

**ORIGINAL RESEARCH**

# Knowledge and perception of anaesthesiology as a branch of medical science and anaesthesiologists' role and expertise among patients attending anaesthesia OPD in tertiary care centre in north Maharashtra in India

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## ABSTRACT

**Background:** Anaesthesiology is a rapidly and continuously changing branch in medical field. Anaesthesiologists play crucial role during advanced and high-risk surgeries with their services extending outside the operation theatre. Unfortunately, these multitasking services done are unrecognized amongst patients. **Objectives:** We conducted research to study patients' knowledge about the branch of Anaesthesiology and the role of anaesthesiologists in the medical field among patients attending anaesthesia OPD. **Methodology:** This cross-sectional study was conducted in a tertiary care hospital from January 2024 to March 2024 in patients attending anaesthesia OPD. Institutional ethics committee approval was obtained. A total 760 patients were interviewed using a questionnaire to find out knowledge about the branch of anaesthesiology and the role of an anaesthesiologist in the medical field. **Results:** Out of 760, majority were female patients (63 %) and 37 % male, majority of age group between 31-50 years, 36.6% of the subjects were illiterate and 68.55% were low socioeconomic group. Total 53% had fear of receiving anesthesia and 97 % opinioned that their fears and anxiety had decreased after visiting anesthesia OPD, 29% of participants were of the opinion that anaesthesiologists administer only drugs in OT and most of them did not know their role in the postoperative period, 52% had opinion that anaesthesiologists do not have any role outside OT. **Conclusion:** The patients have limited knowledge and perception about anesthesia and the role of anesthetists, even in the current era in rural areas. Doing an extensive pre-anesthesia evaluation in pre-anesthesia OPD helped to increase the knowledge about anaesthesia and the role of anesthetists, as well as it helped to alleviate the fear and anxiety about anesthesia.

**Key-Words:** Anaesthesia branch, Anaesthesiologist expertise, Knowledge, Perception, Preanaesthesia checkup

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## INTRODUCTION

Anaesthesiology is one of the most advanced specialities of medical science that has achieved tremendous growth in the last century. However, the

knowledge about this branch, services provided and recognition of anaesthesiologist as a specialist doctor is very much limited in the general population. With the advancement of anaesthesia, surgical procedures

are also advanced as both branches go absolutely hand in hand with each other. In the current era the role of an anaesthesiologist is not limited only to the operation theatre. Their roles have now extended to outside the operation theatre as in ICU care, trauma care, resuscitation team, pain clinic, endoscopy procedures, and MRI procedures etc.<sup>1</sup>

A good patient-anaesthesiologist relationship is needed for the patient to undergo a stress-free perioperative period. Unfortunately, due to lack of public awareness about anaesthesiology branch, the role played by the anaesthesiologist throughout the perioperative period and outside the operation theatre remains unrecognised. With the changing healthcare system and the advancements in anaesthesiology, patients and the public need to be educated about the services provided by anaesthesiologists and the importance of anaesthesiologists as perioperative physicians. There are various studies reported internationally in this regard in the literature. The studies about awareness are mostly conducted worldwide across medical undergraduates and medical interns. But unfortunately, studies about awareness in general population are not much reported. We proposed this cross-sectional study in tertiary care hospital in Northern Maharashtra, as research review is showing that there has been very little study done on public's awareness of anaesthesia in India and is scarce in Maharashtra.

## OBJECTIVE

The objective of our study was to assess the knowledge of the patients; about anaesthesiology and the role of anaesthesiologists in patient care among patients attending anaesthesia OPD for pre anaesthesia check-up in tertiary care centre.

## METHODOLOGY

This institutional based cross-sectional study was conducted after obtaining IEC approval. Total 760 patients were assessed who attended pre-anaesthetic checkup for elective surgery in anaesthesia OPD at tertiary care centre during January 2024 to March 2024 in Northern Maharashtra. Universal sampling method was used. After obtaining consent patients were interviewed with structured questionnaire which was consisting of 15 questions in local language (regarding the knowledge of Anaesthesiology) were asked to the patients. Patients with refusal for consent, neuropsychiatric illness, unable to communicate verbally and age less than 18 years were excluded from the study.

## Data Collection

### A. Socio-demographic were details recorded-

- Age /Sex/ Occupation
- Educational Qualification: Illiterate / Primary school / Secondary school / High school/Graduate
- Socioeconomic status: Upper middle /Lower middle /Upper lower /Lower

- Diagnosis /proposed surgery/previous medical or surgical history, drug history.

