# A Survey on Awareness about the Role of Anesthesiologists and Anesthesia Given Among General Public and Medical under Graduates

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**Abstract:** Background: Present day anesthesiology is based on the use of newer and safer drugs, better patient monitoring, pain management and critical care. But the general public as well as medical under graduates know little of these developments. Aims: To assess the level of awareness of anesthesia and anesthesiologists among general public of different academic status and medical undergraduates. Method: This cross sectional study was conducted on 360 persons divided into 2 groups (persons coming to our college and hospital and medical undergraduates) of age 18-65 years to assess the knowledge regarding anesthesiology and the anesthesiologists. All collected data was categorized into 3 subgroups each in two groups. Perception of anesthesiologist as a separate faculty increased from matriculation and below, graduate and postgraduate population which was 23.3%, 48.7% and 86.7% respectively, whereas in medical undergraduates it increased from I , II to III MBBS which was 46.7 %,53.3% and 93.3% respectively .Altogether 23 questions were asked in a questionnaire and compared in two groups. Statistical analysis was done by calculating percentages using Chi2 test. Results: Reflects the wide spread ignorance and misconceptions about anesthesiology and anesthesiologists which still prevails in public in India. Conclusions: There should be involvement of electronic and print media in educating general population, irrespective of their educational status; Anesthesiologists need to spend more time during PAE with their patients explaining in detail their roles peri-operatively, techniques, complications, risks and consent. The existing medical curriculum should be reformed in terms of increasing weightage of Anesthesia subject in exams. [UBhatia Natl J Integr Res Med, 2018; 9(1):80-87]

**Key Words**: Anesthesia, Anesthesiologist, awareness, general public, medical undergraduates

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**Introduction:** Anesthesiology as a specialty has evolved tremendously over the last few decades following its first successful public demonstration way back in 1846. An anesthesiologist does not spend as much time with a patient as a surgeon does. He gets to 'talk' with his patient only during his one or two preoperative visits. There is a widespread misconception amongst the public about the role of anesthesiologists and their responsibilities inside or outside the operating room.[1,2,3]The role of anesthesia research is not only to develop safe anesthesia techniques but also to generate public awareness about anesthesia and the role of an anesthesiologists.[4]

Anesthesiologists play a very crucial role in perioperative care, intensive care, labor analgesia, and pain clinic. The role of anesthesiology and anesthesiologists has traditionally been viewed as behind the screen specialty, and it is only in the last few decades, this specialty has grown beyond the four walls of the operation theater and the role of anesthesiologists is being increasingly appreciated in pain clinic, labor analgesia, accident and emergency, and in Intensive Care Unit (ICU) but still it is felt that anesthesiologist does not get the due he/ she deserves, both in the eyes of the public and also fellow medical professionals.[5,6,7] Although there have been surveys conducted before to assess knowledge of anesthesia and anesthesiologists before in rural areas [4] , general population[5,6,8,9] women hospital [10] but no survey was done among the medical undergraduates and compared it with awareness in general public.

The present study was conducted specifically to assess the level of awareness about the role of anesthesia and anesthesiologists among general public of different academic status and medical undergraduates.

**Method:** After Institutional Ethical Committee approval this cross sectional observational study was done on the awareness among the general population and medical undergraduates regarding anesthesiology as a separate medical discipline, role of anesthesiologists and knowledge of anesthesia.

**Inclusion Criteria:** Undergraduate medical students, general public from different academic status who were willing to fill the questionnaire coming to our medical college and hospital.
age 18 – 65 yrs

**Exclusion criteria:** who were not willing
<18 and >65 yrs

The study conducted was divided in two groups which were subdivided into 3. Sample size was 360 persons.

After confirming their willingness to take part in the questionnaire, persons were explained about the pattern of questions. Questionnaire was made available in two languages – Gujarati and English. Participants could opt for language of their preference. There was interpreter to help in explaining questions. Survey questionnaires were collected and analyzed. Statistical analysis was done by calculating percentages using Chi squared test and correlation studies.

The questionnaire was predesigned and pretested and it consisted of three sections. The first section was demographic data and role of anesthesiologist in preoperative period, second section had questions about role of anesthesiologist in operation theatre, postoperative period and periphery, and the third section included questions about knowledge of Anesthesia and its techniques. There were 23 questions in this questionnaire. There was no section demarcation for participants.

