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The Silent Guardian of Operating Room Patients' Knowledge and Perception About Anesthesia and Anesthetists at a Tertiary Care Hospital

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ABSTRACT

The role of anesthesiologists in perioperative care is significant, but it is frequently neglected. The knowledge and perception of anesthesia and anesthesiologists can play a major role in influencing the experience and collaboration of patients during the perioperative period. **Objective:** To evaluate the level of knowledge and perceptions toward anesthesia and the role of anesthesiologists among patients. **Methods:** It was a cross-sectional study that was conducted from December 2025 to January 2026 at Sindh Institute of Urology and Transplantation (SIUT) in Karachi. Non-probability consecutive sampling was applied to select the sample of 312 patients planned to receive elective surgery. The intrusion was collected by the face-to-face interview using a structured questionnaire that included demographic information and some specific questions that measured knowledge and perception. The analysis of the data was done with SPSS 25. Associations were determined using the chi-square test, and a p-value ≤ 0.05 was regarded as significant. **Results:** According to the research, 58.3% of the participants showed good knowledge, and 65.4% had a positive perception of anesthesiologists. The residence (p=0.021) and education level (p<0.001) were significantly related to knowledge status. Patients administered general anesthesia had a much better positive perception as compared to those administered with local anesthesia or regional anesthesia (p=0.041). **Conclusions:** The general knowledge and perception turned out to be satisfactory, but there are still significant misunderstandings, especially in terms of the nature of the work of anesthesiologists.

INTRODUCTION

The role of the anesthetist has transformed significantly over the past few decades, where the views held by the professionals concerned on the roles of the anesthetists in the perioperative units have changed to include the patients, including the minors, in their decision-making unit, considering their developmental abilities, and the medical complexities involved [1]. Guidelines provided by the professional societies in the field of anesthesia recommend that the anesthetists must be included in the decision-making unit of the perioperative units, which incorporates a variety of medical fields [2]. Anesthesiologists often have limited time to build trust with patients, requiring effective preoperative visits and strong interpersonal skills to improve patient-physician relationships and reduce anxiety, preventing medical disasters and costly interventions [3-5]. Numerous patients undergo feelings of fear and anxiety in the pre-operative phase, stemming from insufficient knowledge regarding the potential occurrences linked to anesthesia or surgical procedures. Various research works have illustrated the inadequate public understanding of anesthesia and the responsibilities held by anesthetists in nations at various stages of development [6]. Many people believe that anesthesiology is not as well-known as other

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medical and surgical specialties, and they are also unaware of the differences between general and local anesthesia [7-9]. Patients' misconceptions about anesthesia can affect their decision to seek surgical consultation and their willingness to undergo anesthesia and surgical procedures, particularly in developing countries. These misunderstandings may result in delayed patient presentation, ultimately impacting healthcare outcomes and quality of care negatively [10, 11]. Previous international research on patients' level of knowledge of anesthesia and the role of anesthetists found that out of all participants, 28.3% had good knowledge, and the mean knowledge score was 1.72 ± 0.45. Participants with poor knowledge answered less than half of the questions correctly [6]. One of the studies showed the patients' perception of anesthesiologists' expertise, role, and responsibilities. The prevalence of correct perception regarding an anesthesiologist's role was found in different questions to be 84.5% [12]. In Pakistan, half of the patients are unaware of their surgery purpose and follow surgeons' advice to undergo pre-anesthetic assessment, highlighting the need for increased awareness about anesthesia risks and pre-anesthesia assessment [13].

Previous studies have highlighted inadequate patient knowledge regarding anesthesia and the role of anesthetists; however, limited local data exist to assess awareness within our population. This gap creates challenges, as poor understanding may increase preoperative anxiety and hinder effective utilization of anesthetic services. The study aimed to determine the frequency of patients' knowledge and perception regarding anesthesia and anesthetists in our setting to support improved patient education and healthcare planning.

