

## Comparison of Preoperative Counselling Versus Control on Anxiety Symptoms in Patients Undergoing Surgery Under General Anesthesia

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(Received, 24<sup>th</sup> July 2025, Accepted 8<sup>th</sup> November 2025, Published 30<sup>th</sup> November 2025)

**Abstract:** Preoperative anxiety is common among surgical patients, often leading to adverse psychological and physiological outcomes. Improving perioperative counseling may help reduce anxiety, particularly in healthcare settings where communication gaps and misconceptions about anesthesia are prevalent. **Objective:** To compare the effect of structured preoperative counseling combined with standard counseling versus standard counseling alone on anxiety symptoms in patients undergoing surgery under general anesthesia. **Methods:** This randomized controlled trial included 150 elective surgical patients aged 20–75 years with ASA I–II status at Hameed Latif Hospital, Lahore. Participants were randomized through lottery into two equal groups. Group A received structured counseling in addition to routine nursing-led counseling, while Group B received standard preoperative counseling alone. Anxiety was assessed one hour prior to surgery using Zung's Self-Rating Anxiety Scale (SAS). Data were analyzed using SPSS version 21, with independent sample t-tests applied at a significance level of  $p < 0.05$ . Age and gender stratification were performed to explore subgroup differences. **Results:** The mean anxiety score in Group A was significantly lower ( $49.24 \pm 14.87$ ) compared with Group B ( $61.25 \pm 15.02$ ) ( $p = 0.000$ ). Anxiety reduction remained statistically significant across most age categories except in the 51–65 year group. Both male and female patients demonstrated lower anxiety levels after structured counseling compared to standard counseling alone. **Conclusion:** Structured preoperative counseling significantly reduced anxiety scores among surgical patients compared to standard counseling, demonstrating its potential to improve perioperative psychological wellbeing. Enhanced communication may be particularly valuable in settings where patients experience heightened procedural apprehension.

**Keywords:** Preoperative anxiety; structured counseling; patient education; general anesthesia; perioperative care; randomized controlled trial.

**[How to Cite:** Khan ZU, Faqooq U, Tariq SMA, Butt MM, Butt MUI, Qureshi AM. Comparison of preoperative counselling versus control on anxiety symptoms in patients undergoing surgery under general anesthesia. *Biol. Clin. Sci. Res. J.*, 2025; 6(11): 57-60. doi: <https://doi.org/10.54112/bcsrj.v6i11.2089>

### Introduction

Preoperative anxiety is a significant concern for patients undergoing surgery, especially when general anesthesia is involved. Anxiety before surgical procedures can lead to adverse postoperative outcomes, including heightened perception of pain, increased requirements for analgesia, prolonged recovery times, and negative emotional and psychological states postoperatively (1, 2, 3). The incidence of preoperative anxiety is reported to be high, affecting nearly 53.7% of patients preparing for surgery, highlighting the urgent need for effective management strategies (4, 5).

In recent years, there has been growing recognition of the impact of preoperative counseling on alleviating these anxiety symptoms. Various interventions, including psychological counseling, preoperative education, and multimedia preparations, have been shown to significantly reduce anxiety levels in surgical patients. For instance, a study revealed that patients receiving educational content via multimedia experienced significant declines in anxiety and depression measures, suggesting that informative interventions can empower patients and address their concerns about impending procedures (2, 5, 6). Another randomized clinical trial highlighted the effectiveness of structured preoperative counseling, particularly in patients undergoing major surgeries, showing

that this intervention not only reduced anxiety scores but also improved overall satisfaction with the surgical experience (3, 5).

Furthermore, methods such as music therapy and visual aids during preoperative counseling have demonstrated effectiveness in creating a calmer preoperative environment. These non-pharmacological techniques have been reported to significantly lower anxiety levels, improving patients' perceptions of their surgery and promoting better postoperative recovery (4, 7). Additionally, technology such as virtual reality has emerged as an innovative strategy for preoperative education, showing promising results in anxiety reduction (8, 9).

The context of the Pakistani population is particularly relevant in this discussion due to cultural attitudes towards surgery and general anesthesia that can contribute to heightened anxiety levels. Incorporating structured preoperative counseling specifically tailored for patients in Pakistan could address their unique fears and misconceptions related to surgical procedures. Educational interventions could be designed to include cultural sensitivities, involving community health workers to enhance understanding and reassurance. Given the prevailing healthcare landscape, in which anxiety and surgery-related fears can overwhelm patients, improving preoperative communication can lead to better health outcomes and a more positive surgical experience for the Pakistani population.

Methodology

This randomized controlled trial was carried out in the Department of Anesthesia at Hameed Latif Hospital, Lahore, over a 6-month period from June to December 2024, following approval of the research synopsis. A total of 150 patients scheduled for elective surgery under general anesthesia were enrolled using non-probability consecutive sampling once written informed consent was obtained. Eligible participants were adults aged 20 to 75 years of either gender with an ASA physical status of I or II. Patients unwilling to participate or with documented neurological deficits or chronic pain syndromes were excluded to avoid confounding effects on anxiety perception.

