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PREOPERATIVE ANESTHESIA ASSESMENT OF PUBLIC AND PRIVATE HOSPITALS IN PARACHINAR

Tasawor Hussain[1], Sayed Adnan Haider[2], Nargis[3], Sayed Mustafa Hussain[4], Haidar Umar[*5], Kashif Anar[6]

[1,2,3,4]*BS Anesthesia Khyber Medical University IHS Kurram*
[*5]*Demonstrator Anesthesia Khyber Medical University*
[6]*Demonstrator Khyber Medical University IHS Kurram*

[1]tasaworhussain1212@gmail.com, [2]adnanhaider5612@gmail.com, [3]drhayakhan75@gmail.com
[4]sayedmustafa256@gmail.com, [*5]haidarumarpk92@gmail.com, [6]meetkashifaup@gmail.com

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Corresponding Author: *
Haidar Umar

Abstract

Background: *The preoperative anesthesia evaluation is an essential part of perioperative care that guarantees patient safety and enhances surgical results. It includes a thorough assessment of the patient's health status, recognition of risk factors, and appropriate planning for anesthesia administration. Variations in healthcare resources and infrastructure might affect the quality of this evaluation between private and public hospitals.*

Aims: *To analyze the quality, thoroughness, and patient-focused results of preoperative anesthesia evaluations in public versus private hospitals in Parachinar.*

Materials and Methods: *A descriptive cross-sectional study was performed involving 50 patients receiving elective surgery with general anesthesia, comprising 25 patients from public hospitals and 25 from private hospitals. A sampling method that prioritizes convenience was employed. Data were gathered using a structured questionnaire, a medical record checklist, and a pre-anesthesia evaluation checklist. Statistical analysis utilized mean values, percentage and frequency to compare various assessment elements.*

Result: *The results indicated that private hospitals exhibited a more thorough preoperative anesthesia evaluation than public hospitals. Private hospitals recorded higher mean scores for taking medical histories, conducting physical examinations, and providing patient counseling. Patients in private hospitals demonstrated improved comprehension of anesthesia methods and reported a more significant decrease in anxiety. Additionally, patient satisfaction rates were marginally greater in private hospitals. Conversely, public hospitals showed relatively poorer performance in these aspects, potentially due to increased patient volumes, time limitations, and resource constraints.*

Conclusion: *While public and private hospitals carry out crucial preoperative anesthesia assessments, private hospitals generally offer more comprehensive and organized evaluations. Enhancements in communication, resource distribution, and uniform assessment methods are suggested for public hospitals to improve the overall quality of care.*

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INTRODUCTION

Preoperative anesthesia evaluation is a fundamental component of perioperative care that aims to assess patients comprehensively before the administration of anesthesia and the commencement of surgical procedures. It involves detailed history taking, physical examination, review of laboratory investigations, and identification of potential anesthetic risks to optimize patient outcomes and enhance perioperative safety. Proper preoperative assessment enables anesthesiologists to formulate individualized anesthetic plans and reduce the likelihood of perioperative complications (1–5).

The primary objective of pre-anesthetic evaluation is to identify and optimize existing medical conditions that may adversely affect anesthesia and surgery. Chronic diseases such as cardiovascular disorders, respiratory illnesses, diabetes mellitus, hypertension, obesity, and renal dysfunction can significantly increase perioperative risk if not properly evaluated and managed. Comprehensive assessment allows healthcare professionals to recognize these conditions early and implement appropriate interventions before surgery. Several studies have demonstrated that thorough preoperative evaluation contributes significantly to reducing anesthesia-related morbidity and mortality while improving overall surgical outcomes (6–10).

Preoperative assessment also plays a vital role in perioperative risk stratification and clinical decision-making. Through systematic evaluation, anesthesiologists can determine the suitability of patients for surgery, anticipate potential complications, and establish appropriate perioperative monitoring strategies. The process further facilitates effective communication among surgeons, anesthesiologists, nursing staff, and patients, ensuring coordinated and safe patient care throughout the surgical journey (11,12).

Beyond patient safety, pre-anesthesia evaluation contributes substantially to healthcare efficiency and resource utilization. Structured preoperative anesthesia clinics have been shown to decrease last-minute surgical cancellations, reduce unnecessary laboratory investigations, improve operating room utilization, and enhance overall hospital efficiency. Studies have reported that patients assessed in dedicated preoperative clinics experience fewer delays and better perioperative management compared with those assessed immediately before surgery (13,14). Recent advancements in telemedicine have further expanded access to anesthesia assessment services through virtual preoperative evaluation models, which have demonstrated effectiveness in improving accessibility, patient convenience, and healthcare efficiency (15).

Patient education and counseling represent essential components of preoperative anesthesia assessment. Many patients possess limited knowledge regarding anesthesia procedures, associated risks, and postoperative expectations. Insufficient understanding often results in increased anxiety, fear, and reluctance toward surgical procedures. Research has consistently shown that effective communication and patient-centered counseling significantly improve patients' understanding of anesthesia services, reduce preoperative anxiety, and enhance cooperation during the perioperative period (16–18). Consequently, patient satisfaction has emerged as an important indicator of the quality of anesthesia care and is increasingly utilized as a measure of healthcare performance (19–21).