**Table 1: Group Division**

| | |
|---|---|
| Group X(General public ) N=180 | Group 1 (Matriculation and below) |
| | Group 2 (10th standard -Graduation ) |
| | Group 3 (Post graduation) |
| Group Y( medical Under graduates) N=180 | Group 5 ( I MBBS) |
| | Group 6 ( II MBBS) |
| | Group7 ( III MBBS) |

**Table 2: Sex distribution n=360**

| | | | male | female |
|---|---|---|---|---|
| Group X | n=180 | Group 1(Matriculation and below) | 28 | 32 |
| | | Group 2 (10th standard -Graduation ) | 15 | 45 |
| | | Group 3(Post graduation) | 36 | 24 |
| | Pooled frequency | | 79 | 101 |
| Group Y | n=180 | Group 5 ( I MBBS) | 29 | 31 |
| | | Group 6 ( II MBBS) | 22 | 38 |
| | | Group7 ( III MBBS) | 28 | 32 |
| | Pooled frequency | | 79 | 101 |

**Table 3: Anesthesiologist as a separate faculty in relation to literacy levels**

| Groups | Education Level | No/% | A) Separate Faculty | B) Physician Posted In OT |
|---|---|---|---|---|
| Group X | GP1 (Matriculation and below) | no | 14 | 46 |
| | | % | 23.3 | 76.7 |
| | Gp2 (10th standard -Graduation ) | no | 28 | 32 |
| | | % | 48.7 | 53.3 |
| | GP3 (Post graduation) | no | 52 | 8 |
| | | % | 86.7 | 13.3 |
| Group Y | Gp5 ( I MBBS) | no | 28 | 32 |
| | | % | 46.7 | 53.3 |
| | Gp6 ( II MBBS) | no | 32 | 28 |
| | | % | 53.3 | 46.7 |
| | Gp7 ( III MBBS) | no | 56 | 4 |
| | | % | 93.3 | 6.7 |

**Table 4: Roles in preoperative period**

| | | Group X | | Group Y | |
|---|---|---|---|---|---|
| | | **Pooled frequency** | **%** | **Pooled frequency** | **%** |
| 1. fitness for surgery is decided by | a) surgeon | 150 | 83.4 | 136 | 75.5 |
| | b) anesthesiologist | 0 | 0 | 0 | 0 |
| | c) physician | 24 | 13.3 | 32 | 17.7 |
| | d) don't know | 06 | 3.3 | 06 | 03.3 |
| 2. Who decides nil by mouth status for surgery | a) surgeon | 66 | 36.6 | 92 | 51.1 |
| | b) anesthesiologist | 0 | 0 | 0 | 0 |
| | c) nurse | 114 | 63.4 | 88 | 48.9 |
| | d) don't know | 0 | 0 | 0 | 0 |
| 3. Preoperative advises are given by | a) surgeon | 54 | 30 | 76 | 42.2 |
| | b) anesthesiologist | 0 | 0 | 0 | 0 |
| | c) nurse | 126 | 70 | 104 | 57.8 |
| | d) physician | 0 | 0 | | |

