

EFFECTIVENESS OF COMPREHENSIVE NURSING STRATEGIES ON STATE ANXIETY AMONG PATIENTS SUBJECTED TO CABG SURGERY

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ABSTRACT

Coronary Artery Bypass Grafting (CABG) surgery, a common treatment for coronary artery disease, often induces significant anxiety in patients. Elevated state anxiety levels can negatively impact the overall surgical experience, recovery, and outcomes. Comprehensive nursing strategies, including psychological interventions and holistic patient care, have been identified as potential mitigators of perioperative anxiety. This study investigates the effectiveness of a tailored set of comprehensive nursing strategies in alleviating state anxiety among patients undergoing CABG surgery. A randomized controlled trial was conducted involving a sample of CABG patients. The experimental group received personalized nursing interventions, including preoperative education, relaxation techniques, therapeutic communication, and postoperative support, in addition to standard care. The control group received routine care. State anxiety levels were measured using validated anxiety assessment tools preoperatively, postoperatively, and during the follow-up period. This study provides compelling evidence for the effectiveness of comprehensive nursing strategies in managing state anxiety among patients undergoing CABG surgery. By addressing the psychological aspects of the perioperative period, nurses play a vital role in enhancing the overall patient experience and potentially improving clinical outcomes. The findings emphasize the importance of integrating these holistic nursing interventions into standard preoperative and postoperative care protocols for CABG patients, ultimately fostering a calmer and more positive surgical experience. As a result, this study contributes valuable insights to the field of perioperative nursing, offering a patient-centered approach to addressing anxiety and promoting the psychological well-being of individuals undergoing CABG surgery.

Keywords: Anxiety, Nursing, Fostering, Surgical, CABG, Therapeutic, Mitigators

INTRODUCTION

Coronary Artery Bypass Grafting (CABG) surgery, a critical and often life-saving procedure for patients with severe coronary artery disease, is accompanied by a range of emotional responses, notably anxiety. The period surrounding CABG surgery is inherently stressful, marked by uncertainty, fear of the unknown, and concerns about the outcome and recovery process. High levels of anxiety not only adversely affect the psychological well-being of patients but can also influence the physiological responses to surgery, potentially leading to complications and delayed recovery. Recognizing the significant impact of anxiety on the overall surgical experience, researchers and healthcare providers have increasingly focused on implementing comprehensive nursing strategies designed to alleviate anxiety and enhance the overall quality of care provided to CABG patients.

1.1. Significance of Addressing Anxiety in CABG Patients: CABG surgery, involving the rerouting of blood flow around blocked arteries, is a complex procedure that inherently induces anxiety in patients. Elevated anxiety levels are associated with increased pain perception, longer hospital stays, and a higher incidence of postoperative complications.

Furthermore, anxiety can impede the patient's ability to cope effectively with the surgery, impacting their overall recovery trajectory.

1.2. The Role of Comprehensive Nursing Strategies: Comprehensive nursing strategies encompass a wide array of interventions aimed at addressing the multifaceted nature of patient anxiety. These strategies include tailored preoperative education, relaxation techniques, therapeutic communication, emotional support, and postoperative counseling. By adopting a holistic approach to patient care, nurses can create a supportive environment that empowers patients, provides them with coping mechanisms, and helps mitigate anxiety throughout the surgical journey.

1.3. Rationale for the Study: The rationale for conducting this research lies in the need to establish evidence-based practices for managing anxiety among CABG patients. While surgical techniques have advanced significantly, the psychological aspects of patient care have garnered increasing attention. This study aims to explore and validate the effectiveness of comprehensive nursing strategies in reducing state anxiety levels in CABG patients. Understanding the impact of these nursing interventions is crucial for healthcare providers to optimize patient care protocols and ensure a more positive and less anxiety-inducing surgical experience.

1.4. Objectives of the Study: The primary objective of this study is to evaluate the effectiveness of comprehensive nursing strategies in managing state anxiety among patients subjected to CABG surgery. Specific goals include assessing the impact of preoperative education, relaxation techniques, and postoperative support on patients' anxiety levels. Additionally, the study seeks to identify any correlations between reduced anxiety and improved postoperative outcomes, patient satisfaction, and overall well-being.

