

# Patient awareness and perception regarding anesthesia and the role of anesthesiologists: A cross-sectional study in a tertiary care hospital

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## ABSTRACT

**Background:** There have been significant advancements in the scope of anesthesia, however, it has been misconceived as a behind the screen specialty. Patients are not aware of anesthesiologist as a qualified health professional, especially in under-developed countries. This knowledge gap may adversely affect informed consent and perioperative anxiety management. Hence, this study aimed to assess patient's knowledge and perception regarding anesthesia, evaluate concerns about surgical interventions and determine associations between educational level and previous anesthetic exposure with awareness about anesthesia types. **Methods:** An institutional based cross-sectional study was conducted from November 2025 to January 2026 in patients aged 18 to 75 years. Around 370 patients were interviewed with a structured questionnaires with 12 items to assess patients' knowledge, perception and concerns of anesthesia. Descriptive statistics and Chi-square tests were used for analysis. **Results:** Out of 370 patients, only 80 (21.60%) correctly identified anesthesiologists as the health care professionals responsible for administering anesthesia. Most patients 283 (76%) lacked knowledge about anesthetic types. A statistically significant association was found between education level and awareness of anesthetic types ( $p < 0.001$ ) and between previous anesthetic exposure and awareness of anesthetic types ( $p < 0.0001$ ). **Conclusions:** Patient awareness regarding anesthesia and the peri-operative role of anesthesiologists was limited. Higher educational attainment and previous anesthetic exposure were associated with improved awareness.

**Keywords:** Anesthesia, awareness, knowledge, perception.

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## INTRODUCTION

Anesthesiology is relatively young yet essential specialty whose development has closely paralleled advances in surgical practice.<sup>1</sup> Despite their critical perioperative role spanning from intraoperative management, intensive care, pain medicine, trauma resuscitation, anesthesiologists are frequently underrecognized by the general public.<sup>2-8</sup> Patients have limited awareness of anesthetic techniques, the qualification of those who administer anesthesia and associated perioperative risks, all of which may negatively influence informed consent, preoperative anxiety and patient safety.<sup>9-13</sup>

Multiple cross-sectional studies in diverse settings have consistently documented limited patient knowledge of anesthesia and role of anesthesiologists.<sup>1-3,5,14,15</sup> A good anesthesiologist-patient relationship established during the pre-anesthetic consultation has been shown to reduce preoperative anxiety and improve patient satisfaction.<sup>3,5,13</sup> However most studies have been conducted in urban tertiary centers and data from Nepal is limited. The literacy rate is 77.4% in Nepal but varies according to provinces with Gandaki Province having the highest literacy rate of 83.4%.<sup>14</sup>

Improving patient knowledge of anesthesia and anesthesiologists is therefore important not only for informed decision making but also for reducing preoperative fear and strengthening doctor patient relationship. In context of Nepal, awareness related to healthcare, cultural perception of doctors and literacy status of patient population may influence the data. This study was therefore conducted to determine patients' knowledge of anesthesia and surgery and determine the association between educational level and prior anesthetic exposure with awareness of types of anesthesia among patients attending pre-operative clinic at a tertiary care hospital in Nepal.

## METHODS

After the approval by the Institutional Review Committee of Gandaki Medical College Teaching Hospital and Research Center (Ref. No. 15/082/083-F), a cross-sectional study was conducted over a three-month period from November 2025 to January 2026. Written informed consent was obtained from all participants prior to enrolment and confidentiality of the patient data was maintained throughout the study.

A total of 370 adult patients aged 18-75 years who attended the pre-anesthetic checkup clinic and were scheduled for elective surgery under various surgical specialties at Gandaki Medical College Teaching Hospital and Research Center, Pokhara, Nepal were enrolled using a convenience sampling technique. The sample size was calculated based on a previously reported prevalence of awareness of types of anesthesia of approximately 32% with a 95% confidence interval and 5% margin of error,<sup>2</sup> yielding a minimum required sample as 367; 370 patients were enrolled to account for the drop outs. Patients who refused to participate or who were unable to give consent (unconscious or critically ill patient), psychiatric illnesses, or patients who were unable to speak or hear were excluded from the study.

