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RESEARCH ARTICLE
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KNOWLEDGE, ATTITUDE AND PERCEPTION OF ANAESTHESIA AND PRACTICE OF ANAESTHESIA DURING NON-EMERGENCY SURGERY- A CROSS-SECTIONAL STUDY

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INTRODUCTION:

Enhancing Patient Awareness and Addressing Apprehensions in Anaesthesia:

Anaesthesia plays a pivotal role in modern healthcare, ensuring patient safety and comfort during surgical procedures. It achieves this by effectively managing pain and altering levels of consciousness[1]. However, a significant issue within the field is the inadequate knowledge among the general population regarding anaesthesia, which often leads to unwarranted fears and misconceptions about its rare risks and complications[2].

One contributing factor to this knowledge deficit is the minimal interaction anaesthesiologists typically have with conscious patients compared to other healthcare professionals[3]. This limited contact can exacerbate patient apprehensions, resulting in severe anxiety before surgery. Anxiety can trigger activation of the sympathetic nervous system, potentially causing elevated blood pressure, tachycardia, and arrhythmias, which may negatively affect surgical outcomes[4].

The process of informed consent is crucial for addressing these challenges. Effective informed consent involves active communication between the healthcare provider and the patient. It ensures the treating physician explains the nature and purpose of the proposed procedure, along with the potential risks and benefits, fostering trust and alleviating anxiety[5].

As the field of anaesthesiology evolves, there is an increasing need to educate individual patients and the broader public about the role of anaesthesiologists. Efforts should focus on providing comprehensive information about anaesthesia techniques, the anaesthesiologist's responsibilities, and the associated risks and benefits. Additionally, analyzing patient knowledge, addressing their fears, and identifying effective strategies for enhancing public awareness are essential for improving patient satisfaction and the overall quality of anaesthesia services.

The present study aims to evaluate patients' knowledge about the role of anaesthesiologists, their fears and apprehensions before surgery, their postoperative complaints, and their satisfaction with

anaesthesia services. These findings will help identify gaps in patient education and provide actionable insights for improving communication and care in anaesthesiology.

AIM & OBJECTIVES:

To evaluate patients' knowledge about the role of anaesthesiologists, their fears and apprehensions before surgery, postoperative complaints, and their satisfaction with anaesthesia services to identify gaps in understanding and improve patient education and communication.

MATERIALS AND METHODS

This cross-sectional study was conducted at a tertiary care medical college hospital over a period of 12 months, from December 2023 to November 2024. The study recruited 100 adult patients scheduled for elective surgical procedures. Ethical approval was obtained from the institutional ethics committee in accordance with established ethical guidelines for biomedical research on human participants[6]. Written informed consent was obtained from all participants before enrolment.

Study Design and Questionnaire

A structured questionnaire, developed in Tamil and English, was employed to ensure linguistic accessibility for a diverse patient population[7]. Recognizing the stress and apprehension patients may experience preoperatively, each question was verbally explained to address potential comprehension challenges[8].

The study was divided into two sessions:

1. Preoperative Session

- Eight questions were administered to evaluate patients' baseline knowledge about anaesthesia. Scoring criteria included:
  - Correct response: 1 point
  - Incorrect or "don't know" responses: 0 points.
- Scores were categorized as:
  - Poor (<3)
  - Average (3–6)
  - Good (>6) [9].
- Additional questions assessed the sources of patients' information about anaesthesia, such as healthcare professionals, media, or family, and documented their fears or apprehensions before surgery[10].

2. Postoperative Session

- Conducted six hours post-surgery, this session evaluated:
  - Intraoperative and postoperative complaints, including pain, nausea, and discomfort.
  - Satisfaction with the quality of anaesthesia services.
  - Willingness to engage with anaesthesiologists for future procedures[11].
- Patient satisfaction ratings were adapted based on literacy levels:
  - Illiterate and rural patients expressed satisfaction as fractions of a rupee.
  - Literate patients rated satisfaction as percentages.
- Ratings were classified into five categories: Very Poor, Poor, Fair, Good, and Very Good[12].

Statistical Analysis

Statistical analyses were performed to explore the relationships between patients' literacy levels, prior exposure to anaesthesia, and their knowledge about anaesthesia:

- **One-Way ANOVA** was employed to analyse the correlation between literacy levels and knowledge scores[13].

• **Student's t-test** was utilized to assess the association between prior exposure to anaesthesia and knowledge scores[14].