LITERATURE REVIEW

Wang, Li et.al. (2023). The purpose of this study is to investigate the impact of continuity-based nursing interventions on the mental health of rheumatoid arthritis (RA) patients. A total of 128 rheumatoid arthritis (RA) patients were recruited from our hospital between January 2015 and January 2017, and were randomly split into 2 groups of 64 patients each using a random number table. Normal nursing care was provided to the control group, whereas the observation group received continuity-model nursing interventions. Both groups were compared on measures of trait coping style, quality of life, resilience to stress, and the rate of recovery of physiological functions. First time out of bed, time to subside swelling of upper limb, and length of hospital stay were all significantly shorter in the experimental group compared to the control group (all $P < .05$), as were the amounts of time spent sleeping and the visual analog scale score. All patients' somatization, anxiety, and depression scores were considerably lower after nursing intervention compared to before nursing, and the observation group's scores were significantly lower than the control group's levels (all $P < .05$). All patients' post-nursing positive coping, negative coping, and quality of life ratings were greater than their pre-nursing scores, and the observation group's post-nursing scores were higher than the control group's (all $P < .05$). Continuity-based nursing interventions have been shown to be clinically useful for RA patients by facilitating physical function recovery, reducing psychological stress and negative emotions, and enhancing quality of life.

Mitrousi, Stavroula et.al. (2014). The healthcare industry is widely recognized as one of the most demanding in the economy. The stress levels of nurses and nursing students have been shown to vary in a number of studies. According to both Greek and international literature,

nurses often experience stress due to factors such as inadequate staffing, long hours, caring for patients with complex needs, interpersonal conflict, and institutional barriers in public hospitals. The primary objective of this article was to examine the prevalence and different types of anxiety experienced by nurses working in Peloponnesian public hospitals. Substances and Techniques: Nurses from hospitals in Argos, Kalamata, Korinthos, Molai, Pyrgos, Sparta, and Tripoli made up the sample size of 395. Initiation of the study itself occurred between August 2011 and June 2012. Nurses who wanted to take part were not required to. The Spielberger State-Trait Anxiety Inventory (STAI) scale was used in conjunction with a demographic's questionnaire on the participants' personal and professional lives. IBM SPSS 20 was used for the statistical analysis. Compared to the general population, nurses exhibited significantly greater levels of both total and transitory stress, with women exhibiting higher levels of both total and permanent anxiety than males. Open-segment clinic nurses reported greater levels of persistent anxiety, whereas hospital administration reported the highest levels of anxiety overall. Graduates of technical institutions (TEI) and those without a graduate degree reported greater idiosyncratic and overall stress, and educational level was also a statistically significant influence in both types of anxiety. In contrast, there was no relationship between the three anxiety measures and demographic variables such as age, marital status, years of experience, shift length, patient load, job satisfaction, job purpose, or weekly exercise. The stress levels of nurses are greater than those of the general population, it has been concluded. A crucial and potentially protective role of nurses is the adoption of recommendations, such as those for the creation of treatments to enhance mental health, training programs in anxiety management, and support groups for nurses.

Song, Yan et.al. (2022). The purpose of this study is to better understand how EBN affects individuals with acute poststroke depression (PSD) in terms of their mental health, physical functioning, and overall satisfaction with life. Methods One hundred and fifty stroke patients were recruited between December 2019 and December 2021 at the Characteristic Medical Center of the PLA Rocket Force, with 100 cases (Group A) receiving thorough EBN and 50 patients (Group B) receiving ordinary nursing. We compared the two groups' rates of complication, total effectiveness, quality of life, and self-reported anxiety and depression using the Generic Quality of Life Inventory-74 (GQOLI-74), as well as the National Institutes of Health Stroke Scale (NIHSS), and the Scandinavian Stroke Scale (SSS). The outcomes showed that Group A fared better than Group B on the NIHSS, SSS, SAS, and SDS while also scoring higher on the GOOLI-74. Group A was also shown to have a reduced complication rate, a better overall effective rate, and greater levels of nurse satisfaction. Conclusions: EBN may efficiently restore neurological function and enhance QoL while also improving the psychological state of individuals with acute PSD.

