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A Study To Evaluate The Influence Of Comprehensive Pre-Operative Nursing Interventions On Post-Operative Outcomes In Patients Undergoing Cardiac Surgery At A Selected Hospital.

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ABSTRACT

"A study to evaluate the influence of comprehensive pre-operative nursing interventions on post-operative outcomes in patients undergoing cardiac surgery at a selected hospital."

Background of the study

Cardiovascular disease has become one of the greatest threats to human health in the 21st century. The number of patients suffering from cardiovascular disease has increased dramatically over recent years worldwide, and the amounts of cardiovascular operations have also increased rapidly. According to the latest report, 1.5 million cardiac surgeries are performed globally every year, and the incidence of complications varies from 2 to 60% following cardiac surgery. POD is the most common complication among cardiac surgical patients with an incidence of 25–52%. It is defined as an acute disturbance of consciousness characterized by acute and fluctuating changes in attention, awareness, and cognition, with a poor prognosis. An analysis published in Lancet reported that delirium costs more than $164 billion in health care expenses in the United States each year, bringing a heavy economic burden to society. Thereby, the prognosis of POD is receiving greater public attention.

OBJECTIVES:

1. To assess the post-operative outcome among patients undergoing cardiac surgeryin the control and experimental group.
2. To determine the effectiveness of comprehensive nursing intervention on post- operative outcome among patients undergoing cardiac surgery between the control group and experimental group.
3. To associate the post-operative outcome of patient undergoing cardiac surgery with their demographic variable.

HYPOTHESIS:

H_1: The mean post-test score on post -operative outcome of experimental group is significantly higher than in mean post test score on postoperative outcome of control group among patients undergoing cardiac surgeries.
H_2: There is a statically significant positive impact of on post-operative outcome among patient those who underwent pre-operative comparing nursing intervention. Then those who were not underwent.

METHODS & MATERIAL

Quantitative approach was adopted to evaluate the impact of comprehensive nursing interventions on post-operative outcome patients among patient undergoing cardiac surgery in selected hospital in Bareilly. The present study has the following variables independent variable-Pre operative comprehensive nursing interventions Programme. Dependent variable - Postoperative outcome among patient in cardiac surgery. The sample comprised of 80 patients who were admitted in Ganga Sheel Advance Medical Research Institute, Bareilly in pre-operative period for planned cardiac surgery patients. In which 60 patients were selected under control group and remaining 60 patients were selected under experimental group. In this study, samples were selected through non probability of purposive sampling.

RESULT

Among 120 subjects (60 %) were between the age group 41-50 yrs and (36.7%)were above 51 yrs in control group (56.7%) were
41 -50 yrs in control group and (43.3%) in experimental group.
Regarding the comorbidity most of the patients have diabetes mellitus and hypertension (100%) in the control (76.7%) in the experimental group. The main finding shows that with the mean score difference of 0 .1, the post-test score in control 1st was (47.43± 2.39) and control 2nd score was (47.57±2.47). Hence, the values remain same in the control 1st and 2nd post mean score.

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.

BACKGROUND OF THE STUDY

Cardiovascular disease has become one of the greatest threats to human health in the 21st century. The number of patients suffering from cardiovascular disease has increased dramatically over recent years worldwide, and the amounts of cardiovascular operations have also increased rapidly. According to the latest report,
1.5 million cardiac surgeries are performed globally every year approximately, and the incidence of complications varies from 2 to 60% following cardiac surgery. PODis the most common complication among cardiac surgical patients with an incidence of 25–52%. It is defined as an acute disturbance of consciousness characterized by acute and fluctuating changes in attention, awareness, and cognition, with a poor prognosis. An analysis published in Lancet reported that delirium costs more than
$164 billion in health care expenses in the United States each year, bringing a heavy economic burden to society. Thereby, the prognosis of POD is receiving greater public attention.

NEED FOR THE STUDY

Heart is an efficient durable structure which helps to lead a healthy life. Heart diseases are the leading causes of premature morbidity and mortality. When age increases, individuals become more susceptible to disease especially cardio vascular diseases. Coronary artery disease is one of the most leading diseases, which possess greater risk among Indians.

HYPOTHESIS

H_1: The mean post-test score on post -operative outcome of experimental group is significantly higher than in mean post test score on postoperative outcome of control group among patients undergoing cardiac surgeries.

