

Nursing Care for Patients after Cardiothoracic Surgeries: A Critical Evaluation

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Abstract: This paper presents an overview on nursing care for patients after cardiothoracic surgeries.

Keywords: cardiothoracic surgeries

1. Introduction

Coronary artery bypass graft (CABG) surgery is indicated for patients with coronary artery disease to relieve symptoms, improve quality of life, and/or prolong life. More than 300,000 patients undergo CABG surgery annually in the India with an initial hospital cost of approximately Rs3,00,000 per patient. As operative techniques continue to improve and perioperative care is enhanced, patients who were once denied surgery may now be surgical candidates. With this increase in the complexity of surgical cases, it becomes even more crucial that there be an effective collaboration among the surgeon, the anaesthesiologist, the perfusionist, and the perioperative nursing staff.

The patient undergoing CABG surgery deserves to have confidence that the professional nurse is knowledgeable, caring, efficient, and effective in providing necessary perioperative care. Proper preparation of the patient and significant others, expertise during the intraoperative phase, and a thorough knowledge base combined with skill and compassion of the nursing staff during the postoperative phase increase the likelihood of a positive outcome for the patient. Surgery is the most frequently used method in clinical practice in general. However, due to the high risk associated with it, it can cause patients to suffer from negative emotions such as fear, anxiety, or even depression. In fact, the greater the difficulty and risk of the thoracic surgery, the more patients are susceptible to negative emotions that affect their post-operation rehabilitation and the treatment therapeutic effect. Thus, individual psychological nursing care is of great significance for these patients. Although ordinary psychological nursing care has been designed for the majority of patients, it shows a lack of specificity. In contrast, as graded nursing care is formulated according to the patient's current psychological condition, it could produce more significant efficacy, particularly for patients undergoing cardiothoracic surgery.

2. Methodology

The research design adopted for the study was quasi

experimental post-test control group design. The study was conducted at Carrier medical hospital as Control Group and RML Hospital as Experimental Group. Using convenience Sampling technique, the samples selected were 100, in which 50 samples were in the experimental group and the remaining 50 were in the control group. The Samples were recognized based on the inclusion criteria. Modified structured scale was a tool for data collection. Selected relaxation technique and exercises was demonstrated to the experimental group for 45 minutes twice a day for week in both morning and evening. The data obtained were analyzed and interpreted using descriptive and inferential statistics.

3. Result and Discussion

Regarding the comparison of mean score difference between experimental and control group, post-test level of post-operative outcome findings showed that the experimental group post-test mean score (19.48 ± 1.87) greater than control group post-test mean score (37.16 ± 2.11) with the mean score difference of 34. These findings were supported by the study conducted by Merlin (2011) on preoperative education program on cardiothoracic unit. A total of 153 patients were recruited to the trial, 77 were randomly allocated to usual care and 76 to preoperative education. Of these, 135 (88.2%) completed the trial. The participants who received preoperative education experienced a greater there was no difference between groups in average pain, current pain, and interference in general activity, mood and walking ability. Patients in the preoperative education group reported less interference from pain in sleeping (mean difference -0.9 points, 95% CI -1.63 to 0.16; $P=0.02$). There was borderline evidence to suggest a reduced number of hours spent in the ICU among preoperative education patients ($P=0.05$) but no difference in length of postoperative hospital stay ($P=0.17$)

The findings were supported by the study conducted by Wong and Wong and Rice (2007) in studies to assess the effect of preoperative teaching on patient compliance and postoperative exercises were similar to the findings of the present study. These studies have reported that there was a statistically significant ($P<0.001$) increases in the patients' performance of the postoperative activities after preoperative teaching and patients who received preoperative teaching were found to be more satisfied than the patients who did not.

The findings were supported by Micke and Luther, (2007) studied the effect of a structured teaching and exercise program implemented before CABG surgery. Testing was done on discharge and on follow up 10-14 days later. Functional capacity of subjects in the experimental group was significantly higher than that of those in the control group on discharge ($p = .01$) Above findings highlight the need for preoperative education program for effective post-operative outcome to holistic care

The second objective was to determine the effectiveness of comprehensive nursing interventions on post-operative outcome among patients undergoing cardiac surgery between the control group and Experimental groups. The mean score difference between experimental and control group post-test level of post-operative outcome finding showed that the experimental group post-test mean score (19.48 ± 1.87) was greater than the control group post -test mean score difference of (37.16 ± 2.11) the obtained independent value was 46.95 which showed statistical significance at ($p < 0.001$) level.