### B. Questionnaire:

- i) Previous Anaesthesia exposure and Basic knowledge about anaesthesia -
  1. Have you ever received /administered anaesthesia previously? yes / no
  2. Is anaesthesia necessary for any type of surgery? Yes/ No/Does not know
  3. Are you aware of different types of anaesthesia? Yes/ No
  4. Are there any anaesthetic complications that you are aware of? Yes/ No
  5. Do you know that there are any risks in providing anaesthesia to patients with hypertension, diabetes mellitus, asthma, major diseases, alcohol and smoking consumption? Yes/ No/Does not know
  6. Do you think preoperative investigations are needed to administer safe anaesthesia? Yes/ No /Does not know
  7. Do you know nil per mouth needed before and after surgery? Yes/ No/Does not know
- ii) Knowledge of Anaesthesiology as a speciality and role of anaesthesiologist
  8. Is anaesthesiology a separate medical discipline? Yes / No /Does not know
  9. Role of anaesthesiologist in treatment: Skilled assistant /Other role/ Does not know
  10. Role of anaesthesiologist in OT (Operation Theatre): Administer drugs only /Administer drugs and monitor patients throughout operation/ Administer drugs and monitor patients throughout operation and manage in postoperative period also/ Does not know.
  11. Role of anaesthesiologist in postoperative period: Patient monitoring /Manage postoperative complications / Manage pain/ All the above /Does not know
  12. Do you know that anaesthesiologists are providing services in ICU, Trauma care centre, resuscitation team and pain clinics: Yes /No
- iii) Advantage of anaesthesia OPD in reducing patient's anxiety level, counselling and education/awareness.
  13. Do you have fear/anxiety about anaesthesia procedures: Yes /No
  14. Visiting anaesthesia OPD was helpful to know about the choices of anaesthesia, complications and post operative pain managements etc.: Yes /No
  15. Does visiting anaesthesia OPD helped to reduce your level of anxiety and fear about anaesthesia procedures and fear to undergo surgery: Yes /No

The data obtained was summed up and presented as descriptive statistics using Microsoft Excel. Total numbers of similar responses to a question were grouped and expressed as proportion of total

population. The data was analysed using SPSS software.

## RESULTS

Total 760 patients who attended the anaesthesia OPD were interviewed with a structured questionnaire including sociodemographic details and 15 questions to know the knowledge of the patients attending anaesthesia OPD about anaesthesiology as a branch of medical speciality and the role of anaesthesiologists in patient care.

## Sociodemographic details

Out of 760 patients who attended the anaesthesia OPD, 62.89 % (478) patients were female and 37.10% (282) patients were male. (Figure-1).

Majority of the patients (258) were of age group between 31-50 years (Figure:2).

Total 36.6% (278) subjects were illiterate and 11.4% (87) were educated above high school (Table:1)).

Majority of the subjects were occupied in farming and other unorganized sector occupations and 23.9% were housewives.

Most of the subjects 68.55% (521/760) were from lower socioeconomic status of the society (table:1).