After baseline demographic profiling and verification of inclusion criteria, participants were randomly allocated into two equal groups using a lottery method. In the intervention arm, a structured counseling session was conducted by the principal researcher in addition to routine preoperative counseling normally delivered by designated nursing staff. This structured session focused on the nature of anesthesia, expected sensations, possible intraoperative and postoperative events, and prognosis of surgery, aiming to address knowledge gaps, fears, and concerns. The control group received only the standard hospital protocol-based preoperative counseling administered by trained nursing staff without additional education or structured communication.

Approximately one hour before surgery, anxiety was assessed in all patients using Zung’s Self-Rating Anxiety Scale (SAS), a validated instrument with scores ranging from 20 to 80. The tool was administered directly by the researcher to ensure consistency in scoring. All patients underwent surgery under general anesthesia according to anesthetic protocols determined by the department. After completion of the procedure, patients were transferred to the post-anesthesia care unit for stabilization and discharged once clinically appropriate. All primary data including demographic details, surgical category, ASA classification, randomization group, and anxiety scores were charted prospectively in a standardized proforma.

Data analysis was performed using IBM SPSS version 21. Quantitative variables, including age and mean anxiety scores, were summarized as

means with standard deviations, whereas categorical variables such as gender, ASA status, and surgical type were presented as frequencies and percentages. Between-group comparisons of mean anxiety scores were executed using an independent samples t-test, applying a significance threshold of  $p < 0.05$ . In order to explore potential modifiers, anxiety scores were stratified by age group and gender followed by post-stratification independent samples t-tests. The statistical approach ensured robust comparison of psychological outcomes attributable to structured counseling relative to standard preoperative education.

Results

A total of 150 patients were enrolled equally into structured plus standard counseling (Group A) and standard counseling alone (Group B). The mean age was  $45.64 \pm 15.98$  years in Group A and  $50.09 \pm 16.80$  years in Group B, with age ranging from 20 to 75 years. Slightly more females than males were present in Group B, while gender proportions remained comparable between groups. Similarly, ASA I and ASA II status was almost evenly balanced across the two groups (Table 1).

The type of procedures performed varied across orthopedic, abdominal, spinal, urological, and otolaryngology categories, with laparoscopic cholecystectomy and spinal surgeries being the most frequent interventions overall. Full distribution is presented in the surgical procedure table (Table 2).

A statistically significant reduction in mean anxiety scores was noted in Group A ( $49.24 \pm 14.87$ ) compared to Group B ( $61.25 \pm 15.02$ ), confirming the beneficial effect of structured counseling prior to surgery ( $p = 0.000$ ) (Table 3).

Age-stratified comparisons revealed significantly lower anxiety among patients in Group A across all age brackets except the 51–65 year group, where reduction was not statistically significant. Gender-based stratification showed lower anxiety scores in both males and females receiving structured counseling, indicating a consistent effect across sex categories (Table 4).

Table 1. Demographic and Clinical Characteristics of Study Participants (N = 150)

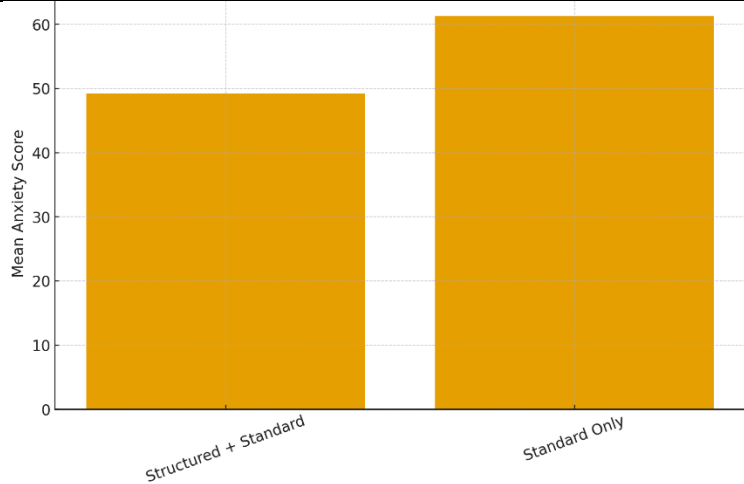
Variable	Group A	Group B
Mean Age (years)	45.64 ± 15.98	50.09 ± 16.80
Minimum–Maximum Age	20–74	20–75
Male, n (%)	39 (52.0)	34 (45.3)
Female, n (%)	36 (48.0)	41 (54.7)
ASA-I, n (%)	33 (44.0)	35 (46.7)
ASA-II, n (%)	42 (56.0)	40 (53.3)

Table 2. Distribution of Surgical Procedures Performed

Common Procedure Category	Group A	Group B	Total
Laparoscopic cholecystectomy	18	16	34
Discectomy / spinal procedures	14	21	35
Orthopedic surgeries (major)	10	6	16
Abdominal surgeries	7	3	10
Urological procedures	2	1	3
Various other procedures	24	28	52
Total	75	75	150

