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RESEARCH ARTICLE

Impact of Educational Background and Previous Anesthesia Exposure on Understanding and Perceptions of Anesthesia and Anesthesiologists

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Abstract: ***Background***: Anesthesiology is vital for modern surgery, yet patients often have limited understanding of anesthesia and the anesthesiologist's role[1]. Inadequate awareness can increase preoperative anxiety and misconceptions. Educational attainment and prior anesthesia experience may influence this knowledge gap. ***Objective***: To evaluate how patients' education level and previous anesthesia exposure affect their knowledge and perceptions of anesthesia and anesthesiologists. ***Methods***: In a 3-month cross-sectional study at a tertiary care center, 95 adult patients (aged 15–70) scheduled for elective surgery were recruited. A convenience sample was obtained after informed consent. A structured questionnaire assessed demographics, educational background, prior anesthesia exposure, and knowledge/perceptions of anesthesia and the anesthesiologist. Descriptive statistics (means, percentages) summarized the data. ***Results***: Of 95 patients, mean age was 42.4±14.0 years (51% aged 15–42; 49% aged 43–70). Gender was 56% male, 44% female. Educational levels ranged from illiterate (11.6%) to postgraduate (12.6%), with most having primary or secondary schooling. Only about 40% of less-educated patients correctly identified the anesthesiologist as a medical doctor, whereas higher-educated patients were significantly more likely to have correct knowledge. Misconceptions (e.g. anesthesiologist as "technician" or "surgeon") were common among lower-education groups. Patients with prior anesthesia exposure reported lower preoperative anxiety and better understanding than first-time patients. General surgery was the most common procedure (47%), and obstetrics the least (4%). ***Conclusions***: Patient knowledge of anesthesia is generally poor, especially among those with lower education, whereas higher education and past experience improve understanding. These findings mirror previous studies: for example, Baaj et al. found only 40% of the public in Saudi Arabia recognized anesthesiologists as physicians, and Karmakar et al. reported over half of Indian patients did not know who administers anesthesia. Our results emphasize the need for targeted preoperative counseling and public education to address misconceptions and reduce anxiety.

Keywords: anesthesia, anesthesiologist, patient awareness, education level, preoperative anxiety, health literacy

INTRODUCTION

Anesthesia is a cornerstone of modern surgical practice, enabling complex procedures to be performed without pain[1]. Despite its importance, public understanding of anesthesia and the anesthesiologist's role remains limited[1]. Many patients misconceive the anesthesiologist as a technician or assistant rather than a physician, leading to underrecognition of the specialty. This lack of knowledge has been documented internationally. For instance, Baaj et al. (2010) found that only 40% of respondents in Saudi Arabia correctly identified anesthesiologists as medical doctors[2]. Similarly, Karmakar et al. (2018) reported that more than half of Indian surgical patients were unaware of who would administer anesthesia[3]. In a Nepalese study, just 32% of patients knew that anesthesiologists give anesthesia, while 63% could not name the types of anesthesia and many believed surgeons or nurses administer it[4]. Low awareness is linked to higher anxiety and misconceptions about anesthesia. In general, patients' educational background is a key factor: higher education correlates with better anesthesia knowledge[2][3]. Prior anesthesia experience may also influence attitudes: patients with previous surgery often feel less anxious than first-time surgical patients.

In this context, we aimed to assess the relationship between patient education level, prior anesthesia exposure, and their knowledge and perception of anesthesia and the anesthesiologist. Understanding these factors can guide efforts to improve patient education.

METHODS

Institutional Ethical Committee clearance was obtained prior to the commencement of the study (**IEC Approval No: MMCH&RI/UG/AHS/24/MAY/25**).

This observational, cross-sectional study was conducted over three months in 2025 at the Department of Anesthesiology, Meenakshi Medical College Hospital & Research Institute, Chennai. 95 adult patients (aged 15–70 years) scheduled for elective surgery was enrolled after providing written informed consent.