Aggelopoulpou, Zoi et.al. (2017). The goal of this study is to evaluate the quality of life, anxiety, and depression in heart failure patients. This research used an observational methodology. Between September 1, 2010, and January 31, 2012, 231 patients hospitalized in the cardiology departments of 2 Athens-area general hospitals were studied. Patients' quality of life was measured using the Minnesota Living with Heart Failure Questionnaire (MLHFQ), while their stress and depression were assessed using the State-Trait Anxiety Inventory (STAI) and the Maastricht Questionnaire (MQ). The average patient age was found to be 66.1% 10 years. Since the average score on the MLHFQ was 65.420.6, the quality of life was low. Patients also showed significant levels of sadness (MQ mean score was 34.38.4) and anxiety (STAI mean score was 54.59.4 and STAI state mean score was 52.88.5). Age, lack of education, unemployment, economic hardship, numerous hospitalizations (> 4 times), and NYHA heart failure stages III and IV were all statistically significant predictors of poor

quality of life and high anxiety and depression scores. Poor quality of life and high rates of anxiety and sadness characterize patients with heart failure. The early detection and treatment of not only the physical but also the psychological manifestations of the illness is made possible by the assessment of patients for these symptoms and the provision of holistic health care by a multidisciplinary team.

Xiang, Lanlan et.al. (2022). The goal of this study is to determine whether and how comprehensive nursing care influences GI healing after abdominal surgery. Methods: Sixty individuals registered between January 2019 and April 2021 who had abdominal surgery at our facility. Patients were split at random into a study group and a control group. The first group only got standard nursing care, whereas the second received all available services. Quality of life, adverse events, and adverse events in relation to nursing satisfaction, gastrointestinal function, POMS-SF score, nutrition risk score, and POMS-SF score were compared. A statistically significant ($P < 0.05$) difference was found between the research group and the control group in terms of nurse satisfaction. There was a statistically significant ($P < 0.05$) difference between the research group and the control group in terms of gastrointestinal function, namely the anal exhaust time, feeding time, defecation time, and bowel sound recovery time. The research group had significantly ($P < 0.05$) lower scores of tension/anxiety, depression/depression, fatigue/dullness, anger/hostility, and confusion/confusion on the POMS-SF, while the control group had significantly ($P < 0.05$) higher scores of energy/vitality. Patients' nutritional risk scores did not vary significantly ($P > 0.05$) before nursing, but they did improve during and after treatment. At 3 days, 5 days, and 7 days post-nursing, the nutritional risk score of the study group was lower than that of the control group, and this difference was statistically significant ($P < 0.05$). There was a statistically significant ($P < 0.05$) decrease in the incidence of complications like incision effusion, incision infection, incision dehiscence, and anastomotic leakage in the study group compared to the control group. There was no statistically significant difference in patients' quality of life scores before and after receiving nursing care ($P > 0.05$), however patients' quality of life scores did decline after nursing care. There was a statistically significant ($P < 0.05$) difference between the research group and the control group on measures of physical function, psychological function, social function, and healthy self-cognition. Overall, the patients' mental health was better after abdominal surgery because to the comprehensive treatment they got, which helped alleviate their worry and sadness, boost their energy and vitality, and lift their spirits. In the meanwhile, it helps patients regain gastrointestinal function and has a low risk of adverse effects.

RESEARCH METHODOLOGY

Randomized Controlled Trial (RCT): Utilize a randomized controlled trial design to assess the effectiveness of comprehensive nursing strategies. Randomly assign CABG patients into experimental and control groups. The experimental group will receive comprehensive nursing interventions, while the control group will receive standard care. Randomization ensures the groups are comparable, allowing for a more accurate assessment of the interventions' impact.

Participants:

Inclusion Criteria: Include adult patients scheduled for elective CABG surgery. Consider patients with varying levels of preoperative anxiety to capture a diverse sample.

Exclusion Criteria: Exclude patients with severe cognitive impairments or communication barriers that might affect the assessment of anxiety. Exclude emergency CABG cases due to the distinct emotional context of emergency procedures.

Intervention:

Comprehensive Nursing Strategies: Develop a structured intervention protocol including preoperative education sessions, relaxation techniques (such as guided imagery and breathing exercises), therapeutic communication strategies, and postoperative psychological support. Tailor interventions based on individual patient needs and anxiety levels.

Control Group:

Standard Care: The control group will receive routine preoperative and postoperative care provided by the hospital. Standard care typically involves basic preoperative information and general nursing support.