METHODS

This cross-sectional study was conducted in the Department of Anaesthesia, Sindh Institute of Urology and Transplantation (SIUT), Karachi, from December 2025 to January 2026, after obtaining approval from the Ethical Review Committee of SIUT (Approval No: SIUT-ERC-2025/A-619). Following ethical approval, data collection was conducted over a predefined short duration through consecutive face-to-face interviews and was completed within the approved study period. Although conducted under a single institutional framework, participants were recruited from multiple SIUT campuses comprising eight hospital buildings across four different cities, supported by a large multidisciplinary anesthesia department with over 100 anesthetists across all hierarchical levels. The sample size was calculated using the WHO sample size calculator by taking a prevalence of good knowledge level as 28.3%, a 5% margin of error, and a 95% confidence interval. The resulting sample size was 312 patients [6]. A non-probability consecutive sampling technique was employed for participant recruitment. Patients aged 18 to 75 years of both genders, scheduled to undergo elective surgical procedures under both general or local anesthesia, and willing to provide informed consent, were included in the study. Patients with psychiatric disorders, a history of previous surgeries, hearing or speech impairments, or those unable to communicate (e.g., patients with tracheostomies or low Glasgow Coma Scale scores) were excluded. Informed consent was obtained from each patient before inclusion. Data collection was carried out, and information, such as age, gender, residence, marital status, education, occupation, type of anaesthesia, and previous anaesthesia history, was documented. Knowledge and perception regarding anesthesia and anesthesiologists were assessed using a structured questionnaire adapted from previously published studies. The questionnaire consisted of closed-ended items evaluating patients' understanding of anesthetic techniques and the roles of anesthesiologists, as well as their perceptions toward anesthetic care. Each correct response was assigned a score of 1, while incorrect or 'don't know' responses were assigned a score of 0. The total scores were summed and categorized into 'good' or 'poor' knowledge and 'positive' or 'negative' perception based on predefined cut-off values. A correct answer received 1 point, and an incorrect or no answer received 0 points. All knowledge and perception scores were added and typed. To achieve the accuracy and consistency of the data, the principal investigator had to collect all data using a predesigned proforma. There was a reduction in bias because of the inclusion and exclusion criteria, which was observed to the letter, and due to stratification to control potential confounding factors.

Analysis was done using SPSS version 25. Qualitative variables like gender, residence, marital status, education, occupation, type of anesthesia, previous anesthesia received, and knowledge and perception status were calculated with frequencies and percentages. Normality of the quantitative variables was checked by the use of the Shapiro-Wilk test. The standard deviation and the mean were given in normally distributed data. Stratification was used to control the effect modifiers that included age, gender, residence, marital status, education, occupation, type of anaesthesia, and previous anaesthesia received. Chi-square test was used to associate the knowledge and perception with these stratified variables. A p-value of ≤ 0.05 was taken as a statistically significant value.

RESULTS

The study involved 312 patients, though on a very thin margin, males outnumbered the females. Most of the participants lived in urban locations, with the majority

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being married. There was also a variation in the educational levels, and a significant percentage of the population had attained secondary or higher levels of education, but a large number were illiterate. Housewives occupied the highest category of occupation, followed by people involved in business and students. The most used form was general anesthesia, and a lower number of patients were administered regional or local anesthesia. A little over 50 percent of the respondents had no previous experience with anesthesia. The average age of the research population was 41.3 ± 12.5 years, which shows that the respondents were distributed across a wide range of ages (Table 1).

Table 1: Demographic and Clinical Characteristics of Participants (n = 312)

Variables	Categories	n (%)
Gender	Male	166 (53.2%)
	Female	146 (46.8%)
Residence	Urban	198 (63.5%)
	Rural	114 (36.5%)
Marital Status	Single	98 (31.4%)
	Married	192 (61.5%)
	Divorced/Separated	14 (4.5%)
	Widowed	8 (2.6%)
Education	Illiterate	50 (16.0%)
	Primary	76 (24.4%)
	Secondary	92 (29.5%)
	Intermediate	56 (17.9%)
	Bachelors	38 (12.2%)
Occupation	Professional	54 (17.3%)
	Business	62 (19.9%)
	Housewife	102 (32.7%)
	Student	58 (18.6%)
	Others	36 (11.5%)
Type of Anesthesia	General	186 (59.6%)
	Regional	72 (23.1%)
	Local	54 (17.3%)
Previous Anesthesia Exposure	Exposed	144 (46.2%)
	Non-exposed	168 (53.8%)
Mean Age	41.3 ± 12.5 yrs	

Based on the assessment of knowledge and perception, a majority of the participants demonstrated a good level of knowledge regarding anesthesia and the role of anesthesiologists. Equally, a large percentage experienced a positive attitude towards anesthesiologists and their roles in patient care. Nevertheless, a significant number of them retained insufficient knowledge or negative attitudes, which means that the area of widespread awareness of the population and the education of patients could be enhanced (Table 2).

