

Original Article

# Patients' Perception and Understanding Towards Anesthesia and Anesthetists at Tertiary Care Hospitals of District Mardan: A Cross-Sectional Study from Mardan KP

Hamza Zafar<sup>1</sup>, Asad Khan<sup>2\*</sup>, Aamir Jan<sup>1</sup>, Kamran Ullah<sup>1</sup>

<sup>1</sup>BS Anesthesia Technology, College of Medical Technology, Bacha Khan Medical College, Mardan, Pakistan.

<sup>2</sup>MPH, BS Anesthesia Technology, Lecturer Anesthesia, In-charge Administration of the College of Medical Technology, Bacha Khan Medical College, Mardan, Pakistan.

\*Corresponding Author: Asad Khan; Email: asadipms@gmail.com

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## ABSTRACT

**Background:** Anesthesia is integral to patient care during the peri-operative period. Despite advancements, public knowledge about the anesthesiologist's extensive responsibilities and critical role in healthcare remains limited. This study explores the understanding and perceptions of anesthesia and anesthetists among patients at Mardan Medical Complex.

**Objective:** To assess patients' perceptions and understanding of anesthesia and anesthetists' roles, identifying factors influencing their knowledge levels.

**Methods:** A cross-sectional study was conducted at Mardan Medical Complex, KP, from June to September 2023. Participants were interviewed using a structured questionnaire that collected socio-demographic data, knowledge about anesthesia, and perceptions of anesthetists. The chi-square test was utilized to explore associations between categorical variables.

**Results:** A total of 309 participants were enrolled, with a response rate of 100%. The demographic breakdown was 159 males (51.5%) and 150 females (48.5%). Only 84 participants (27.2%) demonstrated an understanding of anesthetists' roles, and 87 (28.2%) claimed knowledge of anesthesia. Significant associations were found between levels of education ( $p < 0.001$ ) and occupation ( $p < 0.001$ ) and the knowledge of anesthesia.

**Conclusion:** There is a marked deficiency in knowledge and understanding of anesthesia and the pivotal role of anesthetists among the patients surveyed. This underscores the need for targeted educational initiatives to enhance patient and public awareness of anesthesiology's critical functions in healthcare.

**Keywords:** Anesthesia, Anesthetists, Knowledge, Perception, Patients, Public Awareness, Understanding.

## INTRODUCTION

Despite significant advancements in anesthesiology, public understanding of the anesthesiologist's multifaceted role remains limited, often overshadowed by the more visible medical professionals involved in patient care. Anesthesiologists typically have minimal interaction with conscious patients, positioning them uniquely among their medical peers and contributing to their lower visibility within the healthcare community. Furthermore, their critical role in surgical procedures and patient safety is frequently undervalued, perceived as a "behind-the-scenes" job, while surgeons often receive the spotlight (1).

The global community acknowledges the crucial importance and extensive training of anesthesiologists by commemorating World Anaesthesia Day annually on October 16. This event aims to raise public awareness about the breadth and significance of anesthesiology, a field that encompasses far more than the operating room (2). Despite these efforts, both the public and healthcare professionals often possess a limited understanding of anesthesiology, affecting patient perceptions and potentially discouraging them from seeking necessary medical care due to unfounded fears and misconceptions about anesthesia (3, 4, 5).

Studies have indicated that public awareness and understanding of anesthesiology vary significantly between developed and developing nations, with patients in the latter generally exhibiting lower levels of awareness and understanding. This discrepancy was highlighted in a 2011 Brazilian survey, where 79% of patients recognized anesthesiologists as specialists, challenging the

assumption that awareness is universally low (8, 11-14). However, in countries like Nigeria and Ethiopia, challenges such as a shortage of anesthesia providers and limited resources further exacerbate the gaps in patient education and satisfaction with healthcare services (7, 15).

The rationale of this study was to enhance patient comprehension and perceptions of anesthesia and the anesthesiologist's role. By improving patient education and communication, the study aimed to better patient outcomes in medical procedures involving anesthesia, enhance the interaction between patients and anesthesiologists, and increase patient satisfaction. The objectives were to determine patients' perceptions of anesthesia and anesthesiologists and to identify factors influencing their perceptions, particularly focusing on the impact of patients' educational backgrounds and prior familiarity with anesthesia on their understanding (9).

