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# Preoperative Knowledge of Anesthesia Among Patients Undergoing Elective Surgeries at Lady Reading Hospital, Peshawar

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**Abstract**

**Background:** Anesthesia plays a crucial role in surgical safety, yet patient awareness regarding anesthesia and the role of anesthetists remains limited. Preoperative knowledge about anesthesia plays a critical role in improving patient preparedness, reducing anxiety, and ensuring informed consent before elective surgeries. Assessing the level of knowledge can help identify gaps and guide the development of effective educational interventions. **Objective:** To determine the frequency of preoperative knowledge of anesthesia among patients undergoing elective surgeries at Lady Reading Hospital, Peshawar. **Methods:** A cross-sectional study was conducted on a sample of 311 patients aged between 18 and 50 who underwent elective surgeries. Data were collected using a structured questionnaire designed to evaluate patients' understanding of anesthesia, including its types, risks, benefits, and the role of anesthesiologists in preoperative care. Statistical analyses were performed to assess relationships between demographic variables and levels of anesthesia knowledge. **Results:** A total of 311 patients participated, with a gender distribution of 55.3% males and 44.7% females, spanning an age range of 18–50 years. Educational status revealed significant diversity, with 33% uneducated, while only 10% had attained higher education. Healthcare professionals were the primary source of anesthesia knowledge (47%), followed by family/friends (25%), media (7%), and

brochures (3%), while 18% reported no prior information. Awareness of anesthesia types was limited, with only 37.3% demonstrating knowledge, whereas 62.7% lacked understanding. Timing of information delivery varied, with 39.9% informed more than a week before surgery, 25.7% within a week, 17.0% on the day of surgery, and 17.4% not informed at all. Confidence levels were moderate to high in 70% of patients, though 18% expressed low confidence. Understanding of anesthesia was strong in 24.1% and moderate in 33.8%, while 42.1% showed poor comprehension. Fear and concerns were noted in 38.9%, mainly regarding complications and awareness under anesthesia. Importantly, 79.1% regarded preoperative anesthesia knowledge as very important. Knowledge gaps were particularly evident in less educated and rural populations, while participants counseled directly by anesthetists exhibited better awareness. Suggestions to improve dissemination included routine preoperative anesthetist visits (46.3%), social media (16.4%), and television awareness campaigns (11.3%). **Conclusion:** This study underscores the need for targeted educational initiatives to bridge the knowledge gap regarding anesthesia among patients undergoing elective surgeries. Structured preoperative counseling sessions, easily accessible educational materials, and improved communication to enhance patient understanding. These gaps can improve patient outcomes, reduce anxiety, and foster trust in healthcare providers.

**Keywords:** Preoperative knowledge, Anesthesia awareness, Elective surgery, Patient education, Lady Reading Hospital

## Introduction

The term *anesthesia* refers to the loss of sensation and consciousness without loss of vital functions, artificially induced through the administration of agents that block the transmission of pain impulses along nerve pathways to the brain (1). Anesthesia allows patients to undergo surgical procedures without pain and, in many cases, without awareness of the surgery. Depending on the type and extent of the procedure, anesthesia may involve general or local techniques. General anesthesia produces a balanced state of unconsciousness, analgesia, and muscle relaxation, typically required for major operations (2). In contrast, local anesthesia involves injecting anesthetic agents into a specific region of the body to block sensation in that area (3). Anesthesia is administered by qualified professionals, including anesthesiologists or nurse

anesthetists, who carefully monitor the patient's vital functions throughout the surgical process to ensure safety and effectiveness.

Since the first successful operation performed under anesthesia in 1846, anesthesiology has become an indispensable component of modern medicine (4). Over the last five decades, remarkable advances in anesthetic agents, monitoring systems, and techniques have revolutionized the specialty. Despite these developments, public awareness regarding anesthesia and the role of anesthetists remains limited, particularly in developing countries (5,6). Studies have shown that patients often underestimate or misunderstand the scope of an anesthetist's role, perceiving them only as professionals who administer drugs before surgery and then leave once the patient is unconscious (7). In reality, anesthesiologists are essential not only in the operating theater but also in intensive care units, pain management clinics, trauma care, and as members of resuscitation teams worldwide (8,9).

Public education efforts such as awareness programs and observance of National Anesthesia Day in developed countries have aimed to enhance patient understanding of this critical specialty (8). However, in many regions, including Pakistan, patient knowledge about anesthesia and anesthetists remains poor. Studies indicate that limited awareness contributes to heightened preoperative anxiety, misconceptions, and lower patient satisfaction (15,16). Conversely, informed patients experience reduced anxiety, better perioperative cooperation, and improved postoperative outcomes (17–19). Anxiety related to anesthesia has been linked to increased cortisol secretion and adverse psychoendocrinological responses, potentially prolonging recovery and worsening surgical outcomes (21, 22).