A structured interviewer-administered questionnaire comprising 12 items was used to assess patient knowledge of anesthesia, perception of the anesthesiologist's role and concerns about perioperative care. Patient perception was assessed using items that asked participants to identify who administers anesthesia, what anesthesiologists do intra-operatively and post-operatively and whether they perceived anesthesia as safe- each scored on a categorical Yes/No/Don't know scale. The questionnaire was developed base on validated instruments used in similar studies in South<sup>2-4</sup> and was reviewed by a panel of senior anesthesiologists for content validity. The questionnaire collected demographic data (age, gender, marital status, occupation, educational

status) and included multiple choice items with response options of 'Yes' 'No' and 'Don't know'. Educational status was categorized as illiterate, primary, secondary, higher secondary and bachelor's degree and above, reflecting the diverse literacy profile of patients referred from within and around the city. It also addressed knowledge of anesthetic types, preference for and reasons for refusing specific anesthetic techniques, perceived effects of comorbid illness on anesthesia and history of prior anesthetic exposure.

Interviews were conducted by a team of trained anesthesiologists in the patient's local language upon arrival at the PAC clinic. To minimize interviewer bias, all interviewers underwent a standardized briefing session prior to data collection; a single structured script was use for all interviews, open-ended probing was avoided and interviewers were blinded to each other's responses. Each interviewer administered the questionnaire independently and without discussion of patient responses.

Data was collected and entered for analysis using SPSS version 26 (IBM Corporation, Armonk, NY, USA). Categorical variables were summarized as frequencies and percentages n(%). Continuous variables (age) were expressed as median and interquartile range (IQR) due to non-normal distribution. Chi-square test was employed to determine associations between categorical variables (education level and previous anesthetic exposure) and awareness about anesthetic types. A p-value of <0.05 was considered statistically significant.

## RESULTS

Out of 370 patients, female patients were higher than male 208(56.20%) against 162(43.80%). Median age of the patients who visited the PAC clinic was 43(32.00-56.00). Majority of the patients who came for PAC were married. 326 and rest 44 were not. In terms of occupation, most of the patients were unemployed; 268(72.40%) compared to those who were employed 102(27.56%). The majority of the patients; i.e. 111(30 %) had secondary level education, followed by primary 102(27.56%) bachelor or higher degree 58(15.70%), higher secondary education as 52(14.10%). Only 47(12.7%) of the patient were illiterate in the study. (Table 1)

**Table 1:** Background characteristics of the study patients (N=370)

Indicator	Frequency	Percentage (%)
Age, Median (IQR)	43.0(32.0-56.0)	
Sex		

Male	162	43.80
Female	208	56.20
<b>Marital Status</b>		
Unmarried	44	11.90
Married	326	88.10
<b>Children</b>		
None	71	19.20
Yes	299	80.80
<b>Occupation</b>		
Employed	102	27.56
Unemployed	268	72.40
<b>Education</b>		
Illiterate	47	12.70
Primary	102	27.56
Secondary	111	30.00
Higher Secondary	52	14.05
Bachelor's and above	58	15.67

Most of the patients had no history of surgery in the past i.e. 244 out of 370. Spinal anesthesia was reported to be the most common mode of anesthesia in previous surgery 63(17%) followed by general anesthesia 49(13.20%) and block 7(1.90%). (Table 2)

About the co-existing disease, the majority of the patients had no comorbidities 235(63.50%) whereas, 135(36.50%) had one or more disease. Table 2 showed the prevalence of various chronic diseases in the study group with Diabetes Mellitus being the most prevalent among all 79(21.40%). Most of the patient had no specific preferences on the type of anesthesia; 247(66.80%).

**Table 2:** Clinical and anesthesia-related history (N=370)

Indicator's	Frequency	Percentage (%)
<b>Previous Surgery</b>		
No	244	65.90
Yes	126	34.10
<b>Previous Anesthesia</b>		
General	49	13.20
Block	7	1.90
Spinal	63	17
Local	7	1.90
<b>Co-existing disease</b>		
No	235	63.50
Yes	135	36.50
<b>Types of disease</b>		
Diabetes mellitus	79	21.40
Hypertension	52	14.10
Hypothyroidism	44	11.90
COPD	11	3.00
Schizophrenia	7	1.90
Dyslipidemia	7	1.90
Hyperuricemia	6	1.60
Benign prostatic hyperplasia (BPH)	5	1.40
<b>Preference of Anesthesia</b>		
No preference	247	66.80
General	72	19.50