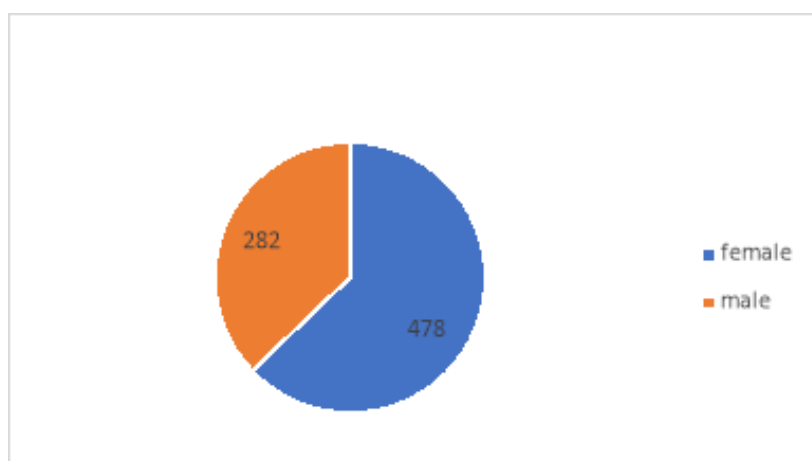


Figure 1-Sex Distribution

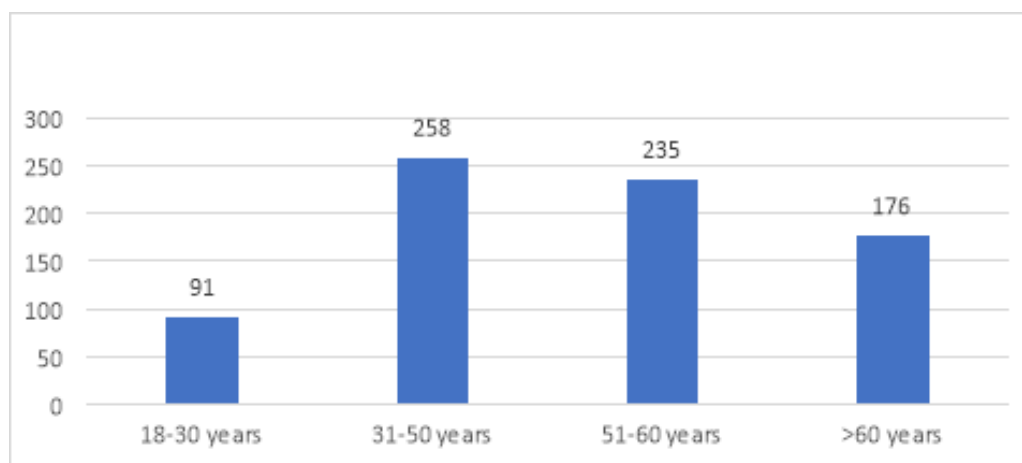


Figure 2-Age distribution

Table 1- Educational Qualification And Socioeconomic Status

Educational Qualification	N, Percentage
Illiterate	278, 36.6%
Primary school	128, 16.9%
Secondary school	268, 35.2%
High school	53, 7%
Graduate	33, 4.4%
Socioeconomic Status	Percentage
Upper middle	22, 2.9%
Lower middle	217, 28.6%
Upper lower	282, 37.1%
Lower	239, 31.4%

**Previous Anaesthesia exposure and basic knowledge about anaesthesia (Table: 2)**

Total 50 % (380) of subjects reported that they have received some kind of anaesthesia. Around 81.3 % (618) of the subjects know that anaesthesia is needed to be given before surgery. However, only 14.3 % (109) of subjects had knowledge about various types of anaesthesia while the majority 85.7% (651) were unaware of any such type.

Total 21.4% (179) of subjects were aware that complications may arise due to anaesthesia while the rest 78.6 % (581) had never heard of any such complications related to anaesthesia. During interview, 56.3% (426) of subjects were aware that patients with any co-morbidities were at high risk of developing complications following anaesthesia and 56.23% told that investigations are needed to be done before administering anaesthesia. Most 65% (494) of subjects were aware that patients undergoing surgery had to be kept nil by mouth for the prescribed time before surgery.

**Knowledge of Anaesthesiology as a speciality and role of anaesthesiologist (table 2)**

Only 57.7% (439) of subjects were aware that anaesthesia is a separate discipline in the medical field

and 35.2% (268) does not know the role of anaesthesiologist in the treatment. Only 23.9% (182) of subjects were of the opinion that anaesthesiologists administer drugs during OT and take care of patients in the postoperative period while others think that they administer drugs only in the OT. Only 29.6 % (222) opine that anaesthesiologists do everything from patient monitoring to pain management in the postoperative period. 35% (268) of subjects did not even know the role of anaesthesiologists in the post-operative period. The majority of the patients 491 (64.8%) think that anaesthesiologist works only in the OT and were not knowing about role of anaesthetist outside the operation theatre.

**Advantage of anaesthesia OPD in reducing patient's anxiety level, education and counselling (table 2)**

Majority of subjects 53.5 % (407) who attended OPD had fear of anaesthesia procedures. Total 97% (739) of the subjects were benefitted from anaesthesia OPD, in knowing the information about the choice of anaesthesia, complications and plan of post-operative pain management, thereby reducing their anxiety levels.