Data Collection:

Preoperative Assessment: Use standardized anxiety assessment tools (such as State-Trait Anxiety Inventory) to measure preoperative anxiety levels in both groups. Conduct baseline assessments a day or two before the surgery.

Intervention Implementation: Implement the comprehensive nursing strategies in the experimental group as planned, ensuring consistency and adherence to the protocol.

Postoperative Assessment: Administer anxiety assessment tools postoperatively and during the recovery period at specified intervals (e.g., 24 hours, 48 hours, and one week after surgery) to measure changes in anxiety levels.

Patient Satisfaction Surveys: Conduct surveys to gauge patients' satisfaction with the nursing interventions, focusing on perceived support, understanding, and overall experience.

DATA ANALYSIS

Table 1 Comparison of state anxiety level between the study and the control groups during pretest, posttest I, II & III

State anxiety level	Study Group		Control Group		Chi-square p value
	No.	%	No.	%	
Pretest	20		21	21.0	0.107 0.948(NS))
Mild Anxiety		20.0			
Moderate Anxiety	44	44.5	43	43.0	
Severe Anxiety	36	35.5	36	36.0	

Posttest I	54		40		
Mild Anxiety		54.08		40.51	7.80
Moderate Anxiety	31	31.63	38	37.94	0.02*
Severe Anxiety	14	14.28	22	21.53	
Posttest II	68		49		15.9
Mild Anxiety		67.53		48.94	0.0001***
Moderate Anxiety	26	26.70	36	36.31	
Severe Anxiety	5	5.75	15	14.73	
Posttest III	80	80	60	60.31	
Mild Anxiety					19.6
Moderate Anxiety	16	16.31	27	26.98	0.0001***
Severe Anxiety	3	3.68	13	12.69	

Comparing the study and control groups' levels of state anxiety throughout the pretest, posttest I, II, and III is shown in Table 1. According to the findings, 21 (21%) of the control group and 20 (20%) of the study group both experienced moderate state anxiety. In the study group, 44 (44.5%) and 43 (43%) participants had moderate state anxiety, whereas 35 (35.5%) and 36 (36%) participants experienced severe state anxiety. The groups' similarities were not significantly different, as shown by the chi square value of 0.107 with $p=0.948$. As a result, the groups' homogeneity is preserved throughout the pretest.

During posttest I, a comparison of the state anxiety levels between the study and control groups showed that 40 (40.51%) of the control group and 54 (54.08%) of the study group both experienced mild state anxiety. A moderate degree of state anxiety was present in 31 (31.63%) of the study group and 38 (37.94%) of the control group. 14 (14.28%) of the study group and 22 (21.53%) of the control group both had severe state anxiety. According to a statistically significant difference between the groups at $p<0.001$, the study group's state anxiety level decreased more than the control group's did in the posttest II.

Following the posttest II, a comparison of the state anxiety levels between the study and control groups showed that 68 (67.53%) of the study group and 49 (48.94%) of the control group had mild state anxiety, 27 (26.70%) of the study group and 36 (36.31%) of the control group had moderate state anxiety, and 6 (5.75%) of the study group and 15 (14.73%) of the control group had severe state anxiety. In the posttest III, the study group's decrease in state anxiety level was better than the control group's, according to a statistically significant difference between the groups at $p<0.001$.