Preoperative counseling and education are therefore fundamental components of safe anesthesia practice (23,24). Nevertheless, evidence consistently shows that public knowledge of anesthesia is inadequate in both developed and developing nations (25,26). Misconceptions regarding regional anesthesia, such as fear of paralysis, needle pain, or being awake during surgery, persist widely (46–48). In Pakistan, this lack of awareness often results in refusal of regional anesthesia, despite its safety and advantages (44,45).

Given the rising trend of elective and day-care surgeries, the importance of proper pre-anesthetic assessment and patient education cannot be overstated (27–31). Anesthesiologists are crucial for reducing preoperative anxiety, improving patient satisfaction, and ensuring better surgical outcomes (32–36). However, the lack of public knowledge continues to undermine the specialty in low-resource settings. This study, therefore, seeks to determine the frequency of preoperative knowledge of anesthesia among patients undergoing elective surgeries at Lady Reading Hospital, MTI Peshawar, with the aim of identifying gaps in awareness and highlighting the need for improved education and counseling interventions.

## Methods

This study employed a descriptive cross-sectional design to evaluate preoperative knowledge of anesthesia among patients scheduled for elective surgeries. It was conducted at Lady Reading Hospital Medical Teaching Institution (LRH MTI), Peshawar, a major tertiary care facility serving a diverse population.

A total of 311 patients were included, selected through convenience sampling. Eligibility criteria comprised patients aged 18–50 years, ASA I and II, undergoing elective surgical procedures, and willing to provide informed consent. Patients undergoing emergency surgeries or unable to communicate effectively were excluded. The sample size was calculated using the WHO sample size calculator, based on an estimated prevalence of 28%, resulting in 310 participants; this was increased to 311 to account for potential non-responses.

Data were collected using a structured, pretested questionnaire developed in consultation with senior anesthesiologists. The tool covered demographic information (age, gender, education, residence, and employment), knowledge of anesthesia, and awareness of the anesthetist's role, types of anesthesia, patient concerns, and sources of information. Questionnaires were translated into the local language for clarity and administered through face-to-face structured interviews by trained research assistants during preoperative assessments.

Ethical approval was obtained from the Institutional Review Board (IRB) of LRH MTI. Written informed consent was secured from all participants, with assurances of confidentiality and the right to withdraw at any time. Data were anonymized and

securely stored. Statistical analysis was conducted using SPSS. Descriptive statistics (frequencies, percentages, and means) were used to summarize findings, while subgroup analyses were performed to explore associations between demographic factors and knowledge levels.

## Results

A total of 311 individuals participated in the study, with an age range of 18–50 years, ensuring diverse adult representation. The gender distribution showed 55.3% males and 44.7% females. Regarding educational background, 33% had no formal education, 23% had completed primary education, 22% secondary education, 12% undergraduate, and 10% higher education. Most participants resided in rural areas (61%), while 39% were from urban areas. Employment status showed that 29% were employed and 71% unemployed.

Healthcare professionals emerged as the primary source of anesthesia-related information (47%), followed by family and friends (25%), media platforms such as television and the internet (7%), and hospital brochures (3%). Notably, 18% of participants reported no prior knowledge of anesthesia. Awareness of anesthesia types was found to be low; only 37.3% of participants reported being aware of the different types, while 62.7% lacked awareness. Timing of information delivery varied: 39.9% received information more than a week before surgery, 25.7% within 1–7 days prior, 17.0% on the day of surgery, and 17.4% received no information at all.

Confidence levels in the anesthesia process also varied. While 70% of participants expressed moderate to high confidence, 12% were neutral, and 18% reported low confidence. Understanding of anesthesia was strong in 24.1% of participants and moderate in 33.8%; however, 18% had limited comprehension and 24.1% had little to no understanding. When asked about anesthesia-related concerns, 38.9% of participants reported fears—mainly complications, intraoperative awareness, and postoperative pain—while 61.1% reported no concerns. The perceived importance of preoperative knowledge was high, with 79.1% rating it as “very important,” while 9.3% considered it “somewhat important,” 4.2% “just important,” and 5.8% “not important.”

Knowledge gaps were more pronounced among less educated and rural participants. Those counseled directly by healthcare professionals demonstrated better

understanding and higher confidence compared to those relying on non-medical sources. Suggestions to improve anesthesia knowledge dissemination included ensuring a preoperative anesthetist visit (46.3%), using social media platforms (16.4%), arranging TV shows or awareness campaigns (11.3%), encouraging self-study or research (6.1%), while 9% recommended combining anesthetist visits with social media outreach. About 10.9% offered no suggestions.

