Section: Anaesthesia

Original Research Article

KNOWLEDGE ATTITUDE AND PERCEPTION ABOUT ANAESTHESIA AND ANAESTHESIOLOGIST IN PATIENTS WITH AND WITHOUT PRIOR ANAESTHESIA EXPOSURE

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ABSTRACT

Background: Despite advances in perioperative care, public awareness regarding anaesthesia and the role of anaesthesiologists remains limited. Previous exposure to anaesthesia may influence patients' knowledge, attitudes, and perceptions, but evidence is limited.

Materials and Methods: This comparative questionnaire-based study was conducted at a tertiary care centre after institutional ethics approval. A total of 1,200 adult patients (18–65 years) scheduled for elective surgery were enrolled and divided into two groups: Group A (n=600), with at least one previous anaesthesia exposure within the last 10 years, and Group B (n=600), with no prior anaesthesia exposure. A validated bilingual questionnaire assessed demographic characteristics, knowledge, fears, sources of information, postoperative experiences, satisfaction, and willingness to know more about anaesthesia. Knowledge scores were categorized as poor, average, or good. Statistical analysis was performed using SPSS version 23, with $p<0.05$ considered significant.

Results: Patients with previous anaesthesia exposure demonstrated significantly better knowledge than those without exposure (good knowledge: 10.4% vs. 2.0%; poor knowledge: 44.2% vs. 59.5%; $\chi^2=51.07$, $p<0.001$). However, overall awareness remained low in both groups. Pain was the commonest preoperative fear, particularly among patients without previous exposure (60% vs. 45%). Previous anaesthesia experience was associated with greater concern regarding intraoperative awareness. Prior exposure and surgeons were the major sources of information, whereas media contributed minimally. Although knowledge was higher in Group A, patient satisfaction (81.7% vs. 89.3%) and willingness to meet an anaesthesiologist again (94.8% vs. 97.7%, p=0.006) were greater among patients without previous exposure.

Conclusion: Previous anaesthesia exposure improves patient knowledge but does not eliminate misconceptions or perioperative anxiety. Structured preoperative counselling by anaesthesiologists is essential to enhance patient awareness, address misconceptions, improve communication, and optimize the overall perioperative experience.

Keywords: Anaesthesia, anaesthesiologists, questionnaire, public awareness.

INTRODUCTION

Perioperative care is a critical phase in the surgical process, encompassing the preoperative, intraoperative, and postoperative periods. Anesthesiologists play a vital role during each stage, ensuring patient safety, pain management, and overall well-being. However, there is limited

research exploring patient's awareness and perception of the anesthesiologist's role in perioperative care.[1-4] Understanding patients' perspectives is essential for optimizing communication, patient satisfaction, and overall healthcare outcomes. Although public awareness regarding healthcare has improved over the past few decades, knowledge about anaesthesia and the role of anaesthesiologists remains limited. Many patients are unaware that anaesthesiologists are physicians responsible for preoperative assessment, planning and administering anaesthesia, intraoperative monitoring, postoperative pain management, and critical care.[5,6] Some patients are even unaware that anaesthesiologists are qualified doctors.[7-9] Limited understanding of pre-anaesthetic assessment and its benefits may contribute to anxiety and misconceptions.[6,9] Therefore, assessing patients' knowledge, attitudes, and perceptions during the pre-anaesthetic evaluation provides an opportunity to address misconceptions, alleviate fears, and improve perioperative care.

By examining patients' knowledge, experiences, and perceptions, we can identify areas of improvement, enhance patient education efforts, and strengthen the patient-provider relationship.

This study aimed to investigate and compare the knowledge, attitudes, and perceptions about anesthesia and anesthesiologists in patients with prior anesthesia exposure and those without such exposure. assess patient awareness and perception of the anaesthesiologist's role in perioperative care through a questionnaire-based approach. By gaining a better understanding of patients' perspectives, healthcare providers can bridge the gap between patient expectations and the actual delivery of anaesthesia care, leading to enhanced patient outcomes and increased satisfaction. The results of this study may contribute to patient-centered care and the improvement of the surgical experience for individuals undergoing procedures. Furthermore, the study's findings can enforce educational initiatives for patients, fostering a more informed and engaged patient population.

MATERIALS AND METHODS

This comparative questionnaire based study was conducted in a tertiary care centre after Ethical committee approval(134X/11/13/2023-IEC/DHR/101) and CTRI rgistration (CTRI/2025/04/084707) . The confidentiality of subjects was maintained. The study was conducted from October 2023 to March 2024 in accordance with the principles of the World Medical Association Declaration of Helsinki,1975, revised in 2013. Written informed consent was obtained from all the patients for participating in the study.

Inclusion Criteria

- Age 18-65 years
- Posted for elective surgery
- Informed consent for participation.

Exclusion Criteria

- Inability to comprehend and communicate.