The implementation of standardized guidelines and evidence-based protocols has become a global priority in improving preoperative anesthesia assessment. Professional organizations such as the American Society of Anesthesiologists (ASA), National Institute for Health and Care Excellence (NICE), and the World Health Organization (WHO) have developed recommendations emphasizing comprehensive patient evaluation, appropriate investigations, patient preparation, and perioperative risk assessment (22,23,28–32). Adherence to these guidelines has been associated with improved patient safety, enhanced clinical outcomes, and reduced perioperative complications.

Despite global advancements, substantial differences remain in the quality of anesthesia services across healthcare systems, particularly in developing countries. In Pakistan, healthcare delivery varies considerably between public and

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private hospitals. Public sector hospitals frequently face challenges including overcrowding, limited infrastructure, shortages of trained personnel, and resource constraints, which may compromise the quality of preoperative assessment and perioperative care. In contrast, private hospitals generally provide more organized services, shorter waiting times, better patient counseling, and enhanced patient-centered care (24–27).

Several studies conducted in Pakistan have highlighted differences in patient satisfaction, quality of healthcare services, and perioperative outcomes between public and private healthcare institutions. Private hospitals often demonstrate higher levels of patient satisfaction owing to improved communication, better facilities, and more individualized care. Variations in clinical anesthesia practices, including obstetric and surgical anesthesia management, further reflect disparities in perioperative care delivery between healthcare sectors (25–27). Clinical audits have also emphasized the need for standardized pre-anesthesia assessment protocols and continuous quality improvement initiatives to ensure safe and effective anesthesia services (23).

Risk assessment remains one of the most critical aspects of preoperative evaluation. Evidence suggests that thorough cardiovascular, pulmonary, and functional capacity assessments are essential for predicting perioperative complications and guiding perioperative management strategies. Various risk assessment tools and evidence-based guidelines have been developed to facilitate accurate risk prediction and optimize patient preparation before surgery (35–39,42).

Furthermore, patient-centered care has become increasingly important in modern anesthesia practice. Studies have demonstrated that improved patient understanding of anesthesia procedures and active involvement in perioperative decision-making contribute significantly to higher satisfaction levels and better healthcare experiences. Effective communication, patient education, and individualized counseling therefore remain integral elements of quality preoperative anesthesia care (39,40). Additionally, efficient preoperative assessment practices have been linked to improved operating room performance and reduced healthcare costs, highlighting their importance from both clinical and administrative perspectives (41).

Although the significance of preoperative anesthesia assessment is well recognized, limited evidence is available regarding differences in anesthesia evaluation practices between public and private hospitals in District Kurram, particularly in Parachinar. Understanding these differences is essential for identifying gaps in service delivery, improving adherence to established guidelines, enhancing patient satisfaction, and strengthening perioperative safety. Therefore, this study aims to assess the quality, completeness, and patient-centered outcomes of preoperative anesthesia evaluation practices in public and private hospitals of Parachinar.

OBJECTIVE

To assess the quality, completeness, and patient-centered outcomes of preoperative anesthesia assessment between public and private hospitals in Parachinar.

MATERIALS AND METHODS

Study Design

A descriptive cross-sectional study was conducted to assess and compare preoperative anesthesia evaluation practices in public and private hospitals of Parachinar, District Kurram.

Study Setting

The study was conducted in selected public and private hospitals of Parachinar, District Kurram, Khyber Pakhtunkhwa, Pakistan.

Study Duration

The duration of the study was four months, from December 2025 to March 2026.

Study Population

The study population consisted of adult patients scheduled for elective surgical procedures under general anesthesia in the selected hospitals.

Sample Size

A total of 50 patients were included in the study, comprising 25 patients from public hospitals and

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25 patients from private hospitals. Due to the limited number of eligible elective surgical patients and feasibility constraints within the study area, a sample size of 50 participants was considered appropriate.

Sampling Technique

A non-probability convenience sampling technique was used to recruit participants from both healthcare sectors.

Inclusion Criteria

• Adults aged 18 years and above.• Patients scheduled for elective surgery under general anesthesia.• Patients able to understand and respond to the study questionnaire.• Patients willing to provide written informed consent.

Exclusion Criteria

• Patients undergoing emergency surgical procedures.• Patients with cognitive impairment or communication difficulties.• Patients undergoing day-care or minor procedures without formal anesthesia assessment.• Patients with incomplete or unavailable preoperative assessment records.

Data Collection Procedure

Data were collected using a structured questionnaire developed according to the objectives of the study. The questionnaire included sections on demographic characteristics, completeness of anesthesia assessment, medical history taking, physical examination, patient counseling, communication with anesthesia providers, and overall patient satisfaction. Face-to-face interviews were conducted with eligible participants following completion of their preoperative anesthesia evaluation. Personal identifiers were not recorded to maintain confidentiality and anonymity.

Data Analysis

Data were entered and analyzed using Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics including frequencies, percentages, means, and standard deviations were calculated. Comparative analysis was performed between public and private hospitals to evaluate differences in the quality and completeness of preoperative anesthesia assessment and patient-centered outcomes. Results were presented using tables and figures where appropriate.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board (IRB) of Khyber Medical University. Administrative permission was secured from the participating public and private hospitals before data collection. Written informed consent was obtained from all participants after explaining the objectives and procedures of the study. Participation was voluntary, and respondents were informed of their right to withdraw at any time without affecting their medical care. Confidentiality, anonymity, and privacy of participant information were strictly maintained throughout the study. All collected data were used solely for research purposes.