**Type of Operations:** Among the study participants, the most common surgical specialties included gynecology (18.6%), general surgery (18.0%), orthopedics (18.3%), vascular surgery (16.4%), ENT (15.1%), and urology (13.5%).

Table 1: *Demographic Profile of Patients*

| Variable | Frequency (n=311) | Percentage (%) |
|---|---|---|
| Male | 172 | 55.3 |
| Female | 139 | 44.7 |
| Age 18-25 | 114 | 36.7 |
| Age 26-33 | 77 | 24.8 |
| Age 34-41 | 42 | 13.5 |
| Age 42-50 | 78 | 25.1 |
| Education: Non_literate | 102 | 32.8 |
| Education: Primary | 71 | 22.8 |
| Education: Secondary | 70 | 22.5 |
| Education: Higher | 68 | 21.9 |
| Residence: Urban | 120 | 38.6 |
| Residence: Rural | 191 | 61.4 |

*Figure 1: Awareness of Anesthesia among patients.*

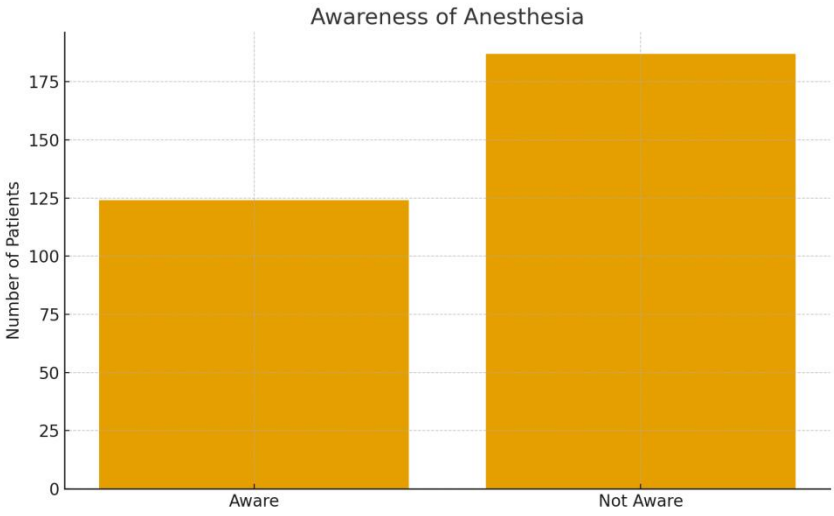



*Figure 2: Awareness of Anesthetist's Role.*

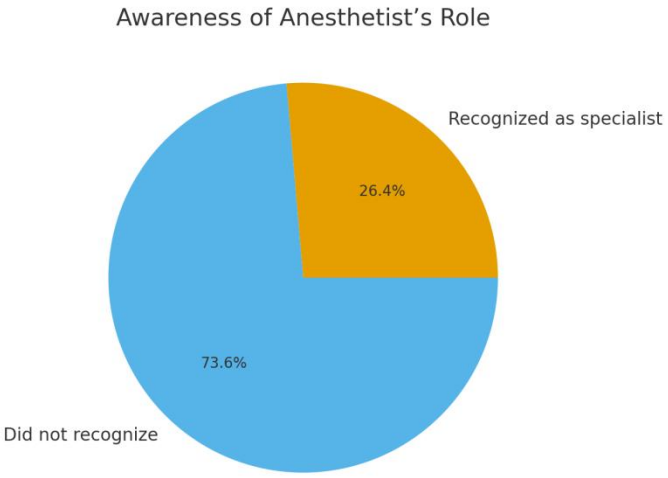
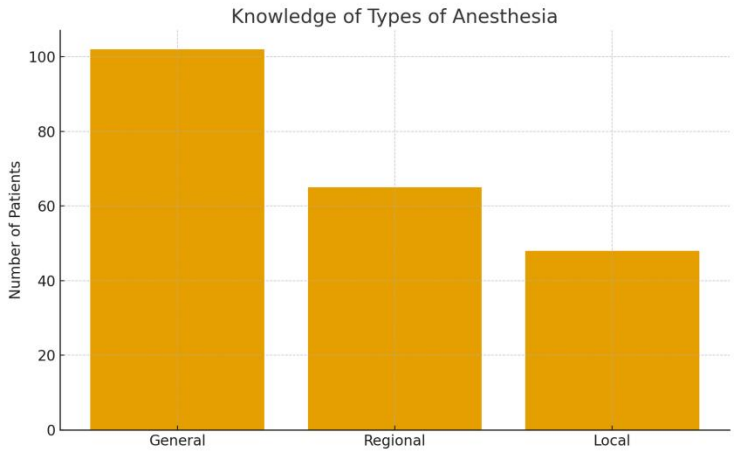



*Figure 3: Knowledge of different types of anesthesia.*




## Discussion

This study assessed the preoperative knowledge of anesthesia among 311 patients presenting for elective surgeries at Lady Reading Hospital, Peshawar. The demographic profile revealed a slight male predominance (55.3%) and a majority within the younger age group of 18–25 years (36.7%). Notably, most participants resided in rural areas (61.4%), compared to 38.6% from urban settings. This rural–urban divide may contribute to disparities in access to health education, including knowledge about anesthesia.