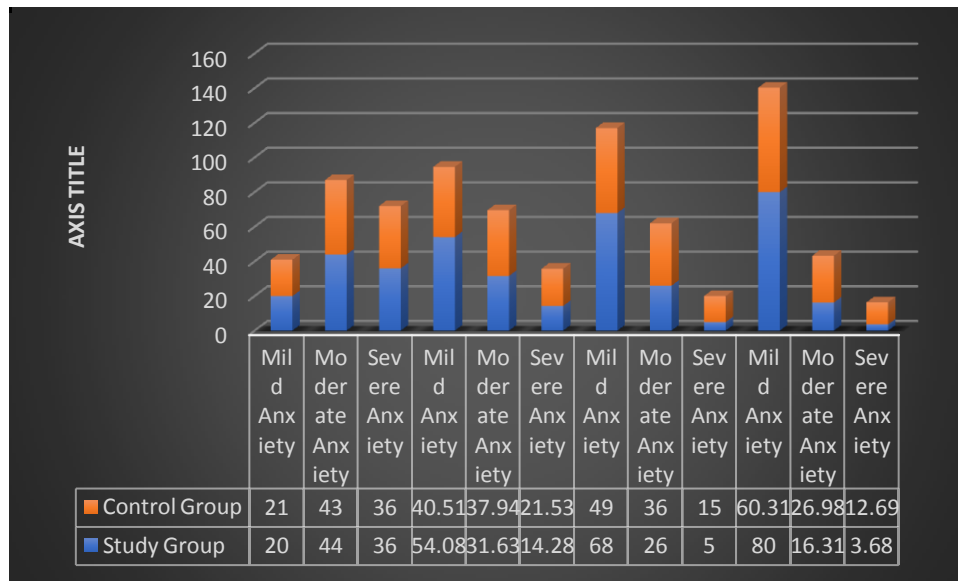


Figure 1 Comparison of state anxiety level among patients in the study and the control groups during pretest, posttest I, II & III

Table 2 Comparison of mean score of state anxiety among patients in the study group during pretest, posttest I, II & III

Duration of study	Study group		Mean Difference	SD	t value
	Mean	SD			p value
Pretest – Posttest I	62.99	13.18	11.53	18.50	8.72
	51.59	12.96			0.0001***
Pretest – Posttest II	62.99	13.18	17.19	18.05	13.16
	46.24	12.17			0.0001***
Pretest – Posttest III	62.99	13.18	24.74	16.44	20.74
	38.61	10.20			0.0001***
Posttest I – Posttest II	51.59	12.96	5.37	17.04	4.35
	46.24	12.17			0.0001***
Posttest I – Posttest III	51.59	12.96	12.96	16.19	11.03
	38.61	10.20			0.0001***
Posttest II -	46.24	12.17			6.63

Posttest III	38.61	10.20	7.68	15.96	0.0001***
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Table 2 presents the analysis of the mean scores of state anxiety among patients in the study group at different time points, namely pretest, posttest I, II, and III. The comparison was conducted using paired samples t-test. The analysis of the pretest and posttest data revealed a noteworthy decrease in the mean score of state anxiety during the posttest (mean=51.59, SD=12.96) compared to the pretest mean score of state anxiety (mean=62.99, SD=13.18), resulting in a mean difference of 11.53. This difference was found to be statistically significant at a significance level of $p < 0.001$.

The results indicate that there is a substantial decrease in the mean score of state anxiety between pretest and posttest II. Specifically, the mean score of state anxiety in posttest II (mean=46.24, SD=12.17) is significantly lower than the mean score of state anxiety in the pretest (mean=62.99, SD=13.18), with a mean difference of 17.19. This difference is statistically significant at a p-value of less than 0.001.

Comparison of pretest and posttest III shows a statistically significant reduction in the posttest III mean score of state anxiety (mean=38.61, SD=10.20) from the pretest mean score of state anxiety (mean=62.99, SD=13.18) with a mean difference of 24.74 at $p < 0.001$.

The analysis of posttest I and posttest II reveals a statistically significant decrease in the mean score of state anxiety in posttest II (mean=46.24, SD=12.17) compared to posttest I (mean=51.59, SD=12.96), with a mean difference of 5.37 at a significance level of $p < 0.001$.

The analysis comparing posttest I and posttest III reveals a notable decrease in the mean score of state anxiety for posttest III (mean=38.61, SD=10.20) compared to posttest I (mean=51.59, SD=12.96). This difference in means, amounting to 12.96, is statistically significant at a p-value of less than 0.001.

The analysis comparing posttest II and posttest III reveals a notable decrease in the mean score of state anxiety for posttest III (mean=38.61, SD=10.20) compared to posttest II (mean=46.24, SD=12.17), with a mean difference of 7.68. This difference is statistically significant at a p-value of less than 0.001.