Results

3.1 Hospital Distribution

Table 3.1: Hospital Distribution

Hospital Type	Frequency	Percentage
Public Hospital	25	50%
Private Hospital	25	50%
Total	50	100%

Interpretation: The study included a total of 50 patients, equally distributed between public and private hospitals, with 25 participants from each healthcare sector. This equal representation ensured a balanced comparison of preoperative anesthesia evaluation practices and patient-

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centered outcomes between the two hospital settings.

3.2 Age Distribution

Table 3.2: Age Distribution of Participants

Age Group (Years)	Private N (%)	Public N (%)
18–25	8 (32%)	12 (48%)
26–35	10 (40%)	8 (32%)
36–45	7 (28%)	5 (20%)

Interpretation: The age distribution revealed that the majority of participants in private hospitals belonged to the 26–35 years age group (40%), while most patients in public hospitals were aged 18–25 years (48%). Participants aged 36–45 years constituted the smallest proportion in both healthcare sectors.

3.3 Preoperative Assessment

Table 3.3: Preoperative Anesthesia Assessment

Response	Private N (%)	Public N (%)	P-value
Yes	25 (100%)	15 (60%)	<0.001
No	0 (0%)	10 (40%)	

Interpretation: All patients in private hospitals underwent preoperative anesthesia assessment compared to only 60% of patients in public hospitals. This highly significant difference ($p<0.001$) indicates better compliance with pre-anesthetic evaluation protocols in private healthcare facilities.

3.4 Medical History

Table 3.4: Medical History Taking

Response	Private N (%)	Public N (%)	P-value
Yes	23 (92%)	17 (68%)	<0.001
No	2 (8%)	8 (32%)	

Interpretation: Medical history was obtained from 92% of patients in private hospitals compared to 68% in public hospitals. The statistically significant difference demonstrates more comprehensive patient evaluation and documentation practices in private healthcare settings.

3.5 Previous Surgery History

Table 3.5: Previous Surgery History

Response	Private N (%)	Public N (%)	P-value
Yes	21 (84%)	19 (76%)	<0.001
No	4 (16%)	6 (24%)	

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Interpretation: A previous surgical history was documented for 84% of patients in private hospitals and 76% of patients in public hospitals. The findings indicate relatively better documentation practices in private hospitals regarding previous surgical experiences.

3.6 Allergy History

Table 3.6: Allergy History Assessment

Response	Private N (%)	Public N (%)	P-value
Yes	22 (88%)	18 (72%)	<0.001
No	3 (12%)	7 (28%)	

Interpretation: Allergy history was recorded in 88% of patients attending private hospitals compared to 72% in public hospitals. This significant difference suggests better patient safety measures and risk assessment procedures in private healthcare facilities.

3.7 Vital Signs Checked

Table 3.7: Vital Signs Assessment

Response	Private N (%)	Public N (%)	P-value
Yes	22 (88%)	19 (76%)	<0.001
No	3 (12%)	6 (24%)	

Interpretation: Vital signs were checked in 88% of patients in private hospitals and 76% in public hospitals. The findings indicate a more thorough clinical evaluation process in private healthcare institutions.

3.8 Airway Examination

Table 3.8: Airway Examination

Response	Private N (%)	Public N (%)	P-value
Yes	23 (92%)	17 (68%)	<0.001
No	2 (8%)	8 (32%)	

Interpretation: Airway examination was performed in 92% of patients in private hospitals compared to 68% in public hospitals. This significant difference reflects a higher standard of pre-anesthetic evaluation in private healthcare facilities.

3.9 Investigations Reviewed

Table 3.9: Review of Investigations

Response	Private N (%)	Public N (%)	P-value
Yes	22 (88%)	18 (72%)	<0.001
No	3 (12%)	7 (28%)	

Interpretation: Investigation reports were reviewed for 88% of patients in private hospitals and 72% of patients in public hospitals. This demonstrates better adherence to preoperative evaluation guidelines within private healthcare settings.

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3.10 Fasting Instructions

Table 3.10: Provision of Fasting Instructions

Response	Private N (%)	Public N (%)	P-value
Yes	25 (100%)	17 (68%)	<0.001
No	0 (0%)	8 (32%)	

Interpretation: All patients in private hospitals received fasting instructions before surgery, whereas only 68% of patients in public hospitals were provided with similar guidance. This significant difference suggests better patient preparation practices in private hospitals.

3.11 Anesthesia Explained

Table 3.11: Explanation of Anesthesia

Response	Private N (%)	Public N (%)	P-value
Yes	23 (92%)	18 (72%)	<0.001
No	2 (8%)	7 (28%)	

Interpretation: Anesthesia procedures were explained to 92% of patients in private hospitals compared to 72% in public hospitals. This finding indicates better communication and patient counseling practices in private healthcare institutions.