Spinal	39	10.50
Local	7	1.90
Regional	3	0.80
Both General and Spinal	2	0.50

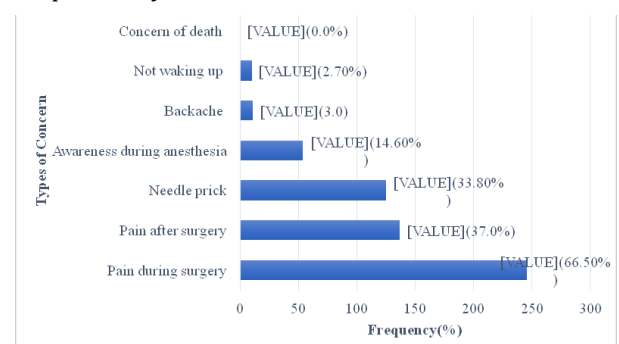
The knowledge level of patients about anesthesia demonstrated the level was limited in general. 283(76.50%) patients did not know about the type of anesthesia and among them who had little knowledge, only 62(16.80%) patients identified general anesthesia and 10(2.70%) patients identified general and regional anesthesia. Regional anesthesia 8(2.20%), spinal anesthesia 6(1.60%) and combination of local and general anesthesia were identified by 1(0.3%) of the total patients interviewed.

Majority of the patient recognized the anesthesia provider as a doctor 233(63%) in contrast only 80(21.6%) recognized an anesthesiologist. (Table 3)

**Table 3:** Knowledge on study patients regarding Anesthesia (n=370)

Knowledge Indicator's	Frequency	Percentage (%)
<b>Types of Anesthesia</b>		
Don't Know	283	76.50
General	62	16.80
General and Regional	10	2.70
Regional	8	2.20
Spinal	6	1.60
Local and General	1	0.30
<b>Anesthesia Provider</b>		
Don't Know	39	10.50
Doctor	233	63.00
Anesthesiologist	80	21.60
Nurse	18	4.90
<b>Risk of co-existing disease</b>		
Don't Know	293	79.20
Known	77	20.80
<b>Post-op role Anesthesiologist</b>		
Don't Know	336	90.80
Known	34	9.20

Table 3 also shows the awareness of post-operative role of anesthesiologist with only 34(9.20%) being aware and 336(90.50%) did not know what an anesthesiologist does post-operatively.



**Figure 1:** Concerns of the patient regarding application of anesthesia (n=370)

Concern about anesthesia experienced by the patients indicated that most patients had greatest fear of pain during surgery 246(66.50%). Pain after surgery was also a major concern in 137(37.00%) of patients. 125(33.80%) patients reported the fear of needle prick whereas 66.20% did not. The fear of not waking up was also not very high 10(2.70%), worry of back ache was also low 11(3%), consciousness during anesthesia was of concern to 54(14.60%) patients. Out of 370 patients who came for pre anesthetic checkup none of them feared death 0(0%).

Table 4 shows the association between education level and awareness on the type of anesthesia. It shows a significant relationship ( $p=0.001$ ). A highly significant association was also observed between past anesthesia experience and awareness on type of anesthesia among patients  $p<0.001$ . Among patients without awareness, 216(76.30%) had no previous anesthesia exposure and 67(23.70%) had prior experience whereas among those with awareness 59(67.80%) had previous anesthesia experience as compared to 28(32.20%) who had no prior experience.

**Table 4:** Association between level of education and past anesthetic experience with their awareness relating to types of anesthesia

Indicators	Awareness on types of anesthesia		P-value
	No (n=283)	Yes (n=87)	
<b>Education Level</b>			0.001*
Illiterate	43 (15.20%)	4 (4.60%)	
Primary	83 (29.30%)	18 (20.70%)	
Secondary	87 (30.70%)	25 (28.70%)	
Higher Secondary	30 (10.60%)	22 (25.30%)	
Bachelor's and above	40 (14.10%)	18 (20.70%)	
<b>Past Anesthesia Experience</b>			<0.001*
No	216 (76.30%)	28(32.20%)	
Yes	67 (23.70%)	59 (67.80%)	

\* $p<0.05$  considered statistically significant; Chi-square test was used for analysis

## DISCUSSION

Gandaki Medical College is a Tertiary Care Centre where Department of Anesthesia conducts >3000 surgeries annually which includes elective and emergency surgeries. Preanesthetic clinics run six days a week and around 8-10 patients are being evaluated per day. This study was conducted to assess the patients' level of knowledge of anesthesia and role played by anesthesiologists in perioperative care of the patients in this highvolume setting.