## METHODS

The study was conducted as a descriptive cross-sectional analysis at the Department of Anesthesia, Mardan Medical Complex (MMC), a 700-bed tertiary care teaching hospital located in the northern region of Khyber Pakhtunkhwa (KPK). Known for its comprehensive range of medical specialties, MMC's Department of Anesthesia is recognized for its exceptional expertise and dedication to patient safety and care. Staffed by highly skilled anesthesiologists and anesthesia technicians, the department is equipped with state-of-the-art technology and adheres to advanced practices in anesthesia, setting a benchmark for quality healthcare in the region (16).

This research was carried out from June 15th to September 20th, 2023, during which data was systematically gathered to assess patients' perceptions and understanding of anesthesia and anesthesiologists. The study utilized the single population proportions formula to calculate the required sample size, assuming a patient knowledge proportion of 76%. This calculation was facilitated by the use of Openepi.com, which provided a robust framework for estimating a sample size with a 95% confidence interval and a 5% margin of error, initially resulting in a sample size of 281. To accommodate potential non-responses, an additional 10% was factored in, raising the total to 309 participants (16).

Data collection was conducted using a non-probability, convenient sampling method. This approach enabled efficient access to patients in various departments post-surgery, including surgical, neurology, orthopedic, ENT, and gynecology wards. Eligible participants were adults aged 18 years or older who consented to partake in the study. Exclusion criteria included patients with prior anesthetic exposure, those undergoing emergency surgery, individuals under 18, and those with cognitive impairments such as dementia. Additionally, patients treated in minor surgical rooms and those with hearing impairments or communication difficulties were also excluded from the study.

Operational definitions were clearly outlined to ensure consistency and clarity throughout the research. An anesthetist was defined as a health professional licensed to administer anesthesia effectively both within and outside the operating area. Anesthesia was described as the use of medications to induce a loss of sensation or consciousness, with general anesthesia referring to a state of unconsciousness and regional anesthesia targeting a specific area of the body while allowing the patient to remain conscious. Perception was defined as the patient's attitudes, thoughts, or understandings concerning anesthesia or anesthesiologists, while knowledge encompassed the patients' awareness and comprehension of related facts, and their capacity to apply this knowledge in decision-making processes.

Data were meticulously collected through a validated questionnaire consisting of 11 multiple-choice questions designed to evaluate the participants' knowledge and perceptions of anesthesia and anesthesiologists. Researchers ensured that participants were familiar with the assessment tools to facilitate genuine responses. The collected data underwent rigorous analysis using SPSS version 22, employing frequencies and percentages to illustrate categorical data. The chi-square test was utilized to determine the statistical significance of correlations between categorical variables, with a significance threshold set at a p-value of less than 0.05. The results were presented using a combination of numerical data and tables, effectively conveying the findings (16).

Ethical approval for this study was obtained from the ASRB at Bacha Khan Medical College following a thorough review process. The study was designed to avoid any harm to participants by not involving any experimentation. Voluntary informed consent was obtained from all participants, who were also given the freedom to withdraw from the study at any time, ensuring respect for their autonomy and privacy. Measures were taken to maintain confidentiality, including the use of anonymized questionnaires that prevented any personal data exposure, thus upholding the highest standards of privacy and ethical conduct throughout the research.

## RESULTS

In the descriptive cross-sectional study conducted at the Department of Anesthesia, Mardan Medical Complex, a total of 309 participants were enrolled over a four-month period, achieving a 100% response rate. The age distribution showed that 192

participants (62.1%) were aged between 25 and 54 years, while 63 (20.4%) fell into the 18-24 year age group, 38 (12.3%) were between 55 and 64 years, and the remaining 16 (5.2%) were 65 years or older. The gender breakdown revealed a near-even split with 159 males (51.5%) and 150 females (48.5%). Educational levels varied, with 140 participants (45.3%) being illiterate, 90 (29.1%) completing high school, 53 (27.3%) holding college degrees, and 26 (8.4%) possessing university qualifications. Half of the participants (156, 50.5%) came from rural areas, while the remainder (153, 49.5%) resided in urban settings. The primary occupations included homemakers (102, 33.0%), farmers (56, 18.1%), private business workers (44, 14.2%), employed individuals (32, 10.4%), students (31, 10.0%), and the unemployed (44, 14.2%).