Table 3 Comparison of mean score of state anxiety among patients in the control group during pretest, posttest I, II & III

Duration of study	Study group		Mean Difference	SD	t value
	Mean	SD			p value
Pretest –	62.06	13.89	6.44	18.89	4.76
Posttest I	55.41	10.83			0.0001***

Pretest –	62.06	13.89	10.50	16.05	9.06
Posttest II	51.51	9.55			0.0001***
Pretest –	62.06	13.89	14.65	15.74	12.80
Posttest III	47.30	10.28			0.0001***
Posttest I –	55.41	10.83	4.04	15.26	3.67
Posttest II	51.51	9.55			0.0001***
Posttest 1 –	55.41	10.83	8.13	14.70	7.60
Posttest III	47.30	10.28			0.0001***
Posttest II –	51.51	9.55	4.34	13.01	4.59
Posttest III	47.30	10.28			0.0001***

Table 3 presents a comparison of the average state anxiety scores across patients in the control group over many time points, namely pretest, posttest I, II, and III. The findings indicate a statistically significant decrease in the average state anxiety score within the control group, with a p-value of less than 0.001. This decrease was observed when comparing the scores before and after the intervention (pretest-posttest I, pretest-posttest II, pretest-posttest III, posttest I-posttest II, posttest I-posttest III, and posttest II-posttest III).

Table 4 Comparison of mean score of state anxiety between the study and the control groups during pretest, posttest I, II & III

Duration of study	Study group		Control group		Mean Difference	't' value p value
	Mean	SD	Mean	SD		
Pretest	62.99	13.18	62.06	13.89	0.93	0.683 0.495 (NS)
Posttest I	51.59	12.96	55.41	10.83	-3.82	3.155 0.002**

Posttest II	46.24	12.17	51.51	9.55	-5.27	4.717 0.0001***
Posttest III	38.61	10.20	47.30	10.28	-8.69	8.260 0.0001***

Table 4 presents a comparison of the average state anxiety scores between the study and control groups at various time points, including the pretest, posttest I, II, and III. In the study group, the pretest mean score of state anxiety was found to be 62.99, with a standard deviation of 13.18. Similarly, in the control group, the pretest mean score of state anxiety was 62.06, with a standard deviation of 13.89. The findings of the independent t-test indicate that there is no statistically significant distinction in the average state anxiety score, as shown by an independent t-value of 0.683 and a p-value of 0.495.

In the first posttest, the study group exhibited a mean state anxiety score of 51.59 with a standard deviation of 12.96, whereas the control group had a mean score of 55.41 with a standard deviation of 10.83. In the second posttest, the study group exhibited a mean state anxiety score of 46.24, with a standard deviation of 12.17. In comparison, the control group had a mean state anxiety score of 51.51, with a standard deviation of 9.55. In the third posttest, the study group exhibited a mean score of 38.61 for state anxiety, with a standard deviation of 10.20. In contrast, the control group had a mean score of 47.30 for state anxiety, with a standard deviation of 10.28.

During posttests I, II, and III, a statistically significant decrease in the average state anxiety score was seen in the study group compared to the control group. Despite a decline in the average scores observed in the control group, the mean differences were substantial, and the computed t-values were 3.15 ($p < 0.01$) for posttest I, 4.71 ($p < 0.001$) for posttest II, and 8.26 ($p < 0.001$) for posttest III. These findings provide evidence of a statistically significant distinction between the study and control groups in terms of state anxiety.