Inclusion criteria: Patients aged 15–70 years, undergoing elective surgery, able to communicate, and willing to participate.

Exclusion criteria: Patients with emergency surgery, refusal to participate, hearing or cognitive impairment preventing reliable response, those working in departments related to anesthesia (OT, ICU, emergency), or having an anesthesiologist in the family.

A pretested structured questionnaire (in the local language) was administered preoperatively. It collected demographic data (age, gender), education level, and history of previous surgery/anesthesia. Knowledge and perception were assessed using multiple-choice questions about anesthesia types, administration, anesthesiologist's role, and common anesthesia-related concerns. The questionnaire was adapted from validated surveys in the literature.

Data were analyzed descriptively using means and percentages. Key outcomes included proportion of correct responses concerning anesthesia concepts and identification of the anesthesiologist, stratified by education level and prior anesthesia exposure.

RESULTS

Among 95 patients, the mean age was 42.4±14.0 years (range 15–70); 51% were aged 15–42 years and 49% were 43–70 years, represented in Table 1. There were 53 males (56%) and 42 females (44%) represented in Table 2.

AGE	NO: OF: PATIENTS	PERCENTAGE
15 to 42	48	51%
43 to 70	47	49%
TOTAL	95	100%
TOTAL MEAN AND STANDARD DEVIATION	**42.4 ±14.0**	

TABLE 1: AGE DISTRIBUTION AMOUNG PATIENTS

GENDER	NO: OF: PATIENTS	PERCENTAGE
FEMALE	42	44%
MALE	53	56%
TOTAL	95	100%
TOTAL MEAN AND STANDARD DEVIATION	**19±13.75**	

TABLE: 2 GENDER DISTRIBUTION AMONG PATIENTS

Education levels: Participants' educational qualifications varied widely. Approximately one-quarter had primary education (24.2%) and another quarter had completed higher secondary school (23.2%). Fifteen percent had completed high school, 12.6% were graduates, 12.6% were postgraduates, and 11.6% were illiterate represented in Table 3.

EDUCATIONAL LEVEL	**NO: OF: PATIENTS**	**PERCENTAGE**
ILLITERATE	**11**	**11.6 %**
PRIMARY	**23**	**24.2%**
HIGH SCHOOL	**15**	**15.8%**
HIGHER SECONDARY	**22**	**23.2%**
GRADUATE	**12**	**12.6%**
POST GRADUATE	**12**	**12.6%**

Table 3: EDUCATIONAL QUALIFICATION

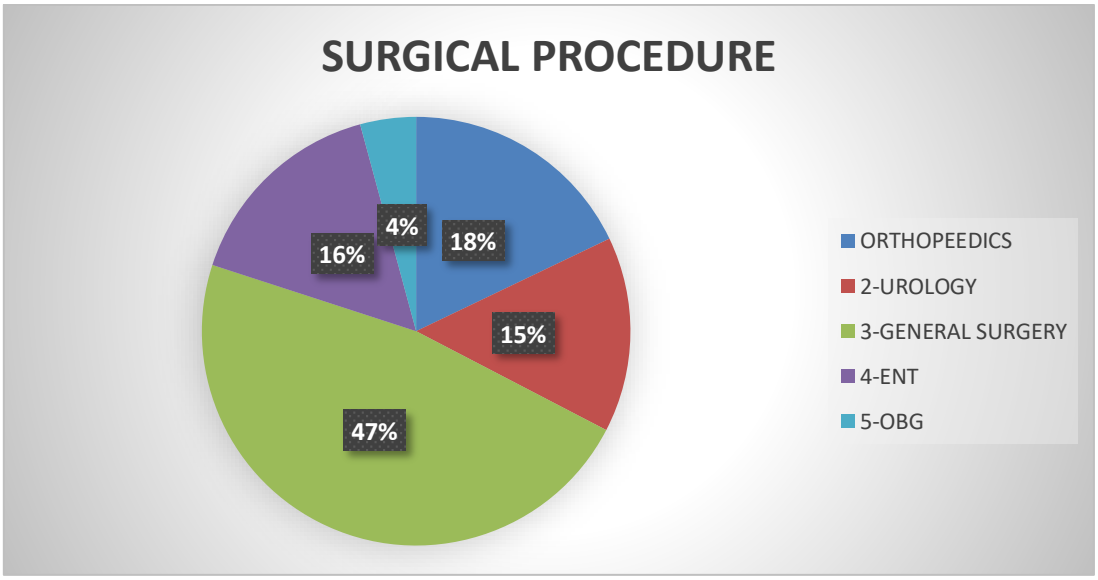
Previous anesthesia exposure: Many patients had undergone prior surgeries, while first-time surgical patients reported more uncertainty about anesthesia. Patients with previous anesthesia experience generally expressed less preoperative anxiety and a better understanding of the process than those with no prior exposure.