Educational attainment among participants was generally low, with 32.8% reporting no formal education and only 9.6% achieving a Master's degree or higher. Limited education likely influenced reduced awareness about anesthesia and the role of anesthetists. Similar findings have been reported in Ethiopia and Karachi, where patient knowledge strongly correlated with educational background, highlighting education's critical role in shaping medical awareness (7, 51).

The study further demonstrated that 62.7% of patients lacked information regarding the type of anesthesia to be administered, while only 37.3% had some level of awareness. This substantial knowledge gap underscores the urgent need for improved preoperative education to ensure informed decision-making. Comparable results have been documented in Ethiopia (51) and Hong Kong (6), where patients frequently underestimated or misunderstood anesthetists' responsibilities beyond drug administration.

Healthcare professionals were identified as the primary information source by 46.9% of participants, while family and friends (24.8%), media platforms (6.4%), and hospital brochures (3.2%) played a smaller role. Alarmingly, 17.4% of respondents reported having received no information at all regarding anesthesia. The timing of information delivery varied, with 39.9% informed more than one week before surgery and 17.0% receiving details only on the day of surgery. Such inconsistencies in communication may contribute to heightened preoperative anxiety and reduced patient preparedness (35, 36, and 53).

Participants' comprehension of anesthesia was also limited. Only 24.1% reported a clear understanding, while 42.1% had no clarity at all. In line with this, a referenced study (26) found that only 42% of patients understood the anesthetist's role preoperatively, though this improved significantly to 84% following structured educational interventions. These findings highlight the importance of targeted preoperative counseling in improving patient knowledge and confidence.

Concerns related to anesthesia were reported by 38.9% of respondents, including fears of complications, intraoperative awareness, and inadequate postoperative pain management. Similar concerns have been observed in prior studies (26), particularly among women and those with no prior surgical experience. Addressing these fears is vital for reducing preoperative anxiety and building patient trust in anesthetic care.

Participants offered several suggestions to improve patient education, with the most frequent recommendation being routine preoperative visits from anesthetists (46.3%). Others included utilizing social media platforms (16.4%) and organizing educational TV programs (11.3%). These suggestions align with global best practices where digital media and interactive education have been increasingly employed to improve patient understanding (15, 16).

Overall, this study underscores the critical need for culturally sensitive and targeted educational strategies, especially for patients from rural and low-literacy backgrounds. Anesthetists should take an active role in preoperative counseling, supported by institutional initiatives aimed at reducing patient anxiety and promoting better surgical outcomes (20).

The findings are consistent with global literature highlighting limited public awareness of anesthesia. Similar gaps have been documented in studies conducted in Ethiopia (51), Karachi (7), and Hong Kong (6). However, the unique challenges in developing countries—including rural–urban disparities and low literacy rates—necessitate context-specific interventions to effectively enhance patient education and awareness.

## Conclusion

This study evaluated preoperative knowledge of anesthesia among 311 patients undergoing elective surgeries at Lady Reading Hospital, MTI Peshawar. The findings revealed substantial knowledge gaps, with many participants demonstrating limited or no awareness of anesthesia, its types, and the role of anesthetists. Younger, more educated patients and those with prior surgical experience exhibited better knowledge, while older and less educated individuals were least informed.

These results highlight the urgent need for structured preoperative education to improve patient understanding. Key strategies include routine preoperative counseling sessions led by anesthetists, the use of simplified and culturally appropriate educational materials, and the integration of visual aids or digital platforms to make medical information more accessible. Enhancing communication during pre-anesthetic assessments is essential to address patient concerns, build trust, and reduce preoperative anxiety.

Improved patient knowledge has broader implications for surgical outcomes and healthcare efficiency, including reduced anxiety, higher satisfaction, and faster recovery. Institutional support and community outreach programs are recommended to strengthen public awareness, particularly in rural and underprivileged populations. Future research should assess the effectiveness of targeted educational interventions in improving anesthesia knowledge and examine their impact on patient satisfaction, anxiety, and perioperative outcomes across diverse healthcare settings.

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