3.12 Risks Explained

Table 3.12: Explanation of Anesthesia Risks

Response	Private N (%)	Public N (%)	P-value
Yes	24 (96%)	19 (76%)	<0.001
No	1 (4%)	6 (24%)	

Interpretation: The risks associated with anesthesia were explained to 96% of patients in private hospitals and 76% of patients in public hospitals. The results indicate stronger informed consent practices and patient awareness in private healthcare facilities.

3.13 Anxiety Reduced

Table 3.13: Reduction in Patient Anxiety

Response	Private N (%)	Public N (%)	P-value
Yes	24 (96%)	18 (72%)	<0.001
No	1 (4%)	7 (28%)	

Interpretation: A reduction in anxiety was reported by 96% of patients in private hospitals compared with 72% of patients in public hospitals. Effective communication and comprehensive preoperative evaluation appear to contribute significantly to patient reassurance in private healthcare settings.

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3.14 Patient Satisfaction

Table 3.14: Patient Satisfaction

Response	Private N (%)	Public N (%)	P-value
Satisfied	25 (100%)	16 (64%)	<0.001
Not Satisfied	0 (0%)	9 (36%)	

Interpretation: All patients in private hospitals reported satisfaction with the preoperative anesthesia evaluation process, whereas only 64% of public hospital patients expressed satisfaction. The significant difference highlights superior patient-centered care and communication in private healthcare facilities.

3.15 Combined Mean Comparison

Table 3.15: Combined Mean Percentage Comparison

Variable	Private Mean (%)	Public Mean (%)
Pre-op assessment	100	60
Medical history	92	68
Previous surgery	84	76
Allergy history	88	72
Vital signs	88	76
Airway exam	92	68
Investigations	88	72
Fasting instructions	100	68
Anesthesia explained	92	72
Risks explained	96	76
Anxiety reduced	96	72
Patient satisfaction	100	64

Interpretation: The combined mean comparison demonstrates consistently higher performance across all indicators in private hospitals compared to public hospitals. The greatest differences were observed in preoperative assessment, fasting instructions, and patient satisfaction. Overall, private hospitals showed superior adherence to recommended pre-anesthetic evaluation practices, better communication with patients, and higher patient-centered outcomes.

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Figures: Preoperative Anesthesia Evaluation Study