Our findings demonstrate limited awareness among

the general population regarding anesthesia and anesthesiologist's role in perioperative care. Only 21.60% of participants correctly identified anesthesiologists as the healthcare professionals responsible for administering anesthesia while majority 233(63%) identified them as "doctors". Similar findings have been reported in other studies: Moktan et al<sup>2</sup> documented that only 32% patients recognized anesthesiologists and Kadri et al<sup>3</sup> reported even lower recognition at 5.5%.

Knowledge about anesthetic types was extremely limited with 76.50% patients unable to identify any type of anesthesia which is consistent with the study done by Moktan et al.<sup>2</sup> The predominant knowledge gap reflects insufficient preoperative counselling and patient education program at the tertiary level. Awareness of postoperative role of anesthesiologists was negligible i.e, 34(9.2%) indicating that patients view anesthesiologists primarily as perioperative practitioners with no role beyond operating room. This perception underestimates the major contribution of anesthesiologists in acute postoperative pain management, postoperative nausea and vomiting prevention and management of early postoperative complication.

Educational status was significantly associated with awareness about anesthetic types ( $p<0.001$ ). Patients with higher education levels demonstrated better understanding compared to illiterate patients which is consistent with existing literature. This implies that educational level influences health literacy and knowledge acquisition. In context of Nepal, literacy rate varies significantly by region and demographic factors, this association emphasizes the need for education appropriate counselling strategies that accommodate varying levels of health literacy.<sup>14</sup>

A highly significant association was observed between previous anesthetic exposure and awareness about anesthetic types ( $p<0.001$ ). Among patients with awareness of anesthetic types, 59(67.8%) had previous surgical and anesthetic experience compared to only 28 (32.2%) without prior exposure. Conversely, among the unaware group, 216(76.30%) had no previous exposure. Sagun et al.<sup>15</sup> similarly reported significant improvement in anesthesia knowledge among patients presenting for repeat surgery ( $p<0.001$ ) and Moktan et al.<sup>2</sup> documented a correlation between prior exposure and anesthetic types which suggest that patients learn through direct experience. Hence, structured preoperative education programs should be implemented to provide prospective knowledge before patients undergo anesthesia.

Regarding patient concern, fear of intra-operative (66.50%) and post-operative pain (37%) was predominant consistent with the findings from Khara et al. (28%)<sup>4</sup> and Moktan et al.<sup>2</sup> (42%). As fear of pain is the major source of preoperative anxiety, modern anesthetic techniques and advanced perioperative pain management strategies should be explained in PAC visit.

Two third of the patients 247(66.8%) had no preference regarding anesthesia techniques. This high proportion reflects the lack of knowledge about anesthetic types and their relative merits. Additionally, 293(79.20%) were unaware of how comorbidities might affect anesthetic management. This signifies an overall knowledge deficit which can be corrected to some extent in the preoperative visit.

Several limitations warrant consideration. This study employed a convenience sampling methodology at a single tertiary care center in urban setting within a specific geographic region (Pokhara) which limits generalizability to other health care settings and rural populations. Patients who attended PAC clinics were only included which led to selection bias towards patients with more health awareness. Interviewer bias may have been introduced though can be minimized by extensive standardized training. The questionnaire was adapted rather than formally validated hence its reliability remains undermined.

Despite these limitations, the study provides valuable insights into patient knowledge and perception of anesthesia in Nepalese healthcare context. It also suggests for appropriate preoperative counseling and patient education programs, development of anesthesia specific informed consent, integration of anesthesiology education into medical curriculum and suggests further research in other geographic regions to establish whether findings are generalizable to other primary secondary and tertiary care centers.

