme.
3) No attempt was made to do the follow-up to measure the retention of knowledge of the staff nurses.
4) The utilisation of PTP by staff nurses could not be assessed in the live situation, individually due to lack of time.

8. Suggestions

This study suggests that nurses need more information about management of CABG patients so that these cases are recommended as applied results of this research:
1) Holding classes and educational courses for staff nurses.
2) Paying more attention to selection of Post Operative Cardiac Units staff.
3) Designing policies for increasing the motivation for care giving among nurses.
4) Taking measures for improving the quality of nursing courses.
5) Determination of a clear administrator for training the nursing staff in each hospital.

9. Recommendations

Keeping in view the findings of the present study, the following recommendations are made for further study:
1) A similar study can be conducted on a larger sample which may help to draw more definite conclusions and make generalizations.
2) An experimental study could be undertaken with a control group.
3) A follow-up study of the PTP could be carried out to find the effectiveness in terms of retention of knowledge.

References

[1] Mortality Statistics On Bypass Surgery And Angioplasty [Cited Nov 2009]. Available fromwww.heartprotect. com/mortality-stats. htm
[2] Trehan N. Cardiovascular disease trends in India. Escorts Heart Institute and Research Centre; 2006 Nov 16; New Delhi, India.
[3] Suzanne C, Brenda GB, Janice LH, Kerry HC. Brunner and Suddarth's Textbook of Medical Surgical Nursing.12thedn. Lippincott Williams &Wilkins
[4] Cesena FH, Favarato D, César DF, Oliveira SA, Luz PL. Cardiac complications during waiting for elective coronary artery bypass graft surgery: incidence, temporal distribution and predictive factors. Eur J Cardiothorac Surg 2004; 25: 196-202. Available fromindmed. nic. in/imcwebij. html.
[5] Lewis SM, Heitkemper MM, Dirksen SR. Medical Surgical Nursing.6thedition. America: Mosby Publishers; 2000.
[6] Philip K, Caves. Preoperative and postoperative management of patients undergoing coronary artery bypass grafts. World J Surg 1978; 2: 829-842. Available from www.springerlink. com/content/h60715241n57t514
[7] Coronary artery bypass graft infection. [cited Nov 2009]. Available from www.nuh. com. sg/infection/coronary-artery-bypass-graft-cabg-infections. html
[8] Bhatia JY, Pandey K, Rodrigues C, Mehta A, Joshi VR. Postoperative wound infection in atients undergoing coronary artery bypass graft surgery: a prospective study with evaluation of risk factors. Indian J Med Microbiol 2003 Oct-Dec; 21 (4) 246-51.
[9] Currey J, Browne J, Botti M. Haemodynamic instability after cardiac surgery: nurses' perceptionsofclinicaldecision-making. JClinNurs.2006Sep; 15 (9): 1081-90
[10] Heart disease quotes. Heart bypass (allopathy). [cited Aug 2010]. Available from www.whale. to/m/quotes20. html

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