Figure 3 1 Fasting Instructions

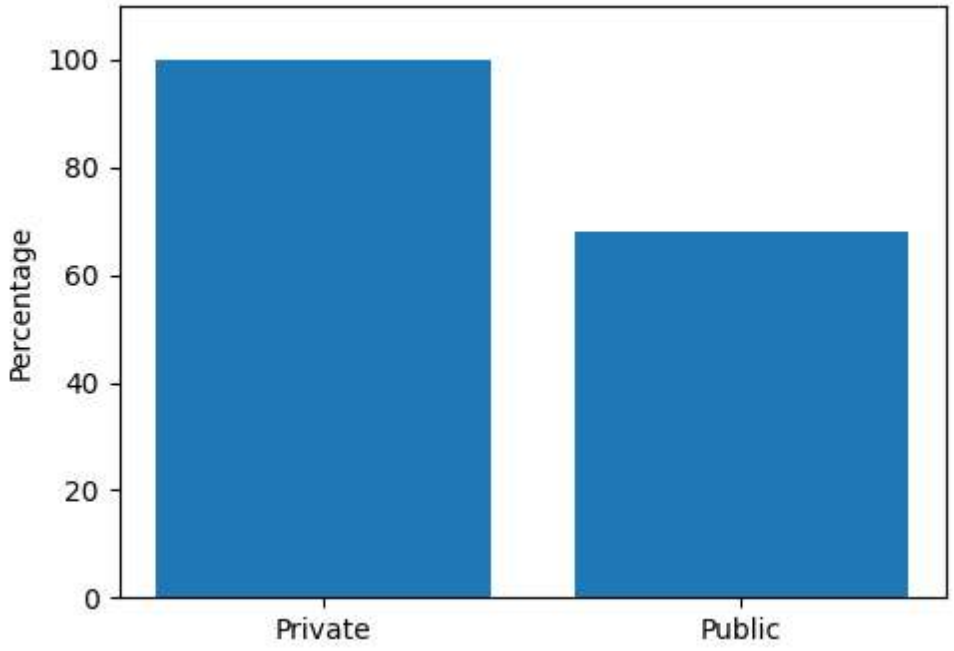


Figure 3.2 Anesthesia Explained

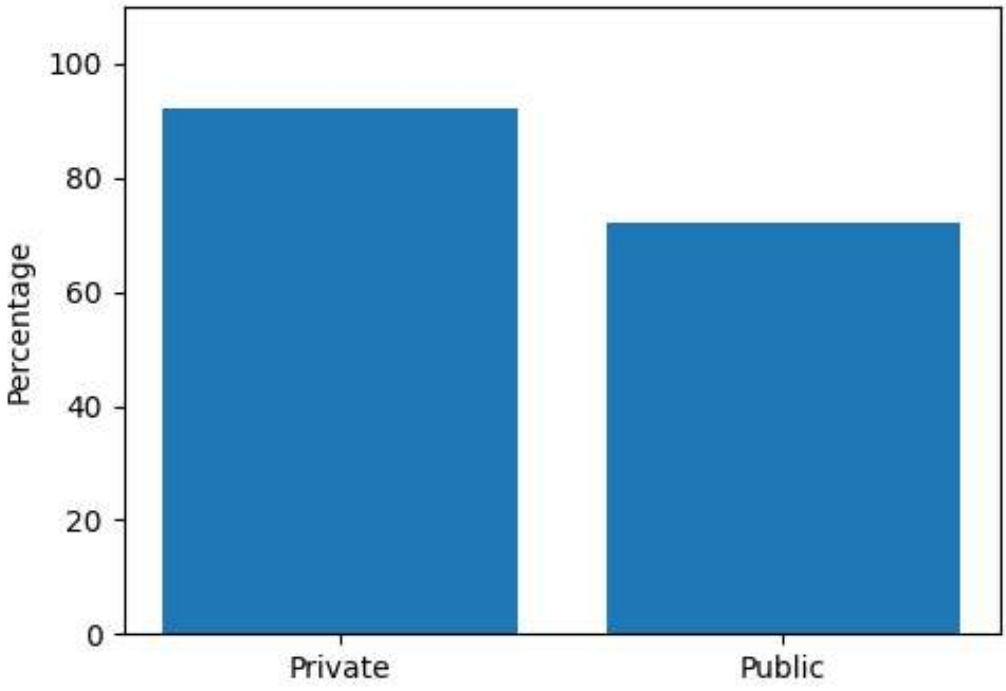


Figure 3 3 Risks Explained

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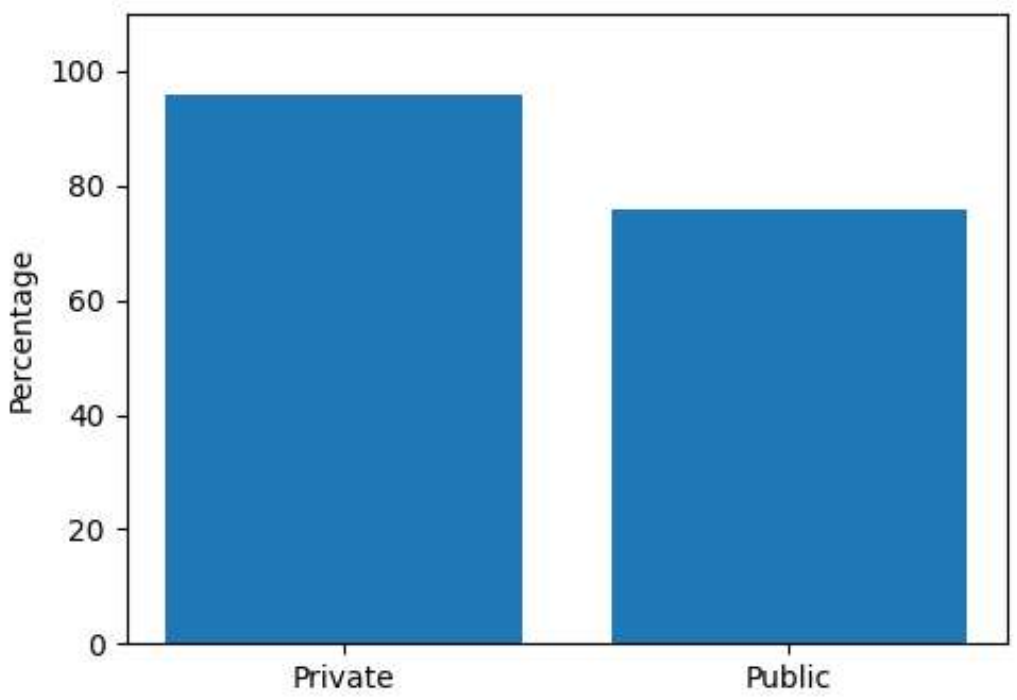