H_2: There is a statically significant positive impact of on post-operative outcome among patient those who underwent pre-operative comparing nursing intervention. Then those who were not underwent.

PREOPERATIVE COMPREHENSIVE NURSING INTERVENTIONSS

According to this study, it is a well-organized comprehensive nursing interventions and implemented during the per-operative period to the patients admitted for cardiac surgery. The comprehensive nursing interventions was introduced in order to improve the good outcome of functional ability, reduce anxiety,

postoperative pain during the post- operative period. The interventions were as follows.

a. ACBT (ACTIVE CYCLE BREATHING TECHNIQUE)

b. ROM (RANGE OF MOTION EXERCISES)

c. MASSAGE THERAPHY

ACBT (ACTIVE CYCLE BREATHING TECHNIQUE)

ACBT is an active breathing exercises techniques that performed by the patient to help clear their sputum from lungs. it consists of three phases included as follows;

1. Breathing control for 3 sec.

2. Deep breathing exercises for 5 mts

3. Huffing exercises for 2 sec.

This will be performed twice a day for 5 days.

b. ROM (RANGE OF MOTION EXERCISES)

Range of motion exercised refers to the activity aimed at improving movement of a specific joint. ROM help to decrease pain, strengthen the muscles surrounding the joint. The upper and lower extremities in order to relax and strength the body muscles. This will be done for 10 mts twice a day.

c. MASSAGE THERAPHY

It is the scientific manual manipulation of the soft tissues of the body in orderto aid relaxation, relief of stress and pain, and increases the ease and efficiency of movement. this massage therapy consists of longitudinal gliding, kneading, trigger point therapy. It is a technique, in which the particular groups of muscles are systematically tensed and relaxed shoulder to upper and lower extremities in order to relax the body and mind. This will be done for the period of 10 minutes twice a day for 5 days.

POSTOPERATIVE OUTCOME

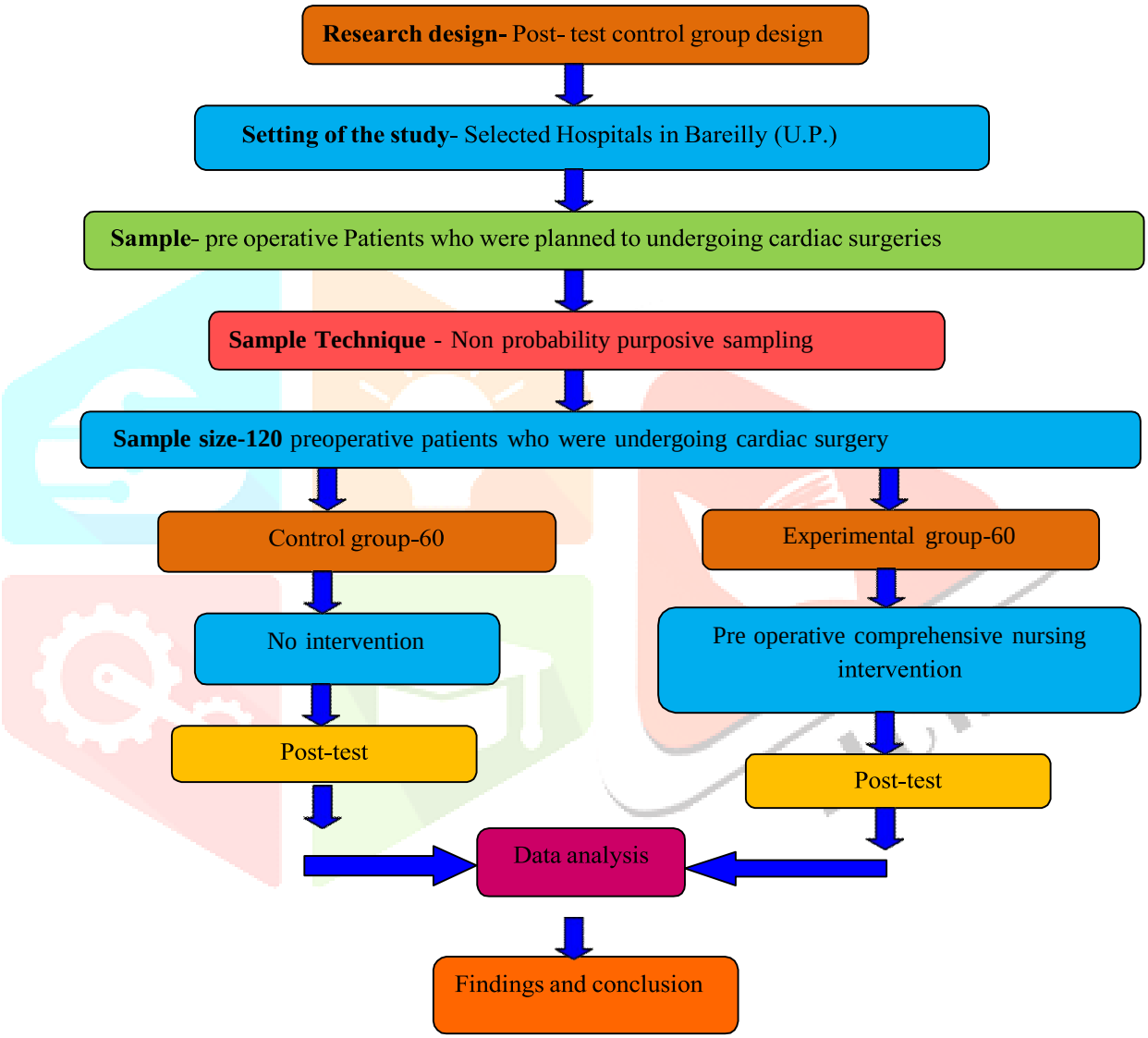
It refers that it is an expected desired outcome during the postoperative period for the patient those where under cardiac surgery with the impact of comprehensive