This comprehensive methodology aimed to identify gaps in patient knowledge, document apprehensions, and evaluate satisfaction levels to guide the development of effective communication and educational strategies within the field of anaesthesiology[15].

RESULTS:

Patient Demographics and Background

The study included 100 patients, with a gender distribution of 57% male and 43% female participants. Educational backgrounds were categorized as follows:

• **Illiterate**: 10%
• **Primary education**: 23%
• **Secondary education**: 31%
• **Class XII or graduate level**: 31%
• **Postgraduates**: 8%

Patients were scheduled for surgical procedures in the following specialties:

• General surgery: 30%
• Orthopaedics: 25%
• Obstetrics and gynaecology: 20%
• ENT procedures: 25%

Among the participants, 54% reported prior surgical experience, representing a subset potentially familiar with anaesthesia-related processes.

Knowledge and Awareness about Anaesthesia

A significant majority (95.67%) acknowledged that anaesthesia is essential for surgical procedures. However, 4.33% of the participants expressed uncertainty about its necessity.

Perception of Anaesthesia Providers

• Only 42.67% of the patients were aware that anaesthesia is administered by anaesthesiologists.

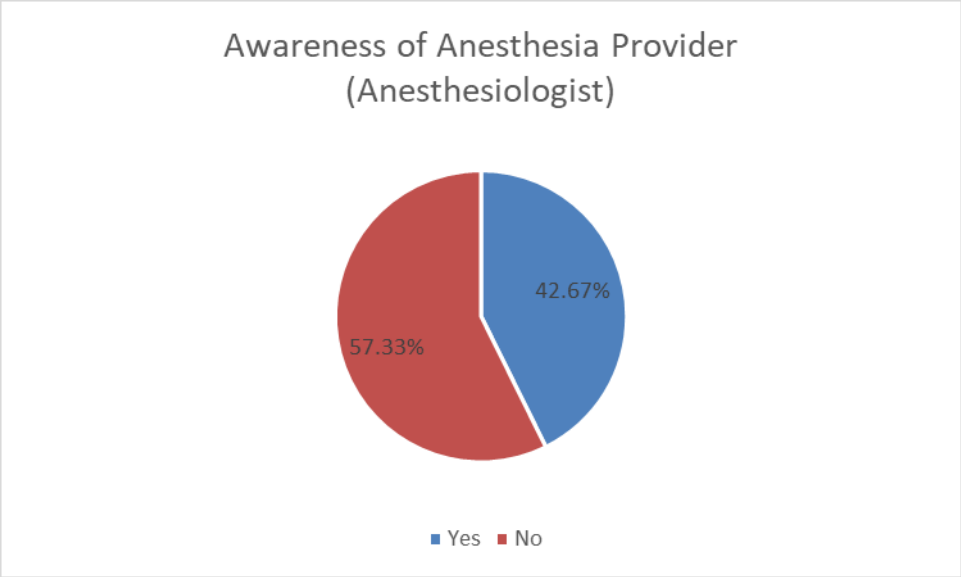

Figure 1: Awareness of Anaesthesia Provider (Anaesthesiologist)

• Regarding the anaesthesiologist's role in the operating theatre, 27.33% knew they monitor vital signs during surgery.

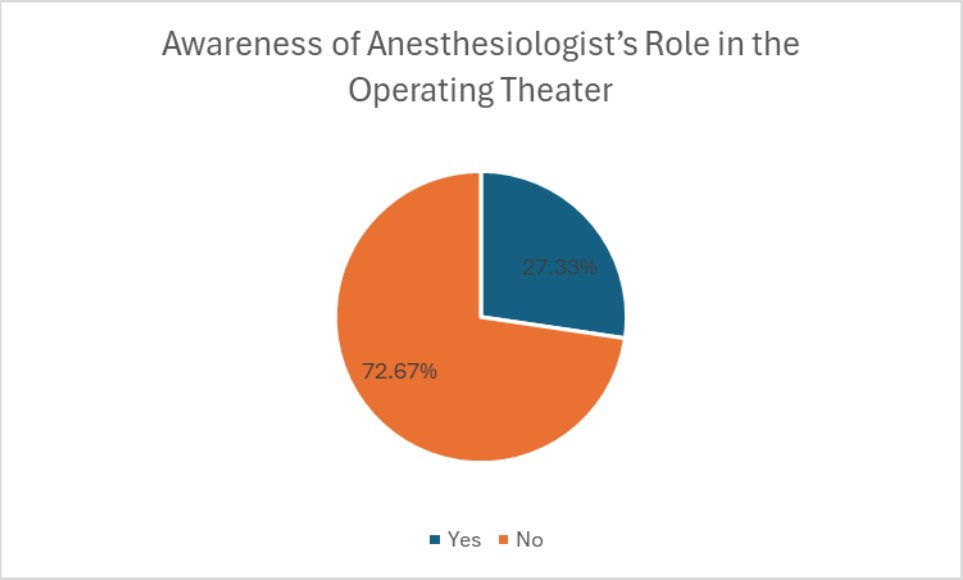

Figure 2: Anaethesiologist role in OT

Knowledge of Extended Roles of Anaesthesiologists

Awareness of anaesthesiologists' roles outside the operating room was limited:

- Intensive Care Unit (ICU) care: 7.33%
- Painless labour: 12.67%
- Chronic pain management: 4.67%

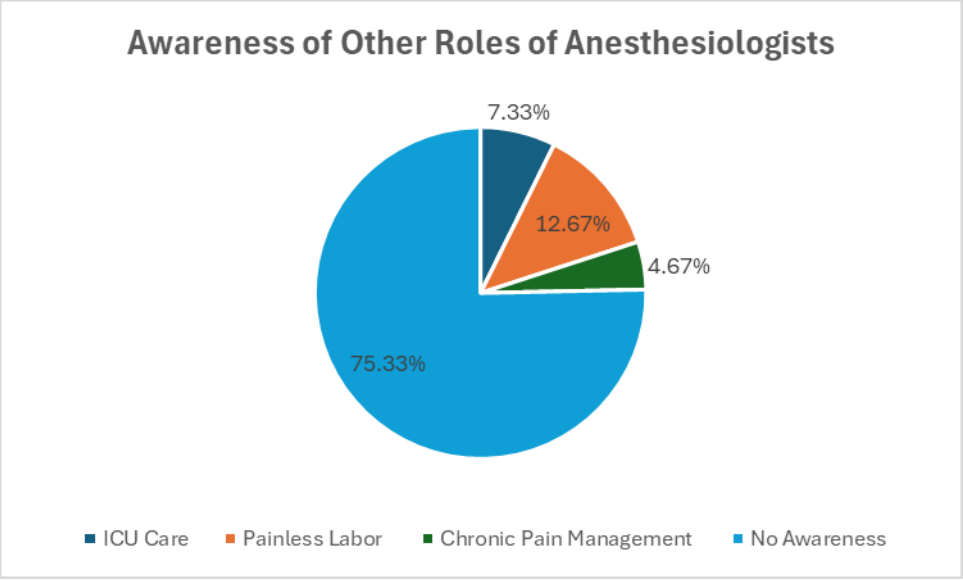

Figure 3: Awareness of Other Roles of Anaesthesiologists

Risk Awareness and Informed Consent

- 52% of patients understood that factors such as coexisting diseases (e.g., diabetes, hypertension, asthma), substance use (alcoholism or smoking), or advanced age could increase risks during anaesthesia.
- Only 34.67% were aware of the content of consent forms they or their relatives had signed, and merely 15.33% understood anaesthesia-related risks mentioned within these forms.

Patient Knowledge Scores and Statistical Analysis

Patient knowledge was assessed using a nine-question scoring system. Results revealed:

- Poor knowledge (<3): 62%

- Average knowledge (3–6): 32%
- Good knowledge (>6): 6% (Fig. 3).

Correlation with Literacy Levels

A statistically significant correlation was observed between patient literacy levels and their knowledge about anaesthesia ($P<0.001$). However, even the highest literacy group demonstrated only average knowledge scores.

Correlation with Prior Anaesthesia Exposure

No significant correlation was found between prior exposure to anaesthesia and patient knowledge ($P>0.1$).

Sources of Information

The sources of patient knowledge about anaesthesia were as follows:

- Pre-existing knowledge: 64%
- Friends and relatives: 16%
- Media (TV or newspapers): 10.67%
- Surgeons: 8%
- Anaesthesiologists: 1.33%

Preoperative Fears and Postoperative Complaints

Preoperative Fears

- 62% of patients reported fears prior to surgery, with specific concerns including:
  - Pain during surgery: 36%
  - Awareness during surgery: 22%
  - Death during surgery: 16.67%
  - Needle pricks: 14%.
  - Postoperative pain: 11.33%