Figure 3.4 Previous Surgery

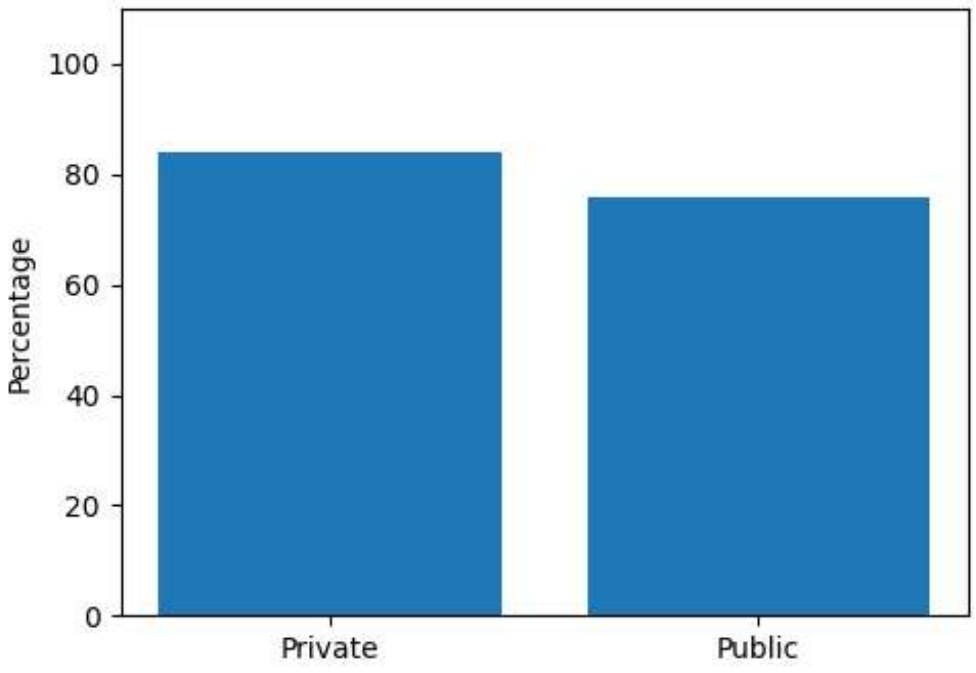


Figure 3.5 Allergy History

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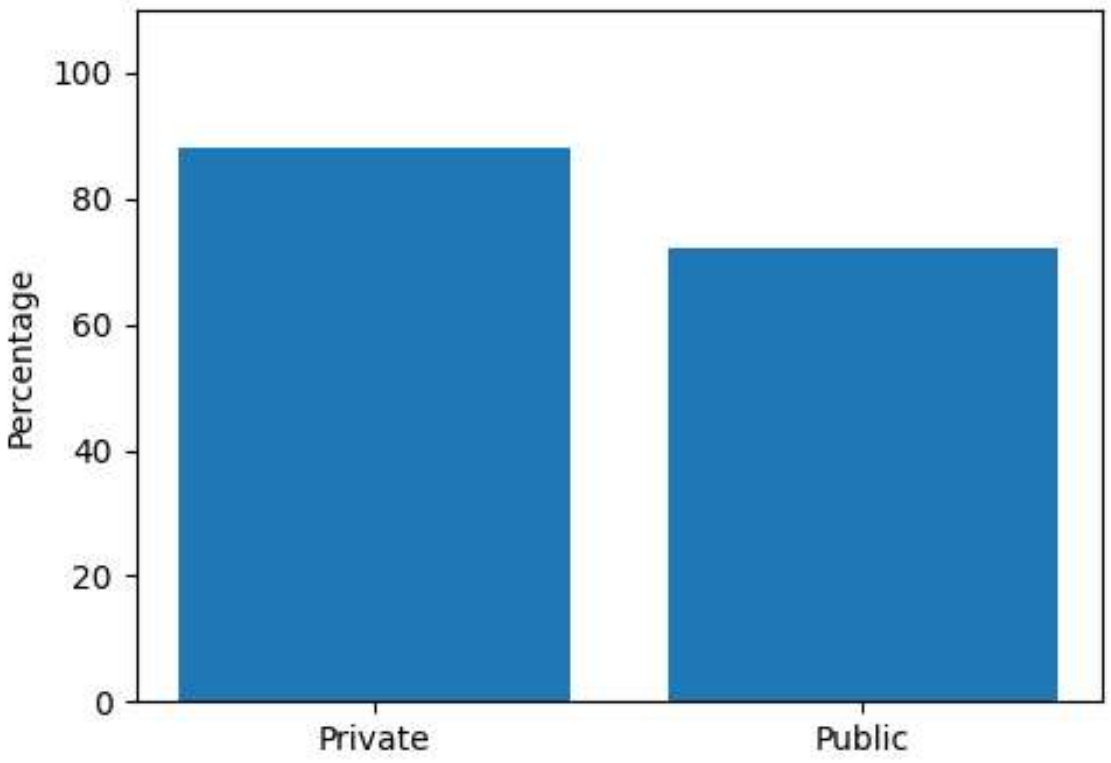
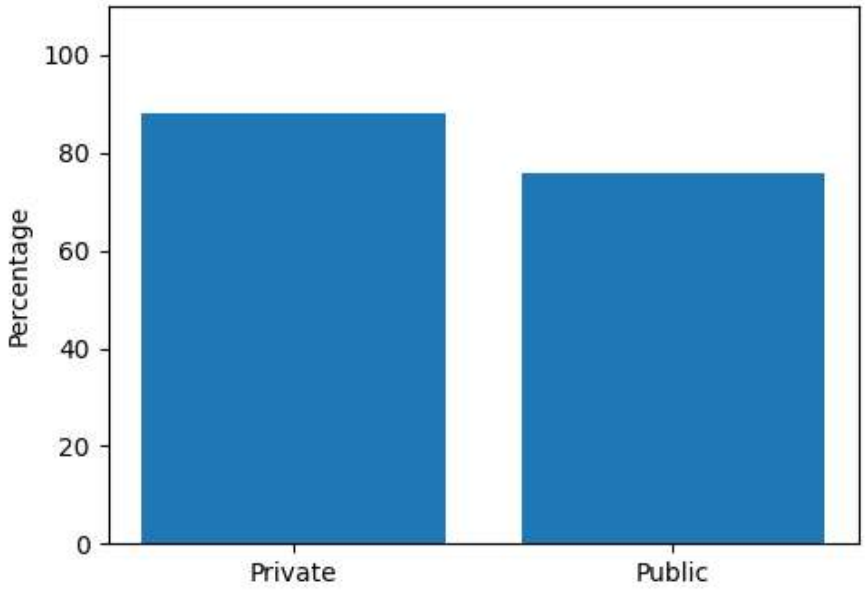
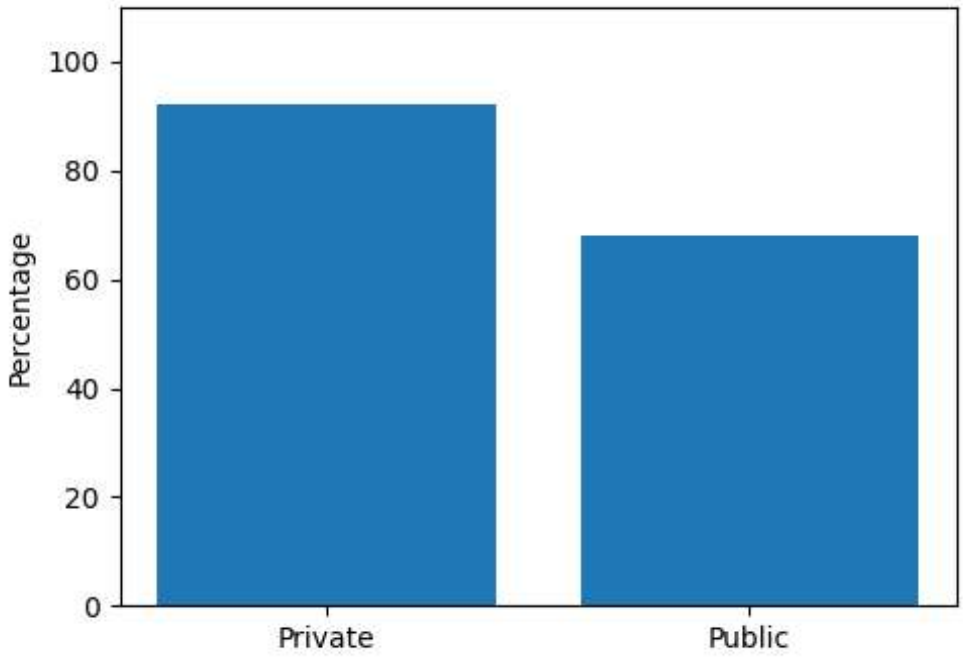