Table 2: Knowledge and Perception Scores of Participants

Status Types	Categories	n (%)
Knowledge Status	Good	182 (58.3%)
	Poor	130 (41.7%)
Perception Status	Positive	204 (65.4%)
	Negative	108 (34.6%)

In comparing the relationship between the status of knowledge among the participants with the demographic traits of the participants, there was no significant relationship between gender and exposure to anesthesia before. Nevertheless, there was a statistically significant correlation between knowledge status, residence, and education level. The percentage of good knowledge was increased among urban residents compared to rural residents. Equally, the education level secondary and higher education had more chances of possessing good knowledge, whereas those having no formal education had a majority possession of poor knowledge. These results indicate that education level and city life can have a positive effect on the patients' knowledge of anesthesia and the work of anesthesiologists (Table 3).

Table 3: Association between Knowledge Status and Demographic Variables

Variables	Good Knowledge, n (%)	Poor Knowledge, n (%)	p-value
Gender			
Male	98 (59.0%)	68 (41.0%)	0.317
Female	84 (57.5%)	62 (42.5%)	
Residence			
Urban	130 (65.7%)	68 (34.3%)	0.021*
Rural	52 (45.6%)	62 (54.4%)	
Education Level			
Illiterate	12 (24.0%)	38 (76.0%)	<0.001*
Primary	34 (44.7%)	42 (55.3%)	
Secondary	136 (74.7%)	46 (25.3%)	
Previous Anesthesia			
Exposed	90 (62.5%)	54 (37.5%)	0.068
Non-exposed	92 (54.8%)	76 (45.2%)	

The chi-square test was applied
*Statistically significant at p≤0.05

There was also a strong correlation between the perception of the patients of the anesthesiologists and the type of anesthesia that they had been administered (p=0.041). The patients undergoing general anesthesia were more likely to have a positive perception than the patients undergoing regional or local anesthesia. It is important to note that a negative perception was observed in almost 50% of the patients undergoing local anesthesia. Such results imply that the level of interaction with patients and the type of anesthetic care could determine the perception of the role and significance of anesthesiologists by patients (Table 4).

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Table 4: Association Between Perception Status and Type of Anesthesia

Type of Anesthesia	Perception n (%)		p-value
	Positive	Negative	
General	130 (69.9%)	56 (30.1%)	0.041*
Regional	46 (63.9%)	26 (36.1%)	
Local	28 (51.9%)	26 (48.1%)	

The number of participants who correctly identified that putting patients to sleep during general anesthesia is the role of anesthesiologists was 254 out of 312 (81.4%), and the number of individuals who correctly identified that their task is to wake patients after the operation was also 238 out of 312 (76.3%). Many of them, 278 respondents (89.1%) knew that anesthesiologists watch such parameters as blood pressure and breathing during surgery. Equally, 234 (75.0%) acknowledged that anesthesiologists pay attention to blood loss, and 212 (67.9%) understood that they have to administer blood in case of need, during the surgery. Moreover, 246 respondents (78.8%) correctly determined that anesthesiologists give drugs and fluids in an operating room, whereas 204 (65.4%) participants assumed that anesthesiologists took the lead in the post-operative care. Nonetheless, the perception of the preoperative role of anesthesiologists revealed the existence of a large disparity in perceptions between respondents, with 46 participants (14.7%) indicating that anesthesiologists are engaged in deciding on whether surgery should proceed, compared to the majority of 266 individuals (85.3%)(Figure 1).