**Table 2: Basic Knowledge Of Anaesthesia And Role Of Anaesthesiologist**

Sr no.	Question	Yes	No	Does not know
1	Have you ever given/administered anaesthesia previously?	50% (380)	50% (380)	--
2	Is anaesthesia necessary for any surgery?	81.3% (618)	11.3% (84)	7.4% (58)
3	Are you aware of different types of anaesthesia?	14.3 % (109)	85.7% (651)	--
4	Are there any anaesthetic complications that you are aware of?	21.4% (179)	78.6% (581)	--
5.	Do you know that there are risk in providing anaesthesia to patients with hypertension, diabetes mellitus, asthma, major diseases, alcohol and smoking consumption?	56.3% (426)	8.1% (63)	35.6% (271)
6	Do you think investigations are needed to administer safe anaesthesia?	56.3% (426)	8.5% (65)	35.2% (269)
7	Do you know nil per mouth needed before and after surgery?	64.8% (494)	12.7% (95)	22.5% (171)
8.	Is anaesthesiology a separate medical discipline?	57.7% (439)	11.3% (85)	31% (236)
9	13. Do you have fear about anaesthesia procedures?	53.5% (407)	46.5% (353)	--
10	14.Does visiting anaesthesia OPD was helpful to know about the choices of anaesthesia, complications and post operative pain managements etc?	97.2% (739)	2.8% (21)	--
11	15.Does visiting anaesthesia OPD helped to reduce your level of anxiety about anaesthesia procedures & fear to undergo surgery?	97.2 % (739)	2.8% (21)	--
12	Role of anaesthesiologist in treatment: 1) Skilled assistant: 54.9 % (415) 2) Other role: 9.9% (77) 3) Does not know: 35.2% (268)			
13	Role of anaesthesiologist in OT (Operation Theatre): 1)Administer drugs only: 21.1% (163) 2)Administer drugs and monitor patients throughout operation: 23.9% (182)			

	3)Administer drugs and monitor patients throughout operation and manage in postoperative period also: 29.6% (222) 4)Does not know: 25.4% (193)
14	Role in postoperative period 1)Patient monitoring: 23.9 % (182) 2)Manage postoperative complications: 5.6% (43) 3)Manage pain: 4.2% (32) 4)All the above: 29.6 % (224) 5)No Role after Surgery: 1.4% (11) 6)Does not know: 35.3% (268)
15	Do you know anaesthesiologist are working in 1)only OT: 64.8 % (491) 2)ICU: 2.8% (22) 3)Trauma care centre:1.4% (11) 4)resuscitation team :1.4 % (11) 5) pain clinics:2.8 % (22) 6)does not know :26.8% (203)

## DISCUSSION

In the modern era, anesthesiologist is also known as perioperative physician.<sup>2</sup> Complex surgical and high-risk cases are possible only because of tremendous advancement in the specialty of anesthesia. Apart from this, anesthesiologists play a major role in pain management, ICU, trauma care, resuscitation teams, training programs and non-operating room anesthesia, which is going unrecognized by the patients. The general population is having limited knowledge about the branch of anesthesia and the role of anesthesiologist<sup>3</sup>. Most of the time anesthesiologists were unrecognized by the general population, this can also lead to a negative impact on choosing this branch by postgraduate medical students. With so much advancement in the branch of anesthesiology, patients and the public population should get educated.

Our hospital is one of the important tertiary care hospitals located in the northern geographical location in Satpuda ranges of Maharashtra state covering distinctly large tribal communities. These Tribal communities (most commonly Bhil Tribe) have predominantly rural lifestyle with emphasis on kinship ties & endogamy, often living in hilly and forested areas with practices of shifting cultivation and subsistence agriculture, often face poverty, lack of access to education and healthcare. The annual outpatient department (OPD) total number in this tertiary care hospital is around 2,88,000 to 3,00,000 and 40,000 annual IPD. The total number of surgeries (major & minor) currently rising to around 12000 per year and anesthesia OPD total number is around 3000 per year. Hence, this study was conducted to assess the patients' level of knowledge about anesthesiology as a branch and the role played by anesthesiologists in patient care. Here we have found that patients had limited knowledge about the specialty of anesthesiology and the various important role played by anesthesiologists in patient care both inside and outside the operation theatres. Our hospital is situated in north Maharashtra and the literacy rate is about 78.2% in our district<sup>4</sup>. In our study, 36.6% of

population was illiterate. This we have to take into consideration as their level of knowledge and education might have significantly affected the level of patients' knowledge regarding anesthesia and anesthesiologists.