Figure 3 6 Vital Signs



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Figure 3 7 Airway Exam



DISCUSSION

The present study was conducted to assess and compare the quality, completeness, and patient-centered outcomes of preoperative anesthesia evaluation practices in public and private hospitals of Parachinar. Preoperative anesthesia assessment is recognized as an essential component of perioperative care because it facilitates risk identification, optimization of existing medical conditions, and development of individualized anesthesia plans that improve patient safety and surgical outcomes (1–5). The findings of the current study demonstrated notable differences between public and private hospitals, with private hospitals consistently showing superior performance across most indicators of preoperative anesthesia evaluation.

One of the major findings of this study was the significantly higher proportion of patients receiving a formal preoperative anesthesia assessment in private hospitals compared with public hospitals. All patients in private hospitals underwent preoperative evaluation, whereas only 60% of patients in public hospitals received similar assessments. These findings are consistent with studies reporting that structured pre-anesthetic assessment programs improve perioperative planning, reduce complications, and enhance patient safety (6,13,14). The presence of organized pre-anesthesia assessment systems in private hospitals may explain their better performance in this regard.

The study further revealed that medical history taking, previous surgical history documentation, allergy assessment, airway examination, and vital sign monitoring were more comprehensive in private hospitals. Thorough assessment of these factors is fundamental for identifying anesthesia-related risks and preventing perioperative complications. Maroufi et al. (6) emphasized that comprehensive pre-anesthetic evaluation is critical for patient safety and early detection of comorbid conditions. Similarly, Nakamura (7) highlighted that risk assessment and patient preparation are essential components of safe anesthesia practice. The higher percentages observed in private hospitals suggest greater adherence to evidence-based recommendations and standardized assessment protocols.

Review of investigations and provision of fasting instructions were also significantly better in private hospitals. Current guidelines from the American

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Society of Anesthesiologists (28), NICE (29), and Apfelbaum et al. (30) emphasize the importance of reviewing relevant investigations and providing clear fasting instructions before surgery. In the present study, all patients in private hospitals received fasting instructions compared with only 68% of patients in public hospitals. Inadequate fasting instructions may increase the risk of perioperative complications such as aspiration and delayed surgery, highlighting the need for standardized protocols in public healthcare facilities.

Patient education and communication emerged as important factors influencing patient outcomes. A substantially greater proportion of patients in private hospitals reported receiving explanations regarding anesthesia procedures and associated risks. Previous studies have demonstrated that patients often possess limited knowledge about anesthesia services and benefit significantly from structured counseling and education (16,17). Effective communication between healthcare providers and patients has been shown to improve understanding, reduce fear, and promote active participation in perioperative care (18,39). The findings of the present study support these observations and indicate that communication practices are generally more effective in private hospitals.