Regarding prior exposure to anesthesia, 139 participants (45%) reported previous encounters with anesthetic medications during surgical procedures. Of these, 68 (22.0%) had been anesthetized once, while 71 (23.0%) had experienced it more than twice. The most common type of anesthesia received was general anesthesia (78, 25.2%), followed by regional anesthesia (57, 18.4%), with a small number having had local anesthesia (4, 1.3%).

The study further explored participants' understanding of anesthesia and anesthetists. Findings indicated that only 87 participants (28.2%) claimed to have knowledge related to anesthesia, whereas a significant majority, 222 (71.8%), admitted to being uninformed. Similarly, when assessing perceptions of anesthetists' roles, only 84 (27.2%) respondents demonstrated understanding, while 225 (72.8%) indicated a lack of knowledge.

Statistical analysis using the chi-square test highlighted the influence of educational level and occupation on patients' understanding of anesthesia, both of which showed significant correlations ( $p=0.001$ ). However, factors such as gender ( $p=0.284$ ), residency status ( $p=0.080$ ), and previous anesthesia history ( $p=0.216$ ) did not demonstrate a statistically significant impact on the outcomes.

The research delved into the broader roles of anesthetists beyond the operating room through a questionnaire, revealing mixed perceptions among participants. About 39.5% believed anesthetists played a role in managing post-surgical breathing difficulties, and a similar portion lacked knowledge of anesthetists' involvement in emergency care and the ICU. Specifically, 26.2% thought anesthetists could contribute in the emergency room, and 26.5% recognized their role in the ICU. However, a substantial proportion of respondents lacked clear understanding of these roles, highlighting the need for enhanced communication and education regarding the extensive responsibilities of anesthetists in patient care across different medical settings.

**Table 1: Characteristics background and past experiences with anesthesia.**

Variables	Frequency	Percent (%)
<b>Age (Grouped in years)</b>		
18-24	63	20.4%
25-54	192	62.1%
55-64	38	12.3%
>65	16	5.2%
<b>Sex</b>		
Male	159	51.5%
Female	150	48.5%
<b>Educational status</b>		
None (illiterate)	140	45.3%
School (matric level)	90	29.1%
College	53	17.2%
University	26	8.4%
<b>Residence</b>		
Urban	153	49.5%
Rural	156	50.5%
<b>Occupation</b>		
Employed	32	10.4%
Business	44	14.2%
Farming	56	18.1%
Student	31	10.0%
Unemployed	44	14.2%
Housewife	102	33.0%
<b>Previous anesthesia exposure</b>		

Variables	Frequency	Percent (%)
Exposed		
Non exposed	139	45.0%
	170	55.0%
<b>Frequency of exposure</b>		
Never exposed	170	55.0%
Once	68	22.0%
More than two times	71	23.0%
<b>Type of anesthesia received</b>		
General anesthesia	78	25.2%
Regional anesthesia	57	18.4
Local anesthesia	4	1.3%

Table 1 summarizes the whole the background profiles and past experience with anesthesia.

Table 2: Participants understanding regarding anesthesia and anesthetist:

Variables	Frequency	Percent (%)
Do you have knowledge about anesthesia?		
Yes	87	28.2%
No	222	71.8%
Do you have knowledge about anesthetist?		
Yes	84	27.2%
No	225	72.8%

Table 2 summarizes the participants understanding regarding anesthesia and anesthetists.

Table 3: Responders' perception acknowledgement:

Variables	Frequency	Percent (%)
If you experience difficulty breathing after surgery or during your hospital stay, do you believe the anesthetist can assist in improving your breathing?		
Yes		
No	122	39.5%
I don't know	158	51.1%
	29	9.4%
What tasks might an anesthetist be responsible for in the recovery room or hospital ward?		
Providing oxygen via a facial mask		
Inserting a tube into your trachea to facilitate your ventilation	43	13.9%
Doing Tracheostomy	20	6.5%
Has all the above roles	19	6.1%
I don't know	40	12.9%
	187	60.5%
Do you believe anesthetist can contribute in the emergency room?		
Yes	81	26.2%
No	84	27.2%
I don't know	144	46.6%
Do you believe anesthetists play a significant role in the care of critically ill patients in the ICU?		
Yes	82	26.5%