Knowledge and perceptions: Overall knowledge about anesthesia was limited. Less-educated participants frequently held misconceptions: for example, a substantial portion believed that anesthesiologists were "just technicians" or that anesthesia is managed by the surgeon rather than a specialist. In contrast, patients with higher education were significantly more likely to answer knowledge questions correctly. Notably, only about 40% of patients with lower education correctly identified that an anesthesiologist is a medical doctor, whereas this recognition rate was much higher among better-educated patients. Common anxieties included fear of not waking up after anesthesia or experiencing intraoperative pain. Those fears were more pronounced in first-time surgical patients.

QUESTION	MEAN	MEDIAN	MODE	SD	MIN	MAX
TYPE OF ANESTHEISA	**3.38**	**3**	**5**	**1.5**	**1**	**5**
ROUTE OF GA ADMINISRATION	**3.23**	**4**	**4**	**1.09**	**1**	**4**
ROUTE OF RA ADMINISTRATION	**1.89**	**1**	**1**	**1.38**	**1**	**4**
WHO MAKE YOU UNCONSCIOUS	**3.14**	**3**	**3**	**1.29**	**1**	**5**
PLACE WHERE THE ANESTHESIOLOGY ARE NVOLVED	**1.14**	**1**	**1**	**0.53**	**1**	**7**
ROLE OF ANESTHESIOLOGY IN OT	**1.93**	**1**	**1**	**2.11**	**1**	**7**

Table 4 : COMPARSION OF INFORMATION REGARDING ANAETHESIA AND ANESTHIOLOGIST AMOUNG THE PRATICITPANTS

Surgical specialties: The distribution of planned surgeries spanned various specialties. General surgery (type 3) was the most common (45 patients, 47%), followed by type 1 and type 4 procedures (17% each), type 2 (15%), and type 5 (obstetrics-gynecology, 4%).



These results indicate that higher education and prior anesthesia exposure were associated with better understanding and less fear. For instance, higher-educated patients more often knew the types of anesthesia and the anesthesiologist's responsibilities, whereas lower-educated patients had significant gaps in knowledge and more misconceptions.

DISCUSSION

This study examined the relationship between educational level, previous anesthesia exposure, and patients' knowledge and perception regarding anesthesia and the role of anesthesiologists. The findings highlight how demographic variables—particularly **age, gender, education, and surgical experience—**influence understanding and attitudes toward anesthesia care.

Age and Anesthetic Implications

The age distribution in this study (15–70 years, mean 42.4 ± 14 years) reflects a broad and inclusive adult population. The nearly equal representation of younger (51%) and older (49%) adults indicates that anesthesia services are essential across all life stages. This balance underscores that elective surgical procedures—and consequently anesthesia care—are not restricted to a specific age group. Age has significant implications for anesthetic management. Younger patients generally present with fewer comorbidities and demonstrate rapid physiological recovery, whereas older patients may have chronic illnesses such as diabetes, hypertension, or reduced organ reserve, increasing anesthesia risk. Therefore, anesthesiologists must adopt **age-sensitive anesthesia planning**, customizing drug selection, monitoring, and perioperative care to suit individual patient profiles.