nursing interventions. The expected postoperative outcome includes functional ability,anxiety and pain of the patient with cardiac surgeries.

RESEARCH METHODOLOGY

It includes the research approach, research design, setting of the study, population, sample, sample size, method of sampling, criteria for sample selection, development and description of the tool, validity and reliability of tool, procedure for data collection and plan for data analysis, pilot study and ethical consideration.

SCHEMATIC PRESENTATION OF RESEARCH (Figure 6)



DATA ANALYSIS AND INTERPTRETATION

This chapter deals with analysis and interpretation data. The present study involves compilation, editing, coding, classification and presentation of the data for statistical calculation in order to draw inferences and conclusions. Using descriptive and inferential statistics, the study objectives were computed.

The data collected from the samples to evaluate the impact of preoperative comprehensive nursing interventions on post- operative outcome among patients undergoing cardiac surgery in the Selected hospital in Bareilly were organized, analyzed, tabulated and interpreted based on the objectives:

1. To assess the post-operative outcome among patients undergoing cardiac surgery in the control and experimental group.
2. To determine the effectiveness of comprehensive nursing intervention on post-operative outcome among patients undergoing cardiac surgery between the control group and experimental group.
3. To associate the post-operative outcome of patient undergoing cardiac surgery with their demographic variable.

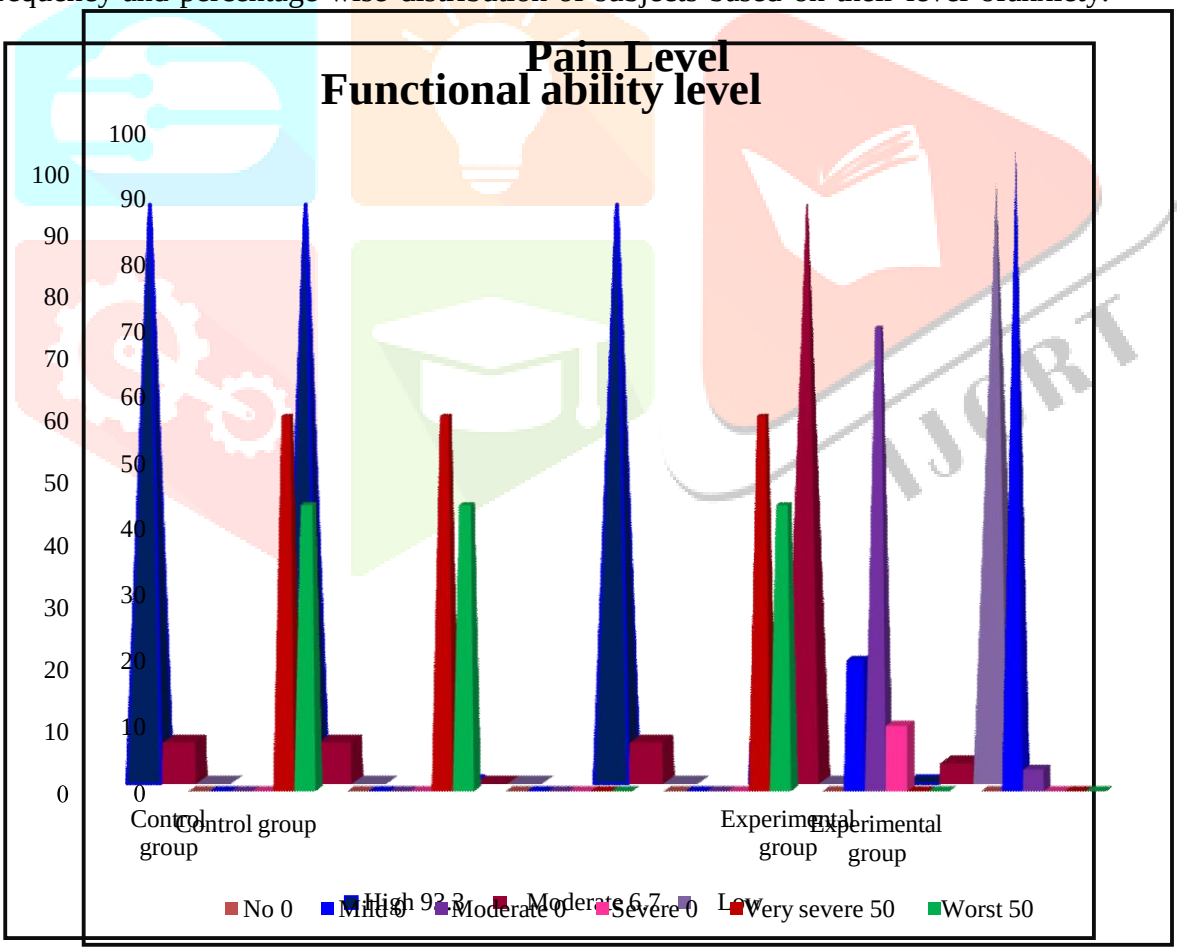
The findings were presented in the form of tables and diagrams under the following series;

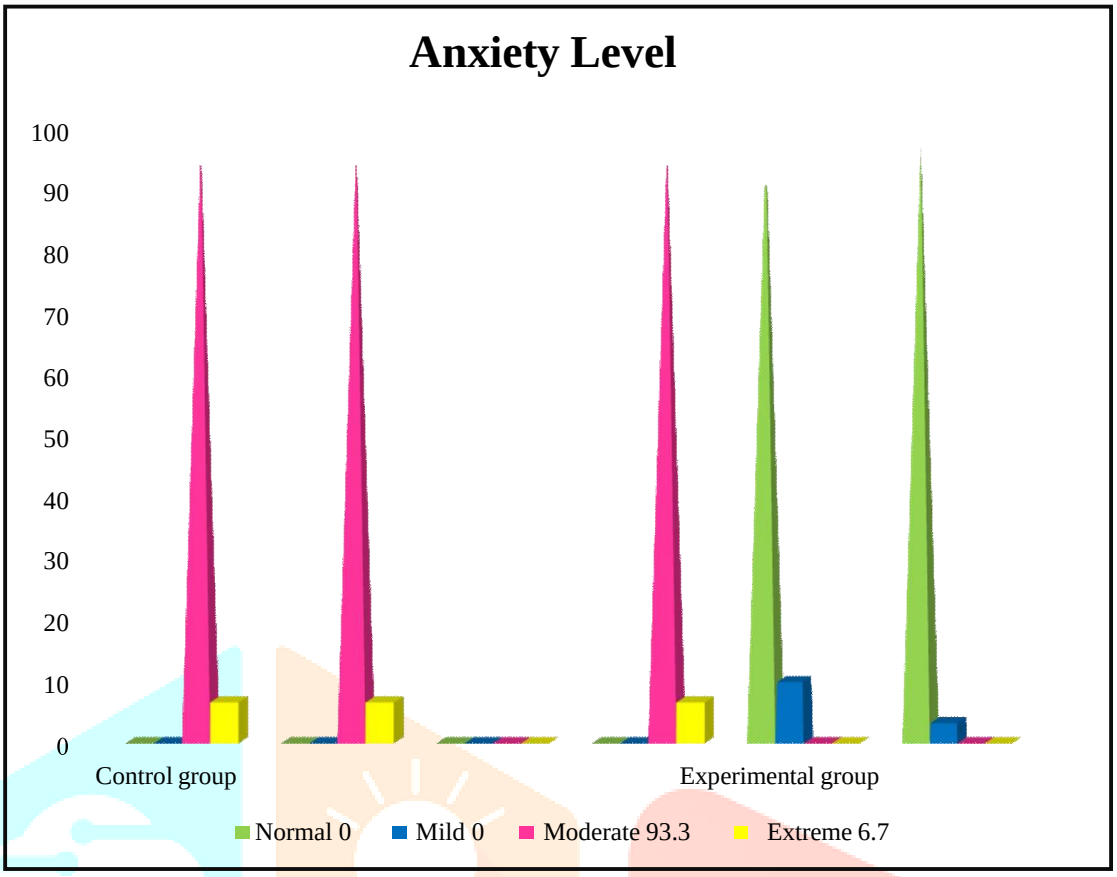
SECTION A: Data on description of demographic variables among patientundergoing cardiac surgery in the control and experimental group.