This comparative analysis study involved two groups of participants:

Group A consist of patients who have had at least one prior exposure of anaesthesia, in last 10 years

Group B comprise patients who have not underwent any surgery under anaesthesia

After meeting the inclusion criteria a structured questionnaire taken from previous study [4] was given to them in preoperative area. This questionnaire was available in both the language (English and Hindi)and was explained verbally to those who are illiterate It was used to assess participants' knowledge, attitudes, and perceptions regarding anaesthesiologists. The questionnaire included items related to the role of anaesthesiologists, their qualifications, responsibilities, and patient safety. This questionnaire consist of 3 sections, section 1: demographic data, section 2: pre-operative questions and section 3: post-operative questions comprising total of 16 questions.

Section 2 comprising of 12 questions will be asked preoperatively.

Question no 1 was asked to know about previous exposure

Question no. 2-10 were asked to judge patient’s knowledge about anaesthesia and anaesthesiologist. Scoring done on these eight questions was as follows:

Correct response – 1 mark

Incorrect response/ don’t know - 0 mark.

Thus, maximum marks - 9, minimum – 0

The interpretation of score

< 3- poor, 3-6 - average, > 6 - good knowledge about anaesthesia.

Next 3 questions were asked to know about patients fears and apprehensions before surgery and the source of information about anaesthesia given by the patients

Section 3 consisting of 4 questions were asked to the patients six hours after surgery. The purpose of these questions is to compare if the pre-operative fears before surgery were the same as the discomforts experienced postoperatively or not, level of satisfaction regarding quality of anaesthesia services and willingness to know about anaesthesiologist in case of future surgery.

The illiterate people were asked to express it as a fraction of rupee while the literates expressed it as percentage which will be interpreted as very poor, poor, fair, good and very good.

Sample size calculation

- The sample size for the study is based on **Naithani et al (2007)** [4], who reported the mean outcome measure in the two groups as follows:

Group 1: Mean ± SD□2.96±2.049

Group 2: Mean ± SD□2.77±2.21

- The sample size required in each arm of the study was calculated according to the formula given by Snedecor & Cochran (1989) [10]:

$$\text{Sample size (N)} = 1+\frac{2(Z_{\alpha} + Z_{1-\beta})^2 \sigma^2}{\Delta^2}$$

Where:
σ (Pooled SD) =2.131 & δ (Difference of Means)=0.19.
However we will calculate a sample size to detect a difference as low as 0.5
Type I error (α) = 5%, Z_{α} (Value of Standard Normal Distribution for α =5%) = 1.96
Type II error (β) = 5%, Power (1 – β) = 95%, $Z_{1-\beta}$ = 1.65
Based on the formula given above, using the mentioned values, the sample size required is:

$$\text{Sample size (N)}=1 +\frac{2(1.96 + 1.65)^2\ 2.131^2}{0.5^2} = 474.5 \approx 500$$

Thus, assuming 95% Power and 95% Confidence interval, the minimum calculated sample size for each arm is **500** (total = 1000).

Statistical Analysis

Data were coded and recorded in MS Excel spreadsheet program. SPSS v23 (IBM Corp.) Descriptive statistics were elaborated in the form of means/standard deviations and medians/IQRs for continuous variables, and frequencies and percentages for categorical variables. Group comparisons for continuously distributed data was made using independent sample 't' test when comparing two groups, and One-Way ANOVA when comparing more than two groups. Post-Hoc pairwise analysis was performed using Tukey's HSD test in case of One-Way ANOVA to control for alpha inflation.

If data was found to be non-normally distributed, appropriate non-parametric tests in the form of Wilcoxon Test/Kruskal Wallis test will be used for these comparisons. Chi-squared test was used for group comparisons for categorical data. In case the expected frequency in the contingency tables was found to be <5 for >25% of the cells, Fisher's Exact test was used instead. Linear correlation between two continuous variables were explored using Pearson's correlation (if the data will be normally distributed) and Spearman's correlation (for non-normally distributed data). Statistical significance will be kept at $p < 0.05$

RESULTS

A total of 1200 patients were involved in the study with response rate of 100% with 600 in each group. Group A (600 patients) and Group B (600 patients). The study compared demographic data (Table 1), perception about anaesthesia and anaesthesiologist (Figure 2), source of information that contribute to the public knowledge and identify gap in understanding or misconception about role of anaesthesiologist in both the groups.

As shown in Table 1, both the groups were comparable in terms of demographic data.