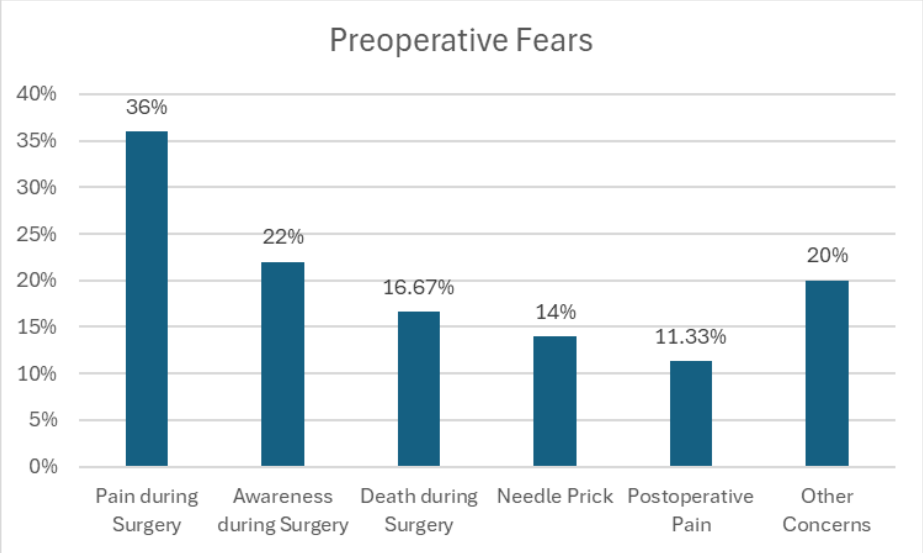

Figure 4 : Preoperative fears

Postoperative Complaints

Post-surgery, discomforts were assessed six hours postoperatively:

- 83% of patients reported no discomfort during surgery.
- Common intraoperative complaints included pain (9%), cold and shivering (5%), nausea and vomiting (3%), and awareness during general anaesthesia (2%).

• 72% reported postoperative discomfort, with the most common being pain at the surgical site (50%) and nausea and vomiting (24%).

Satisfaction and Future Inclination

An overwhelming 99.33% of patients expressed satisfaction with anaesthesia services, categorized as follows:

• Very good: 70%
• Good: 22%
• Fair: 7.33%

Only 0.67% rated the services as poor.

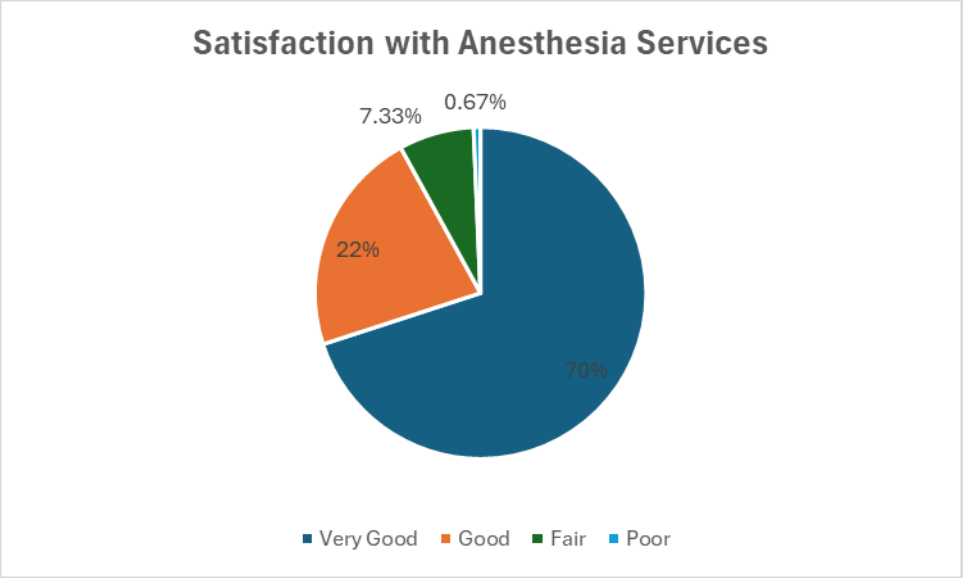

Figure 5 : Satisfaction with Anaesthesia Services

Future Interest in Anaesthesia Education

Many patients (**70%**) expressed an interest in learning more about anaesthesia and the role of anaesthesiologists, which reflects a desire for better understanding and improved communication regarding anaesthesia.

Knowledge Assessment and Literacy Correlation

A scoring system based on 9 questions related to anaesthesia knowledge was applied to assess patient understanding. The following findings were observed:

• **62%** of patients had poor knowledge about anaesthesia, with scores under 3.
• **6%** of patients demonstrated good knowledge with scores above 6.