1. Frequency and percentage distribution of cardiac patients based on theirdemographic variables in the control and experimental group.

SECTION B: Distribution to assess the impact of preoperative comprehensive nursing interventions on postoperative outcome patients undergoing cardiac surgery patients.

1. Frequency and percentage wise distribution of subjects based on theirfunctional ability level.
2. Frequency and percentage wise distribution of subjects based on their level ofpain.
3. Frequency and percentage wise distribution of subjects based on their level ofanxiety.





DISCUSSION

The discussion was solely based on the objectives and hypotheses specified in this present study.

The first objective of this study was to assess the postoperative outcome among patients undergoing cardiac surgery in the control and experimental group.

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 (21.47±1.96) greater than control group post- test mean score (47.57±2.33) with the mean score difference of 39.

These findings were supported by the study conducted by Ping Guo MSc (2012) 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 Klopper, Hanekom and Faure, (2006) 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 (21.47±1.96) was greater than the control group post -test mean score
difference of (47.57±2.33) 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 Terry p Haines, Elizabeth H Skinner (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 C. M. Shuldham, S. Fleming and H. Goodman (2002) 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=0.09) and pain (P=0-48). or in depression (P=0.62) and wellbeing (`worn out' P=0.11); 'tense and uptight' P=0-29) 6 months after operation. This was also the case 3 days after coronary artery surgery. There was

a significant difference in length of hospital stays (P=0.01) with the experimental group.

The findings were supported by the study was conducted by Fitzsimons. (2000), Gallagher & McKinley (2007). who stated that the Patients waiting 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 was 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 ($p<000.1$) 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 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% were inadequate recovery. The result was higher with preoperative education ($p<000.1$); Therefore, the research Hypothesis (H_1) 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.

SUMMARY

The focus of the study was to assess the impact of preoperative comprehensive nursing intervention on post-operative outcome among patients undergoing cardiacsurgery in Selected hospital in Bareilly

The objective of this study is

1. To assess the post-operative outcome among patients undergoing cardiac surgery in the control and experimental group.
2. To determine the effectiveness of comprehensive nursing intervention on post- operative outcome among patients undergoing cardiac surgery between the control group and experimental group.
3. To associate the post-operative outcome of patient undergoing cardiac surgery with their demographic variable. indicates that the difference in considered to be highly significant.

The finding reveals that all over all unpaired "t" values was 46.95, which showed a highly statistically significant at $p<0.001$ level. Here, it was inferred that the comprehensive nursing intervention highly significant effective in improving the post operative outcome among cardiac undergoing patients in experimental group compared to the control group.

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.

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