These findings are consistent with previous research suggesting that age influences both anesthetic response and patient perception of risk. Older adults often express higher anxiety levels due to comorbidities, while younger adults are more concerned with postoperative discomfort and recovery time. Personalized preoperative counselling tailored to age-related concerns can help improve compliance and satisfaction.

Gender Distribution and Awareness

A slight male predominance (56% males, 44% females) was observed. This pattern may reflect societal and healthcare-seeking trends rather than gender-based differences in surgical needs. Studies suggest that men

may present more frequently for elective procedures due to occupational factors, whereas women may face barriers such as caregiving roles or limited access to healthcare facilities. Although the gender gap in this study was modest, awareness and anxiety levels may differ by sex. Literature indicates that **female patients typically report higher preoperative anxiety**, possibly due to greater health-related vigilance, while men may underreport fear or pain. Recognizing these behavioral differences allows anesthesiologists to provide gender-sensitive communication and reassurance.

Diversity of Surgical Procedures

The variation in surgical types (type 3 being the most common, 47%) reflects the heterogeneity of anesthetic practice in tertiary care. Frequent exposure to common procedures may provide patients with more peer-based information and familiarity, reducing anxiety. Conversely, less frequent or complex procedures (e.g., type 5 – obstetric/gynecologic) were associated with higher apprehension due to unfamiliarity. The type of surgery also dictates the anesthesia modality—general, regional, or local—and therefore shapes the patient's expectations and experiences. These findings reinforce the importance of **procedure-specific preoperative education**, ensuring that patients understand the nature, purpose, and safety of anesthesia appropriate to their surgery.

Educational Level and Perception

Education emerged as a **critical determinant** of patient understanding. Nearly half of the study population had only primary or higher secondary education, and 11.6% were illiterate. This limited literacy profoundly affected comprehension of anesthesia concepts. Less-educated patients frequently misidentified anesthesiologists as technicians or assistants, echoing findings by Baaj et al. (2010) and Karmakar et al. (2018)(1,3), who reported that less than half of respondents recognized anesthesiologists as medical doctors. In contrast, graduates and postgraduates demonstrated superior understanding of anesthesia types, pre-anesthetic check-ups, and the anesthesiologist's clinical responsibilities.

Health literacy directly influences patient autonomy, consent, and satisfaction. Patients with lower education levels are often hesitant to ask questions, more anxious, and dependent on family members for decision-making. For such individuals, **visual aids, simplified explanations, and communication in the local language** are essential. Conversely, more educated patients seek detailed discussions, prefer involvement in decision-making, and express confidence in anesthesia safety.

Impact of Previous Anesthesia Exposure

Prior exposure to anesthesia positively correlated with reduced fear and better understanding of the anesthetic process. First-time surgical patients commonly feared "not waking up" or "feeling pain during surgery," mirroring widespread myths. Previous exposure, especially with favorable outcomes, built trust and familiarity, thereby decreasing anxiety. This finding aligns with reports from Moktan et al. (3), who observed that patients with prior anesthesia experience exhibited greater confidence and fewer misconceptions.

Clinical and Educational Implications

Overall, this study reinforces the necessity of **targeted patient education** as part of routine preoperative care. Understanding that knowledge gaps are often rooted in low literacy or lack of experience, anesthesiologists should adopt individualized educational approaches. Structured counselling sessions, educational leaflets in vernacular languages, and audiovisual demonstrations could significantly enhance comprehension and trust. Moreover, integrating anesthesia awareness into community health programs or pre-surgical workshops may bridge the public knowledge gap about this specialty.

CONCLUSION

This study highlights that anesthesia care must be individualized, taking into account patients' age, education, gender, and prior surgical experiences. Age-sensitive approaches ensure safety and comfort across all life stages. Educational level and previous anesthesia exposure significantly shape patient awareness and perceptions. Clear, culturally sensitive communication can reduce fear and improve trust. Enhancing public education through hospital and community initiatives is vital to strengthen awareness and confidence in anesthesiology

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