The findings were supported by the study conducted by Monika (2014) to determine the effectiveness of education program on postoperative outcome. Intervention, such as education, delivered prior to surgery to prevent (or) reduce postoperative pulmonary complications and to improve the self-care activities. 95% have got effective outcome, with the preoperative education and 5% have got in poor outcome overall the patients with the preoperative education program reported higher effectiveness ($p < .001$). Therefore, the research hypothesis was accepted

The findings were supported by the study contacted by Albert (2012) to assess the impact of pre-operative education on recovery following coronary artery bypass surgery. Three hundred and fifty-six people were randomized into the study, with 188 in the experimental and 168 in the control groups. Patients in the experimental group received the intervention, a day of education by members of the multidisciplinary team, prior to admission for surgery. Experimental and control subjects had the usual care, which involved education on admission and throughout their stay in hospital. Measurement was conducted on entry to the study, before randomization, and at 3 days, 6 weeks, 3 months and 6 months following operation.

A variety of tools were used: the SF-36 Health Status questionnaire, the Hospital Anxiety and Depression scale, the General Well-Being questionnaire and a pain measurement tool. Analysis was done using the intention-to treat principle and non-parametric statistics. There were no significant differences between groups in the primary outcomes namely anxiety ($P = 0.08$) and pain ($P = 0.45$), or in depression ($P = 0.61$) and wellbeing ('worn out' $P = 0.12$); 'tense and uptight' $P = 0.31$) 6 months after operation. This was also the case 3 days after coronary artery surgery. There was a significant difference in length of hospital stay ($P = 0.01$) with the experimental group.

The findings were supported by the study was conducted by Susan et. al. (2000), Gallagher & McKinley (2007). who stated

that the Patients awaiting for cardiac surgery may experience high levels of anxiety and significant symptoms of depression due to fears, worries and uncertainties in surgery. These can exacerbate symptoms of existing cardiovascular disease; adversely affect physiological parameters before and during anesthesia and result in prolonged recovery, pre-operative education delivered prior to surgeries to reduce postoperative anxiety and depression. To improve the recovery, outcome were 93% and 7% in the patients with the preoperative education program reported higher effectiveness ($p < .001$). Therefore, the research hypothesis was accepted.

The findings were supported by the study conducted by Andrew et. al. (2000), Pignay-Demaria et al. (2003). The evidence shows that the preoperative education interventions can lead to improved patient experiences and positive postoperative outcomes among a mix of general surgical patients by providing Healthcare-relevant information, coping skills and psychosocial Support before surgery. 85% were positive outcome, and 15% were negative outcome. Overall, the patients with the preoperative intervention reported that higher the positive outcome with the preoperative intervention ($p < 0.001$) Therefore the research hypothesis was accepted.

The findings were supported by the study conducted by Shuldham (2001) to evaluate the pre-operative education for those undergoing cardiac surgery. It suggested that there was a limited evidence to support the positive impact of preoperative education on patient's recovery from cardiac surgery. 91% were adequate recovery with educational program, 3% were moderately. recovery, and 5% weren't adequate recovery. The result was higher with preoperative education ($p < 0.001$). Therefore the research Hypothesis (H1) was accepted. It is inferred that the preoperative comprehensive nursing interventions was significantly effective in improving the post-operative outcome among patients undergoing cardiac surgeries.

The third objective was to find out the association between the post-test level of post-operative outcome with demographic variables among experimental and control groups. The obtained chi-square value showed that there was no significant association between the impact of post-operative outcome with selected demographical variables other than the age and habit of the clients. The chi square value is (0.001)(0.014) in the control group. The obtained chi-square value showed that there was no significant association between the impact of post-operative outcome with selected demographical variables other than religion and diagnosis. The chi square value is 0.001 in the experimental group. The results showed that the functional ability level on subjects about self-care activities before the teaching was satisfactory. Some of them showed good and very few showed unsatisfactory level of performance. The findings of this study was consistent with Prodan-Bhalla N, Macka M (2012) who conducted a study on cardio thoracic surgical unit, on post-operative recovery outcome who were receiving pre-operative comprehensive interventions program. The study

revealed that the demographic characteristics were similar between groups.

4. Conclusion

The main conclusion of this study showed that the efficacy of post-operative outcome tool is very important for patients undergoing cardiac surgery to receive holistic care. The investigator assures that, every nursing personnel who have been taken part in this study will perform a greater part in using pre-operative education program as effective in better post-operative outcome.

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