Table 3. Comparison of Mean Anxiety Scores Between Treatment Groups

Variable	Group A	Group B
Mean Anxiety Score	49.24 ± 14.87	61.25 ± 15.02
Minimum	25	37
Maximum	74	85
p-value	0.000	



**Figure 1:** Comparison of Mean Anxiety Scores Between Structured Counseling vs Standard Counseling Alone

**Table 4. Stratified Analysis of Mean Anxiety Scores by Age and Gender**

Variable	construct	Group A Mean ± SD	Group B Mean ± SD	p-value
Age Group (years)	20–35	47.69 ± 15.19	61.94 ± 15.74	0.006
	36–50	49.43 ± 14.67	62.65 ± 14.61	0.005
	51–65	53.17 ± 13.57	59.27 ± 14.91	0.214
	>65	46.25 ± 17.01	61.05 ± 15.87	0.023
Gender	Male	52.00 ± 15.17	61.52 ± 14.38	0.008
	Female	46.25 ± 14.14	61.02 ± 15.71	0.000

Discussion

The results of our study provide evidence regarding the efficacy of structured counseling in reducing preoperative anxiety compared to standard counseling alone. Our findings indicate a statistically significant reduction in mean anxiety scores in Group A (structured counseling plus standard counseling) compared to Group B (standard counseling only), with mean scores of  $49.24 \pm 14.87$  and  $61.25 \pm 15.02$  respectively ( $p = 0.000$ ). This aligns with findings from recent literature, which emphasize that comprehensive preoperative interventions can alleviate anxiety among surgical patients.

In a study conducted by Parveen et al. Parveen et al. (10), it was indicated that structured preoperative education interventions significantly reduced anxiety levels in patients preparing for surgery. Personalized education has emerged as a key strategy to address the multifaceted sources of preoperative anxiety. Similarly, Panchal et al. Panchal et al. (11) found that structured communication with patients before their surgical procedures led to a reduction in anxiety levels, supporting the effectiveness of providing detailed, structured information prior to surgery.

Our demographic findings revealed an overall mean age of  $45.64 \pm 15.98$  years in Group A and  $50.09 \pm 16.80$  years in Group B, with a gender distribution that indicated comparable anxiety levels across sexes. This is consistent with observations made by Nuri et al. (12), who found that gender did not significantly affect anxiety scores. Our stratified analysis similarly indicated that both males and females benefited from structured counseling, with anxiety scores significantly reduced across genders.

The analysis of age stratification revealed lower anxiety among younger patients in Group A. For instance, Jung et al. Jung et al. (13) reported heightened anxiety levels among older surgical patients. Our findings indicated that individuals aged 51 to 65 experienced less pronounced effects from structured counseling, which may relate to varying resilience or coping mechanisms due to age.

We observed a diverse range of surgical procedures within our groups, with laparoscopic cholecystectomy and spinal surgeries being

predominant. This reflects surgical practices in contemporary settings where minimally invasive procedures are common. The study by Baran et al. Baran et al. (14) supports this observation, noting trends across various surgical procedures and reaffirming that surgical type and post-operative care significantly influence preoperative anxiety levels.

In summary, our study underscores the critical role of structured preoperative counseling in managing anxiety among surgical patients. The demographic factors, surgical types, and intervention model utilized align with findings from the literature, contributing to the understanding of effective preoperative strategies.

In the Pakistani context, our findings hold particular relevance. As demonstrated by research conducted by Farooqui et al. (15), anxiety levels can fluctuate based on educational background, cultural attitudes toward surgery, and access to information. Our structured counseling approach addresses clinical needs while considering the cultural nuances of patient fears in Pakistan, suggesting that personalized, culturally sensitive educational interventions can significantly improve the surgical experience.

Conclusion

Structured preoperative counseling proved superior to routine counseling alone in alleviating preoperative anxiety among patients undergoing general anesthesia. The intervention benefited both genders and most age groups, highlighting its universal applicability. Integrating structured patient education into routine preoperative preparation could enhance psychological readiness, improve perioperative outcomes, and elevate patient satisfaction, particularly in healthcare contexts where anxiety related to surgery is common.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

# Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-24)

# Consent for publication

Approved

# Funding

Not applicable

# Conflict of interest

The authors declared the absence of a conflict of interest.

# Author Contribution

## ZUK (Consultant Anaesthetist)

Manuscript drafting, Study Design,

## UF (CESR Fellow)

Review of Literature, Data analysis, and drafting articles.

## SMAT (Consultant Anaesthetist)

Conception of Study, Development of Research Methodology Design

## MMB (Assistant Professor)

Study Design, manuscript review, and critical input.

## MUIB (Assistant Professor)

Manuscript drafting, Study Design,

## AMQ (Consultant Anaesthetist)

Conception of Study, Development of Research Methodology Design

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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