Statistical analysis showed a significant positive correlation between literacy levels and anaesthesia knowledge ($P < 0.001$), with higher literacy levels associated with better knowledge. However, no significant correlation was found between prior exposure to anaesthesia and knowledge levels ($P > 0.1$).

The mean scores for patients were analysed according to their literacy levels, and a trend was observed: patients with higher educational levels tended to score better. However, even those in the highest literacy categories (postgraduate education) did not demonstrate exceptional knowledge about anaesthesia, as none had a score exceeding 6. This indicates that while literacy influences knowledge, the general understanding of anaesthesia remains average across all literacy groups.

Sources of Information

When asked about the sources of their anaesthesia-related knowledge:

- **64%** of patients had prior knowledge ("knew it beforehand")
- **16%** received information from friends or relatives.
- **10.67%** gained information through TV or newspapers.
- **8%** learned about anaesthesia from the surgeon.
- **1.33%** heard about it from the anaesthesiologist.

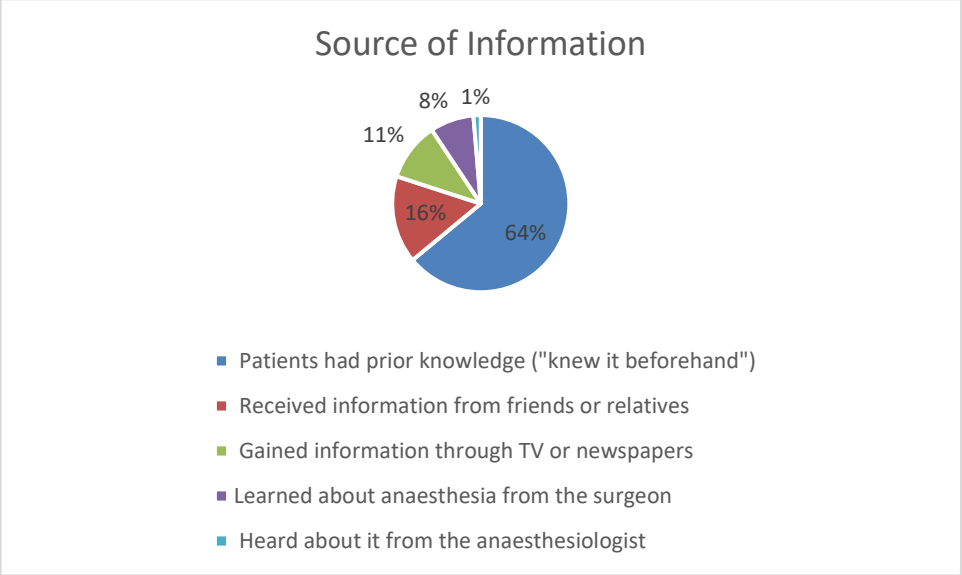

Figure 6 : Source of Information

This highlights that most patients receive their information from non-medical sources, emphasizing the need for better patient education directly from healthcare professionals.

DISCUSSION

In our study, although most patients acknowledged the necessity of anaesthesia for surgery, a substantial proportion (58%) were unaware of the person responsible for administering anaesthesia. This finding contrasts with a study by Swinhoe et al. in the UK, where 80% of patients correctly found the anaesthesiologist as the provider of anaesthesia. The discrepancy may be attributed to the higher literacy levels and greater interaction between patients and anaesthesiologists during pre-anaesthetic assessments in developed countries like the UK. Furthermore, many patients in our study were unclear about the role of the anaesthesiologist after anaesthesia induction. This was also in contrast to studies from developed countries, where many patients recognized that anaesthesiologists are responsible for monitoring vital signs, breathing, and intravenous fluids during surgery. Similarly, the understanding of the anaesthesiologist's role outside of the operating theatre—such as in the ICU, painless labour, and pain management clinics—was minimal among our patient population. Other studies have similarly found limited awareness of these roles. Interestingly, a few patients in our study who were aware of the anaesthesiologist's role in painless labour had learned about it from articles in local newspapers. This underscores the potential role of media in educating the public about the diverse functions of anaesthesiologists.

A substantial portion of patients (nearly 50%) recognized that patients with concomitant diseases such as diabetes, hypertension, or asthma, or those who are elderly, smokers, or alcoholics, face increased risks during anaesthesia. This awareness is essential, as it highlights patient concerns regarding the safety of anaesthesia in high-risk populations.