## CONCLUSIONS

Patient awareness regarding anesthesia and perioperative role of anesthesiologists was limited. The majority of patients could not identify anesthesiologists as qualified healthcare professionals or describe different anesthetic techniques. Higher educational attainment and previous anesthetic exposure were significantly associated with improved awareness. These findings suggest the importance of preoperative education programs to enhance patient understanding of anesthesia, reduce perioperative anxiety, facilitate informed consent and hence improve patient

satisfaction and surgical outcomes.

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## AUTHORS' CONTRIBUTIONS

RH conducted the concept design, literature research, data collection, manuscript preparation and editing and review. KMB, TP and SN conducted literature review, manuscript editing. RH and AP carried data analysis and statistical analysis. All authors have read and approved the final draft.

## REFERENCES

1. Jathar D, Shinde VS, Patel RD, Naila LD. A study of patient's perception about knowledge of anesthesia and anesthesiologist. *Indian J. Anaesth.* 2002;46(1):26-30.
2. Moktan SL, Shrestha U, Sharma M, Karki M. Awareness and concern towards anesthesia among patients undergoing surgical procedure: A cross-sectional study at pre-anesthetic clinic of a Teaching Hospital. *J Kathmandu Med Coll.* 2019;28(8):76-80. DOI: 10.3126/jkmc.v8i2.28168
3. Kadri IA, Haider G, Memon I, Memon W. Awareness of patients regarding anesthesia; Attitude towards basic types of anesthesia techniques. *Prof Med J* 2014;21(4):782-87. PMID: 17126778.
4. Khara BN, Rupera KB, Gondalia KR, Kamat HV. Knowledge about anesthesia and perception about anesthesiologists among patients at a rural tertiary care Hospital, a cross-sectional survey. *Natl J Med Res.* 2013;3(4):371-74.
5. Arefayne NR, Getahun AB, Melkie TB, Endalew NS, Nigato YA. Patient's knowledge and perception of anesthesia and the anesthetics: cross-sectional study. *Ann Med Surg* 2022;78:103740. DOI: 10.1016/j.amsu.2022.103740
6. Khan FA, Hassan S, Zaidi A. Patients' view of the

- anesthetist in a developing country. *J Pak Med Assoc.* 1999;49(1):4-7. PMID: 10463007.
7. Gurunantham U, Jacob R. The public's perception of anesthesiologists: Indian attitudes. *Indian J Anaesth.* 2004;48(6):456-60.
  8. Hume MA, Kennedy B, Ashney AJ. Patient Knowledge of anesthesia and perioperative care. *Anesthesia* 1994;49:715-18. DOI: 10.1111/j.1365.2044. 1994.tb04408 PMID: 7943707.
  9. Hariharan S, Merritt Charles L, Chen D. Patient's perception of the role of anesthesiologists; a perceptive from the Caribbean. *J Clin Anaesth.* 2006;18(7):504-9. DOI: 10.1016/j.jclinane.2006.03.004 PMID:17126778.
  10. Naithani U, Purohit D, Bajaj P. Public awareness about anesthesia and anesthesiologist a survey. *Indian J Anaesth.* 2007;51(5):420.
  11. Cohen B, Ogorele D, Oifa S, Cattan A, Matot I. Smart marketing may improve public understanding of anesthesia profession. *Isr J Health Policy Res.* 2015;4:16. DOI: 10.1186/s13584-015-0011-1 PMID: 26078849.
  12. Irwin MG, Fung SK, Tivey S. Patient's knowledge of and attitude towards anesthesia and anesthesiologist in Hongkong. *Hong Kong Med J.*1998;4(1):16-22. PMID: 11832547.
  13. Mathur SK, Dube SK, Jain S. Knowledge about anesthesia and anesthesiologist amongst general population in India. *Indian J Anaesth.* 2009;53(2):179-86. PMID: 20640120.
  14. National Statistics Office (NP). Nepal Living Standards survey IV 2022/23. Kathmandu: National Statistics Office;2024.
  15. Sagun A, Birbicer H, Yapici G. Patients who applied to anesthesia clinic, perceptions and knowledge about anesthesia in Turkiye. *Saudi J Anaesth* 2013;7(2):170-4. DOI: 10.4103/1658-354x.114076 PMID: 23956718.