Table 1: Baseline Demographic data of Study Participants

Variable	Group A (n = 600)	Group B (n = 600)	p-value
Age (years)	45.2 ± 12.3	44.8 ± 11.9	0.62
Gender (M/F)	320 / 280	310 / 290	0.48

Patients knowledge about anaesthesia and anaesthesiologist was judged as per the answer from question no 2-10. (Figure 1) Group A had a lower proportion of participants with poor knowledge (44.2% vs. 59.5%), average knowledge (46.6% vs 38.5%) and a higher proportion with good knowledge (10.4% vs. 2.0%) compared with Group B. The distribution of knowledge categories differed significantly between the groups ($\chi^2(2) = 51.07$, $p < 0.001$).

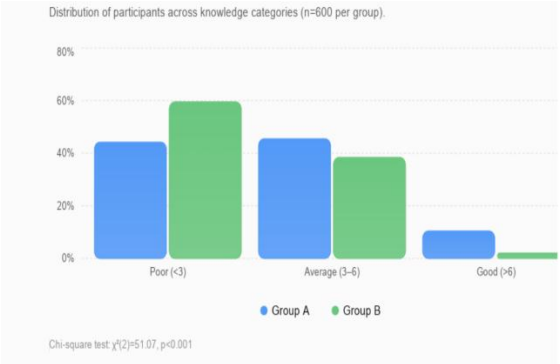

Figure 1: Comparison of knowledge levels between Group A and Group B.

The participants were asked about the source of prior information regarding anaesthesia and anesthesiologist in both the groups. Figure 2]

Figure 2: Source of information about anesthesia and anaesthesiologist in both the groups

Table 2: Participants perception response were assessed on the basis of question number 11,13 & 14

PRE OPERATIVE FEAR	WITH EXPOSURE TO ANESTHESIA (n = 600)	WITHOUT EXPOSURE TO ANESTHESIA (N = 600)
Pain	45% (270)	60% (360)
Fear of being aware during surgery	20% (120)	15% (90)
Death during surgery	15% (90)	12% (72)
Needle prick	10% (60)	8% (48)
Others	10% (60)	5% (30)
POST OPERATIVE FEAR		
Pain	48% (288)	62% (372)
Nausea	18% (108)	14% (84)
Vomiting	14% (84)	10% (60)
Won't regain consciousness	12% (72)	9% (54)
Others	8% (48)	5% (30)
Type of Anaesthesia		
General anaesthesia (GA)	348 (58.0)	318 (53.0)
Regional anaesthesia	252 (42.0)	282 (47.0)
INTRAOPERATIVE COMPLAINTS		
Difficulty in breathing	4 (1.6)	6 (2.1)
Cold/Shivering	76 (30.2)	99 (35.1)
Nausea	50 (19.8)	65 (23.0)
Vomiting	38 (15.1)	51 (18.1)
Other complaints	8 (3.2)	11 (3.9)
POST OPERATIVE COMPLAINTS		
Pain	300 (50.0)	330 (55.0)
Headache	60 (10.0)	72 (12.0)
Difficulty in breathing	18 (3.0)	24 (4.0)
Cold/Shivering	90 (15.0)	108 (18.0)
Nausea	132 (22.0)	156 (26.0)
Vomiting	180 (30.0)	210 (35.0)
Burning in throat	240 (40.0)	270 (45.0)
Difficulty in speaking	42 (7.0)	54 (9.0)
Awareness of tube in throat	60 (10.0)	72 (12.0)
Hungry	168 (28.0)	186 (31.0)
Thirsty	252 (42.0)	276 (46.0)
Regained consciousness after long time	30 (5.0)	42 (7.0)
Other complaints	18 (3.0)	24 (4.0)
No discomfort	96 (16.0)	72 (12.0)
Awareness of tube in throat	60 (10.0)	72 (12.0)

Satisfaction response was compared in both the groups and Group B (89.3%)reported higher satisfaction than Group A (81.7%).

Group B was more willing to meet the anaesthesiologist again (97.7%vs 94.8%p=0.006).

DISCUSSION

This large, single-centre, questionnaire-based study demonstrates that prior anaesthesia exposure is associated with better knowledge but does not uniformly improve perceptions or reduce fears. Patients without previous exposure had markedly poorer knowledge yet reported higher satisfaction and greater willingness to consult an anaesthesiologist again. These findings align with and extend a consistent body of literature showing widespread public misunderstanding of the anaesthesiologist's role, while also underscoring that satisfaction and trust appear to be driven more

by the quality of experienced care and communication than by baseline knowledge.