**Table 5: Role of anesthesiologist in intraoperative and post operative period and periphery**

| | | Group X | | Group Y | |
|---|---|---|---|---|---|
| | | **Pooled frequency** | **%** | **Pooled frequency** | **%** |
| 3. in OT | a) as a skilled assistant to surgeon | 32 | 17.8 | 58 | 32.2 |
| | b) No idea | 56 | 31.1 | 1 | 0.6 |
| | c) Administer drug and goes away | 0 | 0 | 5 | 2.8 |
| | d) Administer drug and monitors pat intraoperatively | 92 | 51.1 | 116 | 64.4 |
| 4.in post operative period | a) monitors pat only | 56 | 31.1 | 19 | 10.5 |
| | b) does something in post op period immediate complications | 28 | 15.5 | 87 | 48.4 |
| | c) manages post operative pain | 22 | 12.2 | 50 | 27.8 |
| | d) None of the day | 74 | 41.1 | 24 | 13.3 |
| 5. in management of post op complications | a) surgeons | 116 | 64.4 | 65 | 36.1 |
| | b) physicians | 24 | 13.3 | 16 | 8.9 |
| | c) anesthesiologist | 16 | 8.9 | 61 | 33.9 |
| | d) a+c | 24 | 13.3 | 38 | 21.1 |
| 7. in CPR | A )in OT | | | | |
| | Yes | 72 | 40 | 147 | 81.7 |
| | No | 36 | 20 | 15 | 8.3 |
| | Don't Know | 72 | 40 | 18 | 10 |
| | b) ward | | | | |
| | Yes | 24 | 13.3 | 49 | 27.2 |
| | No | 58 | 32.2 | 70 | 38.9 |
| | Don't Know | 98 | 54.5 | 61 | 33.9 |
| | c) ICU | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Yes | 56 | 31.1 | 99 | 55 |
| | No | 34 | 18.9 | 36 | 20 |
| | Don't Know | 90 | 50 | 45 | 25 |
| 8. role in patients on ventilator | a) trauma | | | | |
| | Yes | 24 | 13.4 | 92 | 51.1 |
| | No | 44 | 24.5 | 23 | 12.8 |
| | Don't Know | 112 | 62.1 | 65 | 36.1 |
| | b) SRI | | | | |
| | Yes | 32 | 17.8 | 98 | 54.4 |
| | No | 34 | 18.9 | 21 | 11.7 |
| | Don't Know | 114 | 63.3 | 61 | 33.9 |
| | c) ICU | | | | |
| | Yes | 28 | 15.5 | 114 | 63.3 |
| | No | 30 | 16.6 | 11 | 6.1 |
| | Don't Know | 122 | 67.9 | 55 | 30.6 |
| 9. role in periphery | a)in labor pain | | | | |
| | Yes | 74 | 41.1 | 131 | 72.8 |
| | No | 90 | 50 | 36 | 20 |
| | Don't Know | 16 | 8.9 | 13 | 7.2 |
| | b) in cancer pain | | | | |
| | Yes | 24 | 13.3 | 102 | 56.7 |
| | No | 72 | 40 | 34 | 18.9 |
| | Don't Know | 84 | 46.7 | 44 | 24.4 |

**Table 6: Knowledge about Anesthesia**

| | | **Group X** | | **Group Y** | |
|---|---|---|---|---|---|
| | | **Pooled frequency** | **%** | **Pooled frequency** | **%** |
| 10. Different techniques of anesthesia | a) GA only | 18 | 10 | 33 | 18.3 |
| | b) Regional only | 16 | 8.9 | 16 | 8.9 |
| | c)No idea | 64 | 35.5 | 18 | 10 |
| | d) GA and Regional | 82 | 45.6 | 113 | 62.8 |
| | | | | | |
| 11. Agents in anesthesia | a) Inhalational | 24 | 13.3 | 3 | 1.7 |
| | b) Intravenously | 28 | 15.6 | 22 | 12.2 |
| | c)Both | 60 | 33.3 | 152 | 84.4 |
| | d) No idea | 68 | 37.8 | 3 | 1.7 |
| | | | | | |
| 12. How GA is given | a) with handkerchief | 6 | 3.3 | 5 | 2.8 |
| | b) specialized equipments without monitoring | 4 | 2.2 | 5 | 2.8 |
| | c)specialized equipments with monitoring | 78 | 43.3 | 158 | 87.7 |
| | d) No idea | 92 | 51.2 | 12 | 6.7 |
| | | | | | |
| 13.Complications of anesthesia | a)in GA | | | | |
| | Yes | 44 | 24.5 | 125 | 69.5 |

| | | | | | |
|---|---|---|---|---|---|
| | No | 70 | 38.9 | 55 | 30.5 |
| | Don't Know | 66 | 36.6 | 0 | 0 |
| | b) in Regional | | | | |
| | Yes | 30 | 16.7 | 94 | 52.2 |
| | No | 82 | 45.5 | 86 | 47.8 |
| | Don't Know | 68 | 37.8 | 0 | 0 |
| 14. awareness of consent | a) surgery | | | | |
| | Yes | 106 | 58.8 | 106 | 58.8 |
| | No | 60 | 33.3 | 28 | 15.6 |
| | Don't Know | 14 | 7.9 | 46 | 25.6 |
| | b) anesthesia | | | | |
| | Yes | 122 | 67.8 | 105 | 58.3 |
| | No | 40 | 22.2 | 36 | 20 |
| | Don't Know | 18 | 10 | 39 | 21.7 |
| | c) High risk anesthesia | | | | |
| | Yes | 66 | 36.6 | 64 | 35.5 |
| | No | 76 | 42.3 | 59 | 32.8 |
| | Don't Know | 38 | 21.1 | 57 | 31.7 |
| 15. anesthesia in sp conditions | high risk anesthesia in different medical diseases | | | | |
| | Yes | 114 | 63.4 | 104 | 57.8 |
| | No | 42 | 23.4 | 44 | 24.4 |
| | Don't Know | 24 | 13.2 | 32 | 17.8 |
| | high risk for smoking and alcohol | | | | |
| | Yes | 74 | 41.1 | 79 | 43.9 |
| | No | 66 | 36.6 | 68 | 37.8 |
| | Don't Know | 40 | 22.3 | 33 | 18.3 |
| | Sonography in anesthesia | | | | |
| | Yes | 2 | 1.1 | 8 | 4.4 |
| | No | 118 | 65.5 | 114 | 63.3 |
| | Don't Know | 60 | 33.4 | 58 | 32.3 |