One concerning finding from our study was the low level of awareness regarding the information provided in the consent forms. Only **34.67%** of patients were aware of the details in the consent form they or their relatives had signed, and a mere **15.33%** were aware of the risks associated with anaesthesia as outlined in the form. This could be attributed to several factors, such as the trust patients

place in their surgeons (resulting in a perception of the consent form as a mere formality), illiteracy, or the time constraints that prevent doctors from adequately explaining risk factors. Additionally, some patients mentioned difficulty reading the printed text on the forms, as it was unclear.

The sources of anaesthesia-related information varied. A significant proportion of patients (64%) indicated they "knew it beforehand," which may reflect prior experience or exposure to general information that they could not specifically recall. Friends, media, and their physicians were other sources of information. The most striking finding, however, was that only **1.33%** of patients had received information directly from an anaesthesiologist. This could be due to limited interaction between patients and anaesthesiologists, especially since pre-anaesthetic evaluations are often conducted by a different clinician than the one administering the anaesthesia.

Concerning preoperative fears, our study found that pain (both intra- and postoperative) was the primary concern for patients, followed by fears of not regaining consciousness and being aware during surgery. This is in line with studies conducted in Asian countries, where pain is the most prominent concern. In contrast, studies from Western countries have shown that the primary concern is awareness during anaesthesia and failure to regain consciousness, with pain being secondary. This difference could reflect cultural attitudes towards pain and awareness during surgery.

Interestingly, the actual discomforts experienced by patients during surgery were less frequent than anticipated. Most patients reported no discomfort during surgery, and only a few experienced pains, cold, or nausea. This highlights the importance of educating patients about what to expect during surgery to alleviate unnecessary fears and anxiety. Moreover, none of the patients in our study experienced mortality, which indicates the overall safety of anaesthesia practices at our institution.

Postoperative discomforts were more prevalent, with **72%** of patients reporting some form of discomfort after surgery, particularly pain at the surgical site and nausea. This rate was higher than that reported in a study from the Netherlands, which could be due to the limited role of anaesthesiologists in postoperative analgesia in our institution. Several improvements could be made in this area, including better management of postoperative pain, more extensive use of antiemetic drugs, and improvements in patient positioning and temperature regulation during surgery.

Despite varying levels of knowledge about anaesthesia, patient satisfaction with anaesthesia services was overwhelmingly positive. A majority of patients rated the services as "very good," reflecting their overall contentment with the quality of care received. This underscores the importance of continued efforts to maintain high standards of anaesthesia practice.

There was a clear desire among patients to learn more about anaesthesia and anaesthesiologists. This is consistent with findings from studies worldwide, including ours, where a significant number of patients expressed interest in gaining more information about anaesthesia. This suggests that patient education is an area that can be enhanced to improve patient understanding and cooperation.

Our study also found a significant correlation between literacy levels and anaesthesia knowledge, with higher literacy levels being associated with better understanding of anaesthesia. However, even patients with the highest literacy levels still exhibited only average knowledge about anaesthesia. This suggests that while literacy plays a role in enhancing knowledge, additional educational interventions are needed to improve overall patient understanding.

In contrast to studies like that of Baaj et al., we found no significant correlation between past exposure to anaesthesia and improved knowledge. This suggests that even patients with prior exposure to anaesthesia may not retain or seek detailed information about the procedure. This finding highlights the need for more effective educational strategies for patients, regardless of their previous experiences with anaesthesia.

CONCLUSION:

This study highlights the significant gap in patient knowledge regarding anaesthesia, despite the general awareness of its necessity for surgery. A majority of patients had poor knowledge about anaesthesia, with limited awareness about the role of the anaesthesiologist, the risks associated with anaesthesia, and the information contained in the consent forms. The study also revealed that literacy

levels were positively correlated with better knowledge, although even patients with higher literacy levels demonstrated only average understanding.

Patients' preoperative fears predominantly revolved around pain, awareness during surgery, and postoperative discomfort. However, most patients reported minimal discomfort during surgery and expressed high satisfaction with anaesthesia services. The majority of patients also showed a keen interest in gaining more information about anaesthesia and the role of the anaesthesiologist, underscoring the need for better patient education.

Efforts should be directed towards improving patient education through clearer communication during preoperative consultations and incorporating anaesthesiologists in the information dissemination process. Enhanced education can help reduce misconceptions and alleviate anxiety, ultimately leading to improved patient cooperation and satisfaction. Additionally, more time should be allocated for patient-anaesthesiologist interaction to ensure patients are well-informed and confident about the anaesthesia process.

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