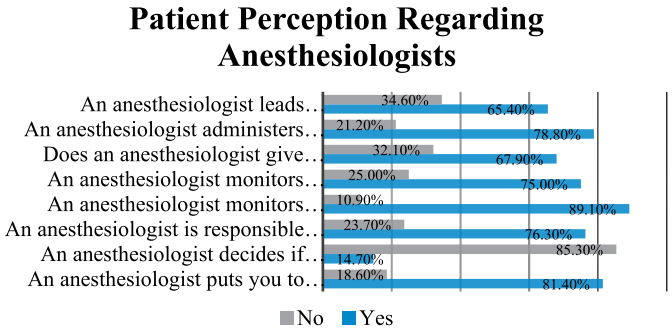

Figure 1: A bar graph showing the Patient Perception Regarding Anesthesiologists

DISCUSSION

In the current research, the researcher intended to measure the level of knowledge and perception of patients about anesthesia and the role of anesthesiologists. We found that 58.3% of the participants were good in terms of knowledge, and 65.4% were positive in their perception. The findings indicate that there is a moderate degree of awareness among surgical patients, and their awareness level can be improved, especially in the knowledge of the role played by the anesthesiologist during the preoperative and decision-making process. The present study found it consistent with a study done in Saudi Arabia by Almutairi *et al.* in which 60% of participants had sufficient knowledge about anesthesia, and 63% had a positive attitude towards anesthesiologists [5]. A study by Arefayne *et al.* in Ethiopia showed that 28.3% of participants knew enough about anesthesiologists [6]. A different study conducted by Jouybar *et al.* in Iran reported that reduced awareness led to an awareness of the role of the anesthesiologist during the operation; only 38% of respondents were aware of this job intraoperatively [14]. In our work, good knowledge was significantly correlated with education level and urban living, which is also in line with the results of Zaihi *et al.* in Saudi Arabia, who claimed that higher education was the strongest predictor of better knowledge [15]. Likewise, Wang *et al.* stated that patients who had a higher education level and previous experience with surgery were more familiar with the facts related to anesthesia [16]. Our findings are also supported by a study carried out in China by Wu *et al.* who found that urban patients were more likely to have a positive perception than patients living in rural areas, which may be attributed to the fact that they had better access to information on the subject and services due to the presence of anesthetic technologies [17]. In addition, the necessary results obtained in the present study show that patients undergoing general anesthesia demonstrated a significantly greater positive perception than those undergoing regional or local anesthesia. A study in the USA by Pennington *et al.* supports this claim by finding that exposure to general anesthesia correlates with increased patient engagement and dependence on anesthesiologists [18]. In contrast to our results, a study conducted by Ebrahimi *et al.* indicated poor knowledge above 70% of respondents, which suggests that there are significant differences in the knowledge of the public regarding the practice of anesthesia between the regions and healthcare systems [19]. In a similar vein, a study by Renuka in India indicated that non-medical graduate professionals believed anesthesiologists did something more than administering anesthesia, and this is a major difference in what is known about their scope of practice [20]. The current paper highlights the urgent importance of organized patient education about anesthesia and the overall role of anesthesiologists. The introduction of anesthesia awareness modules in preoperative counselling, displaying educational posters in preoperative waiting bays, and asking anesthesiologists to introduce themselves and their role can contribute a great deal to patient trust and cooperation. Perioperative anxiety among patients can also be mitigated through the enhancement of patient understanding and shared decision-making in surgical care.

Despite being a cross-sectional study conducted within a

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single institutional framework, the study population was drawn from multiple SIUT campuses located across different cities, which may partially enhance the representativeness of the sample. However, the single-center design limits the generalizability of the findings to other healthcare settings with different organizational structures and patient populations. There may be social desirability or recall bias in self-reported questionnaire responses. Also, our research did not evaluate the fears of patients or their psychological determinants of knowledge and perception. Future, longitudinal, and multicenter research using qualitative interviews would aid in delving deeper into these dimensions.

CONCLUSIONS

Conclusively, although most of the patients portrayed good knowledge and positive attitude towards the anesthesiologists, there are still gaps, especially in how the patients perceive the anesthesiologists in deciding and leading them outside of the operating room. The results also highlight the importance of specific educational measures aimed at increasing patient awareness and, more specifically, the population of rural and less-educated people. Patients empowered with correct information about anesthesia will not only create trust and cooperation but will also enhance safer and more patient-oriented perioperative care.

Authors' Contribution

Conceptualization: AAG
Methodology: SWU
Formal analysis: SMA, SK, MQA
Writing and Drafting: AAG, SMA, NN, SK, SWU
Review and Editing: AAG, SMA, NN, SK, MQA, SWU

All authors approved the final manuscript and take responsibility for the integrity of the work.

Conflicts of Interest

All the authors declare no conflict of interest.

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