Variables	Frequency	Percent (%)
No	84	27.2%
I don't know	143	46.3%
What are your thoughts on the range of tasks that an anesthetist can undertake in the ICU?		
Assisting patients with their breathing and ventilation	89	28.8%
Providing sedatives, anesthetics, and pain-relieving medications	152	49.2%
Participating in patient resuscitation efforts	68	22.0%
Are anesthetists involved in the management of non-surgical pain?		
Yes	67	21.7%
No	112	36.2%
I don't know	130	42.1%
Who do you believe holds the highest authority in the operating room?		
The surgeon	92	29.8%
The anesthetist	138	44.7%
The nurse	65	21.0%
I don't know	14	4.5%
The professional relationship between the surgeon and the anesthetist? The anesthetist carries out their duties in accordance with the surgeon's instructions		
The surgeon fulfills their responsibilities under the supervision of the anesthetists	58	18.8%
Each has different roles	81	26.2%
I don't know	136	44.0%
	34	11.0%
How do you perceive your safety when undergoing anesthesia?		
I feel secure	234	75.7%
I do not have a feeling of safety	51	16.5%
I am uncertain about the future outcomes	21	6.8%
I do not possess any safety-related concerns	3	1.0%

Table 3 summarizes all the responses that are related to patients' perception about the role of anesthetists outside the operation theatre.

## DISCUSSION

This study aimed to elucidate patient perceptions and understanding of anesthesia and the role of anesthetists in perioperative care. The findings revealed a substantial deficit in patient awareness of anesthesiology, despite its critical role in healthcare. Factors such as educational background and occupation significantly influenced patients' knowledge levels, underlining the importance of socioeconomic variables in medical understanding.

The study's strengths include a robust sample size and a comprehensive survey design, which facilitated a detailed exploration of public perceptions regarding anesthesiology. Furthermore, the utilization of a cross-sectional approach allowed for a broad snapshot of current patient views and experiences across a diverse population.

However, there were limitations that need acknowledgment. The sample was drawn from a single tertiary care center, which may not fully represent the diverse patient populations across different regions or healthcare settings. Moreover, the exclusion of ICU patients from the sample may have skewed understanding and perceptions related to anesthetists' roles in critical care settings, as these patients often have more extensive interactions with anesthesiology services.

Comparative analysis with studies from other regions indicates that awareness and understanding of anesthesiology can vary widely. In developed countries, awareness levels are typically higher, ranging from 70% to 90%, compared to 18% to 89% in developing countries (19). This disparity suggests that economic and educational factors play significant roles in patient education about

healthcare specialties. Despite the global emphasis on enhancing public medical knowledge, patients in this study demonstrated limited understanding, similar to findings in Nigeria and India where awareness was also notably low (18).

Interestingly, previous encounters with anesthesiology services did not necessarily enhance understanding, as suggested by Hariharan, who found that passive experiences with anesthesia did not significantly boost knowledge (20). This underscores the need for active patient education initiatives rather than relying on incidental learning through personal health experiences.

In terms of anesthetists' roles beyond the operating room, approximately 39.5% of participants recognized their involvement in managing post-operative breathing difficulties, which contrasts sharply with a Turkish study where only 10% acknowledged such responsibilities (1). This variation could be attributed to different levels of public health education and communication strategies in disseminating information about the extended roles of anesthesiology professionals.

In conclusion, this study highlights a critical need for targeted educational programs that enhance patient understanding of anesthesiology. Such initiatives should consider the demographic and socioeconomic backgrounds of the audience to be most effective. Ensuring that patients comprehend the full scope of anesthetists' roles could not only improve patient outcomes but also elevate the stature of the anesthesiology field within the broader medical community. The findings advocate for a strategic reevaluation of how information about anesthesia is communicated to the public, emphasizing the importance of educational status and tailored communication in patient education strategies.

## CONCLUSION

Our study highlights a significant lack of understanding among patients in Mardan, KP, regarding anesthesia and the role of anesthetists. To enhance patient outcomes and appreciation for anesthetic services, it is imperative to implement educational programs detailing anesthetic practices and the critical role of anesthetists. Public seminars and campaigns could further elevate the profession's profile, encouraging more individuals to pursue this field. However, the study's findings are limited by its institution-based focus and cross-sectional design, which may affect the generalizability and prevent establishing causal relationships. Future research should extend to broader settings and consider longitudinal designs to better understand the dynamics of patient education and perception in anesthesia.

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