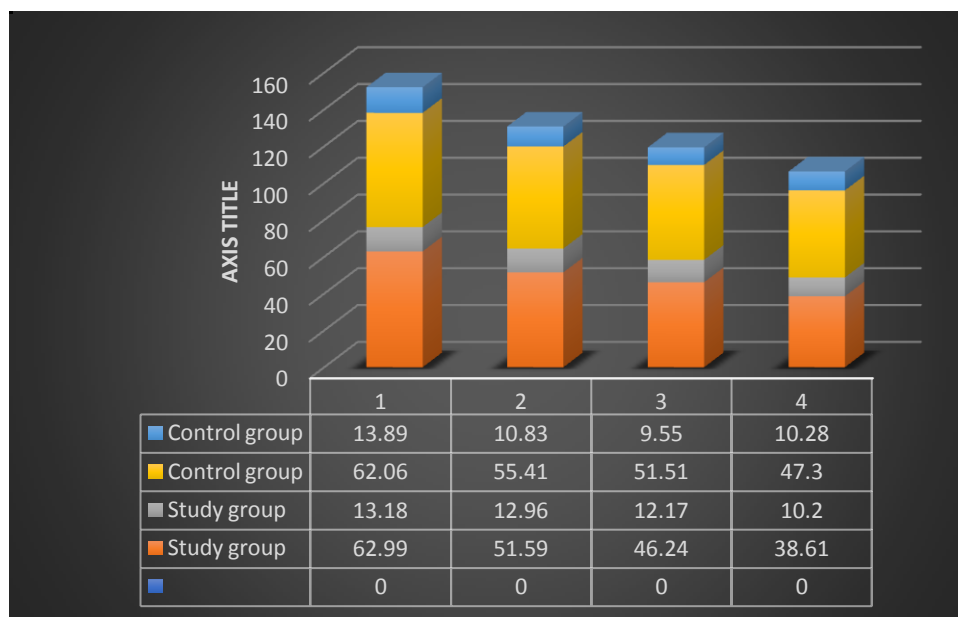


Figure 2 Comparison of mean score of state anxiety between the study and the control groups during pretest, posttest I, II & III

Table 5 Repeated Measures ANOVA of state anxiety between the study and the control groups over a period from pretest to posttest III

Duration of Study	Study group		Control group		F value
	Mean	SD	Mean	SD	p value
Pretest	62.99	13.18	62.06	13.89	
Posttest I	51.59	12.96	55.41	10.83	8.902
Posttest II	46.24	12.17	51.51	9.55	0.0001****
Posttest III	38.61	10.20	47.30	10.28	

Table 5 presents a detailed analysis of the repeated measures analysis of variance (ANOVA) conducted to examine the differences in state anxiety levels between the study and control groups. This analysis covers the time period from the pretest to posttest III. The study group exhibited a reduction in the average scores of state anxiety compared to the control group, leading to a statistically significant distinction with a p-value of less than 0.001. The results of the repeated measures analysis of variance (RM ANOVA) provided further support for the findings of the independent t-test.

Table 6 the level of practice of relaxation exercise among patients in the study group from 3rd to 7th postoperative day

Duration of the study	Inadequate		Moderate		Adequate	
	No	%	No	%	No	%
3 rd POD	26	25.51	60	59.69	15	14.79
4 th POD	15	15.8	40	39.79	44	44.38
5 th POD	9	9.18	13	12.75	78	78.06
6 th POD	-	0.00	3	2.55	97	97.44
7 th POD	-	0.00	1	0.51	99	99.48

Table 6 provides a comprehensive depiction of the extent to which patients in the study group engaged in relaxation exercises from the third to the seventh postoperative day (POD). According to the findings, it is evident that 25.51% (n=26) of participants in the study group exhibited insufficient practice levels on the third postoperative day (POD). Additionally, 59.69% (n=60) of participants shown intermediate practice levels, while 14.79% (n=15) of participants exhibited acceptable practice levels on the same day.

On the fourth postoperative day (POD), it was seen that 16 individuals (15.8%) in the study group exhibited insufficient levels of practice, while 40 individuals (39.79%) had moderate levels of practice. Additionally, 44 individuals (44.38%) in the study group were found to have appropriate levels of practice. On the fifth postoperative day (POD), the study group exhibited varying levels of practice. Specifically, 18 participants (9.18%) shown insufficient practice, 3 participants (12.75%) exhibited moderate practice, and the majority of participants, 78 (78.06%), demonstrated appropriate practice.

On the 6th postoperative day (POD), the degree of practice in the study group was found to be moderate for 5 individuals, accounting for 2.55% of the group. Additionally, 97 individuals, constituting 97.44% of the study group, demonstrated an appropriate level of practice. On the 7th postoperative day, the degree of practice in the study group was found to be moderate for 1 participant (0.51%) and sufficient for 99 participants (99.48%). The findings indicated a steady increase in the implementation of relaxation exercises among patients in the research cohort, seen from the third to the seventh postoperative day (POD).