Knowledge: exposure improves scores but absolute levels remain low

In our study, only 10.4% of previously exposed patients (Group A) had good knowledge compared with 2.0% in the non-exposed group (Group B), while poor knowledge was observed in 44.2% versus 59.5%, respectively ($\chi^2(2) = 51.07$, $p < 0.001$). These findings suggest that previous anaesthetic exposure is associated with better awareness, although overall knowledge remains poor. Similar findings have been reported by other studies where prior exposure and higher education were associated with better knowledge, yet fewer than half of patients correctly identified the anaesthesiologist's perioperative role.[4,11,12] However, in a study there was no association between previous surgery or anaesthetic exposure and patient knowledge, indicating that the effect of prior experience may be inconsistent. Overall, the evidence suggests that passive exposure alone is insufficient, and structured patient education during the pre-anaesthetic evaluation is essential to improve awareness.[13]

Fears and misconceptions: different profiles, persistent anxieties

Preoperatively, pain was the dominant fear in both groups in our cohort, but more pronounced in non-exposed patients (60% vs 45%). Fear of intraoperative awareness was higher in the exposed group (20% vs 15%), plausibly reflecting "learned" concerns from prior experiences of endotracheal intubation, sore throat, or intraoperative sensations. Postoperatively, actual discomforts (pain, nausea, vomiting, throat symptoms) often matched or exceeded preoperative fears, especially in Group B, indicating that anticipation underestimates the postoperative symptom burden. These patterns are consistent with other studies .Naithani et al. (2007) found that 61.3% of patients had preoperative fears (mainly pain and death), while only 16.7% reported actual postoperative discomfort, highlighting a mismatch between fears and experienced symptoms.[4] Studies evaluating perceptions before and after surgery similarly show that preoperative anxiety centres on pain, death, and awareness, while postoperative symptoms—particularly pain, nausea/vomiting, and airway-related discomfort—remain common even when satisfaction is high. Surveys have reported that patients frequently lack detailed understanding of consented risks, and that anxiety about awareness and death persists despite generally good intraoperative safety.[14] Our finding of higher awareness-related fear in the exposed group adds nuance: experience may reduce some misconceptions but simultaneously heighten salience of specific, previously encountered adverse sensations.

Sources of information and knowledge gaps Patients with previous anaesthetic exposure most commonly reported that they already knew about anaesthesia, whereas those without prior exposure primarily obtained information from their surgeon. Friends or relatives were a secondary source in both groups, while television and newspapers contributed little. Similar findings have been reported by Uma and Hanji and Mathur et al., who found that surgeons and previous healthcare encounters were the main sources of information, with limited contribution from anaesthesiologists and the media.[4,15,16] These findings highlight the need for structured pre-anaesthetic counselling by anaesthesiologists to improve patient awareness, rather than relying solely on previous experience or surgeon-led information. Multiple studies describe common misconceptions: anaesthesiologists viewed primarily as "drug administrators" or "pain relief providers," with limited recognition of their roles in preoperative optimisation, intraoperative monitoring, critical care, and pain medicine.

Satisfaction and willingness to engage: experience versus knowledge: In our cohort, satisfaction was higher in the non-exposed group (89.3% vs 81.7%), and they were more willing to meet the anaesthesiologist again (97.7% vs 94.8%, $p = 0.006$). This counterintuitive pattern—better knowledge but slightly lower satisfaction and willingness in the exposed group—suggests that satisfaction is driven more by immediate perioperative experience (pain control, communication, symptom management) than by baseline knowledge. Patients with prior exposure may have higher expectations or be more critical based on previous experiences, leading to marginally lower satisfaction despite better knowledge. Large-scale analyses of anaesthesia-specific patient satisfaction surveys show that patient and procedural factors often have weak or no association with ratings of the anaesthesiologist; instead, factors such as communication, perceived attentiveness, and postoperative symptom control are more influential.[17]

Our findings suggest that knowledge is amenable to improvement through prior exposure, whereas satisfaction and willingness to engage are shaped more by the quality of the most recent perioperative encounter, with optimal pain control, effective management of postoperative nausea and vomiting, and clear communication emerging as key determinant.

Strengths

- Large sample size (n = 1200) with 100% response rate provides robust estimates and good power to detect differences.
- Clear comparison of exposed vs non-exposed patients using a structured, previously validated questionnaire allows meaningful comparison with earlier studies.
- Inclusion of both pre- and post-operative assessments enables comparison of anticipated fears versus actual postoperative discomfort, which is often missing in smaller surveys.

Limitations

- Single-centre, tertiary-care setting may limit generalisability to community hospitals or different cultural contexts.
- Knowledge scoring is based on a limited set of 9 questions; while practical, it may not capture the full spectrum of understanding (e.g., ICU role, pain medicine, preoperative optimization
- The study does not report detailed multivariable analyses adjusting for education, occupation, type of surgery, or anaesthetic technique, all of which can influence knowledge and perceptions.

CONCLUSION

Previous exposure to anaesthesia was associated with significantly better knowledge regarding anaesthesia and the role of anaesthesiologists; however, the overall level of awareness remained suboptimal in both groups. Misconceptions about anaesthesiologists' responsibilities and persistent perioperative fears, particularly regarding pain and intraoperative awareness, were common irrespective of prior exposure. Improving communication during the preoperative assessment can address misconceptions, reduce anxiety, strengthen informed consent, and enhance patient-centred perioperative care.

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