In the study by Tulika Singh et al in rural hospitals in Delhi 55.6 % patient had some awareness about anaesthesia but only 32.8 percentage of patient had knowledge that anaesthesiologists are Doctors. About 42.8 % population were aware that anaesthesia is a separate branch in their study as compared to 58% population for our study<sup>5</sup>.

Garcia-Marcinkiewicz AG et al study, they found that just 32% of participants knew completely about anesthesia and it was probably because they did not know what anesthesiologists do during the surgery.<sup>6</sup> They also found that though many patients were having high literacy rate they did not have any knowledge about anesthesia. This may be because of lack of contact with anesthesiologist and previous exposure to anesthesia.

Patients generally desire to know as much as possible about anesthesia techniques, complications and post-operative pain management during the preoperative appointment. The most effective means of disseminating this data will be an informative pamphlet. And conducting this type of cross-sectional study also enlightens the population about anesthesia. Baaj J et al found out that anesthesiologists should educate their patients before surgery to establish rapport and thereby stress-free preoperative period by distributing pamphlets concerning the type of anesthesia and use various types of media to educate illiterate people about anesthesia<sup>7</sup>.

In the current study 53% had the fear of receiving anesthesia and 97 % were of the opinion that their fears and anxiety had decreased due to visiting the anesthesia OPD. This may be because patients got information about the choice of anesthesia, details about the procedure which they are going to undergo, preoperative instructions about NPO (Nil Per mouth) guideline, complications and their management and

postoperative analgesia. The preoperative visit will help the patient to make a rapport with the anesthesiologist. This can reduce perioperative stress and fear of anesthesia and surgery.

Ruhaiyem ME et al found in their study that fear and anxiety about surgical procedures and anesthesia are common and they also found that 88.9% of patients posted for surgery showed an overall fear, whereas 10.8% of the participants were precisely worried about anesthesia and the fear of dying during surgery was at the top of the list of their subjects' concerns toward anesthesia<sup>8</sup>.

In the present study it was seen that 29% of participants were of the opinion that anesthesiologists administer drugs in the OT and most of them did not know their role in the postoperative period.

Sagün et al and KFd Oliveira et al in their studies have seen that about 56% patients felt that the anesthetist could have a role in the management of patients who experienced breathing difficulties outside of the operation room. While 10% of patients responded that anesthetists control the patients in the post-operative care unit. The reason for this is that they may have seen anesthesiologists working in the recovery room during their post-operative period<sup>9</sup>.

In the present study it was found that 52% of the participants were of the opinion that anesthesiologist work only in the OT and they don't have any role in any other part of the hospital

KFd Oliveira et al found that Respondents awareness about role of anesthetists in the ICU were found to be limited such that about 72.5% of patients answered that anesthetists can work in the ICU. Even though their department has a regular duty schedule in the ICU patients are still not aware that we have a role<sup>10</sup> In the present study, only 2.8% participants were of the opinion that anesthesiologist work in ICU.

## CONCLUSION

We found that patients have limited knowledge and perception about anesthesia and the role of anesthetists.

Socio-demographic factors observed in this study, like age, gender, occupation, education and Socioeconomic status, may be the factors affecting knowledge and perception about anesthesia and the role of anesthetists, and these need to be studied in depth.

Doing good extensive pre-anesthesia evaluation of patients in pre-anesthesia OPD helped in alleviation of fear and anxiety about anesthesia among patients which is reflected from the results of our study and was useful in achieving awareness about anesthesia specialty among patients.

## LIMITATIONS

This study is institution based which could limit its generalizability. Subjects' self-reports served as the primary data source for this investigation. This allows individuals to express opinions based on what they

believe others want to hear rather than what they know or think. The research used a cross-sectional approach, which only revealed participants' knowledge and attitudes during the survey. The depth of knowledge can be better understood with the use of longitudinal research to establish temporal relationship.

## FUTURE SCOPE

The following research methods can be undertaken to increase the knowledge of anesthesia among the patients and their relatives.

1. The participants should include persons of all ages and ethnics.
2. A cohort study over time after giving educational insights about the subject and then seeing whether there is a change would lead to more good results and there-by can be applicable on a larger scale.
3. Using different approaches to health education such as single approach & mass approach in the form of symposium, short talks and role plays and trainings can increase the insight about the scope of the subject of anesthesia in the patients and their relatives. If the efficacy of these training methods is investigated using a longitudinal approach this would lead to new evidence in the field for raising awareness.

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## CONFLICT OF INTEREST: Nil

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