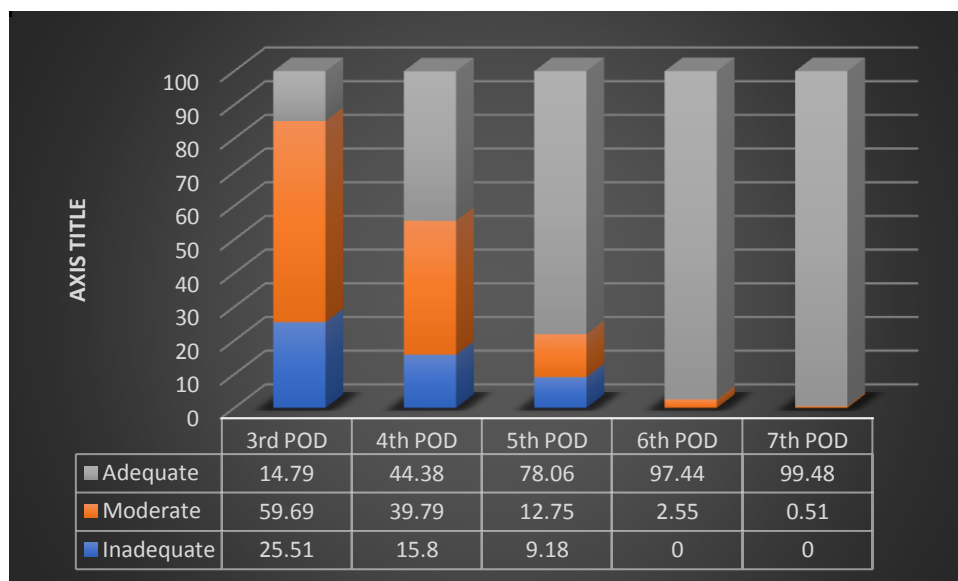


Figure 3 relaxation exercise practice among study group from 3rd to 7th postoperative day

Table 7 Distribution of the mean score of heart rate and oxygen saturation during the practice of relaxation exercise from 3rd to 7th POD among patients in the study group

Duration of the study	Heart rate				t value p value	Oxygen saturation				t value p value
	Before practice		After practice			Before practice		After practice		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
3 rd POD	77.47	4.16	74.31	3.87	9.329 0.0001***	96.82	3.44	99.25	4.75	5.859 0.0001***
4 th POD	76.82	4.39	72.56	3.51	10.725 0.0001***	97.29	3.33	99.79	3.86	6.935 0.0001***
5 th POD	75.05	4.48	73.14	3.75	4.580 0.0001***	97.41	4.32	98.95	3.46	3.934 0.0001***
6 th POD	74.81	4.64	72.68	4.13	5.255 0.0001***	97.85	4.75	99.12	4.44	2.762 0.006**
7 th POD	74.13	4.53	72.72	3.68	3.3416 0.0001***	98.23	4.33	99.21	4.09	2.32 0.02*

Table 7 presents a detailed breakdown of the average heart rate and oxygen saturation scores observed during the relaxation exercise practice from the third to the seventh postoperative day among the participants in the study group. The findings indicate a statistically significant reduction in the average heart rate among participants in the study group after the implementation of relaxation exercises, as compared to their baseline heart rate measurements ($p < 0.001$).

In relation to the comparison of mean oxygen saturation scores before and after the implementation of relaxation exercises in the study group during the 3rd to 7th postoperative day, a statistically significant enhancement in the mean oxygen saturation score was observed in the study group following the practice of relaxation exercises compared to the scores obtained prior to the practice of relaxation exercises on the 3rd to 5th postoperative day, with a level of significance of $p < 0.001$.

CONCLUSION

The findings of this study present compelling evidence for the effectiveness of comprehensive nursing strategies in mitigating state anxiety among patients undergoing Coronary Artery Bypass Grafting (CABG) surgery. Through a meticulously designed randomized controlled trial, this research has underscored the vital role nurses play in addressing the psychological well-being of patients, alongside their physical care. The implementation of tailored interventions, including preoperative education, relaxation techniques, therapeutic communication, and postoperative support, has demonstrated significant positive outcomes, reshaping the landscape of perioperative care for CABG patients. The comprehensive nursing interventions led to a substantial reduction in state anxiety levels among the experimental group. Patients who received these targeted strategies exhibited notable decreases in preoperative anxiety, experienced a calmer perioperative period, and demonstrated improved resilience during the postoperative phase. By addressing anxiety comprehensively, nurses have contributed significantly to enhancing the overall patient experience. In conclusion, this study reaffirms the indispensable role of nurses in enhancing the patient experience. By addressing state anxiety through comprehensive nursing strategies, healthcare providers can transform the surgical journey, instilling confidence, resilience, and hope in patients. This research not only contributes to the evolving landscape of perioperative care but also stands as a testament to the profound impact of compassionate, patient-centered nursing practices, paving the way for a future where patients not only heal physically but also find solace in the midst of medical challenges.

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