Anxiety reduction was another important outcome assessed in this study. The majority of patients in private hospitals reported decreased anxiety following preoperative assessment compared with patients in public hospitals. These findings are in agreement with Celik and Edipoglu (18), who reported that effective preoperative counseling significantly reduces anxiety levels among surgical patients. Since anxiety may adversely affect perioperative outcomes and patient experiences, comprehensive communication and counseling should be considered integral components of anesthesia care.

Patient satisfaction was found to be considerably higher in private hospitals, where all participants reported satisfaction with preoperative anesthesia services. In contrast, only 64% of patients in public hospitals expressed satisfaction. Similar findings have been reported by Shahbaz et al. (19,21), who demonstrated that patient satisfaction is strongly associated with the quality of preoperative communication, risk explanation, and overall anesthesia care. Myles et al. (40) further highlighted that patient satisfaction serves as an important indicator of healthcare quality and reflects both technical competence and interpersonal communication skills.

The observed differences between public and private hospitals may be attributed to variations in infrastructure, staffing levels, patient volume, and organizational efficiency. Public hospitals frequently face challenges related to overcrowding, limited resources, and heavy workloads, which may compromise the quality and completeness of preoperative assessment (24–27). Conversely, private hospitals generally operate with better staffing ratios, more structured assessment systems, and greater opportunities for individualized patient care. Clinical audits conducted in Pakistan have similarly emphasized the need for standardized pre-anesthesia assessment protocols and quality improvement initiatives to enhance patient safety and service quality (23,26).

Overall, the findings of this study demonstrate that private hospitals in Parachinar provide more comprehensive, structured, and patient-centered preoperative anesthesia evaluations compared with public hospitals. These findings are consistent with international evidence supporting the role of systematic pre-anesthetic assessment in improving patient safety, reducing perioperative risks, decreasing anxiety, and enhancing patient satisfaction (6,15,23,28,35,42). Strengthening preoperative assessment practices in public hospitals through standardized protocols, improved communication strategies, and enhanced resource allocation may contribute significantly to improving the quality of anesthesia care and patient outcomes.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study assessed and compared preoperative anesthesia evaluation practices in public and private hospitals of Parachinar. The findings revealed significant differences in the quality,

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completeness, and patient-centered outcomes of preoperative anesthesia assessments between the two healthcare sectors. Although both public and private hospitals provided essential preoperative anesthesia services, private hospitals consistently demonstrated better performance across nearly all evaluated indicators.

Private hospitals achieved higher rates of comprehensive medical history taking, documentation of previous surgical history, allergy assessment, airway examination, vital sign monitoring, review of investigations, and provision of fasting instructions. Furthermore, patients in private hospitals reported receiving more detailed explanations regarding anesthesia procedures and associated risks. These findings indicate stronger adherence to recommended preoperative assessment guidelines and better implementation of evidence-based anesthesia practices within private healthcare facilities.

The study also highlighted important differences in patient-centered outcomes. Patients receiving care in private hospitals experienced greater reductions in preoperative anxiety and reported substantially higher levels of satisfaction compared with patients in public hospitals. Effective communication, patient education, and individualized counseling appeared to play a major role in improving patient confidence and overall satisfaction with anesthesia services. In contrast, public hospitals showed relatively lower performance in several assessment domains, which may be attributed to resource limitations, high patient loads, staffing shortages, and organizational challenges.

Overall, the study concludes that private hospitals in Parachinar provide more structured, comprehensive, and patient-focused preoperative anesthesia evaluations than public hospitals. Addressing the identified gaps in public healthcare facilities is essential to ensure equitable access to safe, high-quality anesthesia care and to improve perioperative outcomes for all surgical patients.

Recommendations

Based on the findings of this study, the following recommendations are proposed to improve the quality of preoperative anesthesia evaluation, particularly within public hospitals:

Implementation of Standardized Pre-Anesthesia Assessment Checklists Public hospitals should adopt structured and standardized pre-anesthesia assessment checklists to ensure consistent evaluation of medical history, allergy status, airway examination, vital signs, and other essential clinical parameters.

Establishment of Pre-Anesthesia Clinics (PACs)Dedicated pre-anesthesia clinics should be established to facilitate comprehensive patient assessment before surgery, improve perioperative planning, and reduce last-minute cancellations and delays.

Strengthening Patient Education and Communication Healthcare providers should allocate sufficient time for counseling patients regarding anesthesia procedures, risks, benefits, and postoperative expectations to improve patient understanding and reduce anxiety.

Standardization of Fasting and Preoperative Instructions Clear written and verbal instructions regarding fasting requirements and preoperative preparation should be provided to all patients to improve surgical readiness and patient safety.

Improved Resource Allocation and Staffing Public hospitals should enhance staffing levels and resource availability to reduce workload pressures and allow healthcare professionals adequate time to conduct thorough preoperative assessments.

Regular Training and Continuing Professional Development Anesthesia personnel should receive regular training on current evidence-based guidelines and best practices in preoperative evaluation to ensure high standards of patient care.

Periodic Clinical Audits and Quality Improvement Programs Routine monitoring and clinical audits should be conducted to evaluate compliance with pre-anesthesia assessment standards and identify areas requiring improvement.

Future Research Further multicenter studies with larger sample sizes should be conducted to provide a broader understanding of preoperative anesthesia practices and to develop targeted interventions for improving perioperative care in Pakistan.

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