*sp : special , GA : general Anesthesia, SRI : serious respiratoy disease, ICU intensive care Unit, adm : administers

**Results:** A total of 360 persons participated in this survey. Male female ratio in both the groups were same 1.5: 1.(table 2) Age distribution in group X was between 18-65 yrs and in group Y it was medical under graduates they all came in 18 – 21 yrs .

With increase in the literacy level the knowledge that anesthesiologist is a separate faculty increased in group X from 23 .3 % to 86.7% i.e. from matriculation and below to post graduation literacy level while in the medical undergraduate group if we see from I MBBS level to III MBBS level knowledge increases from 46.7% to 93.3%.(table 3).

In the preoperative period 83.4% in Group X and 75.5 % in group Y believed that it was surgeons who decided the fitness for surgery and the rest thought it to be physicians . 63.4% in group X and 48.9 % in group Y believed that Nil by mouth status before and after surgery of the patients were decided by nursing staff and and rest thought it to be surgeons as

depicted in table 4. Similarly majority in both the groups i.e. 70% in group X and 57.3 % in group Y said that preoperative advise was decided by nursing staff.

Majority of persons 51.1 % of group X and 64.4% of group Y believed that anesthesiologist administers the drug as well as monitors the patient intraoperatively whereas 17.8 % of group X and 32.2 % of group Y still believed that anesthesiologist is as a skilled assistant to surgeon (Table 5)

64.4 % in Group X and 36.1% in Group Y thought that post op complications were managed by surgeons primarily and 13.3% in group X and 21.1 % thought that was a joint effort of surgeons and anesthesiologist .(table 5)

On asking about role of anesthesiologist in periphery only 41.1% in group X but 72.8% in medical under graduates believed that painless labor is managed by anesthesiologist similarly only 13.3 % in group X and 56.7 % in group Y said that there is some role in management of cancer pain .(Table 5 )

Consent is a medicolegal binding between the patient and the doctor but majority of the participants thought it to be just a formality in the form of paperwork needed prior to the surgery. The percentage increased to 67.8 in group X and remained same in group Y 58.3 which showed relatively good job was done by the preoperative team. (Table 6)

**Discussion:** The purpose of this study was to assess the general public awareness, concerns about anesthesia and anesthesiologist s in Ahmedabad , Gujarat (India)

Although several surveys of this nature have been performed worldwide, most were performed in only one or a few hospitals representing only patients' awareness. Furthermore, all previous surveys included patients awaiting elective surgery [1,2,3,4,5,6,7,8,9,10] with the result that the participants may have had an increased interest in anesthesia or surgery. However, the our survey targeted members of the general public and the medical undergraduates who were not linked with anesthesia and were not awaiting surgery, likely yielding more objective results than all the earlier surveys

Development of anesthesia as a specialty has enabled the advancements in surgical management and critical care. In our study a large portion of population with below graduation level education did not even know the anesthesiologist s as a doctor. In previous studies conducted elsewhere 50% to 88.7% people knew the anesthesiologist as a doctor.[2, 3, 11, 12]

In our study the source of information regarding the anesthesiologist as a doctor was by virtue of reading somewhere or from the attending physician/surgeon in majority of the population. The electronic and print media has a tremendous potential to educate the general population, but this potential has always being under-utilized. If the patients have before hand knowledge through audiovisual or print media about anesthesiology then they may have an option to enquire and choose their anesthesiologist so that a less qualified or unqualified person won't be involved in the practice of anesthesiology . Educating the physicians or surgeons regarding our discipline may improve the knowledge that the patients get from them regarding our role in patient management.

We found that majority of the illiterate people knew anesthesiologist as a skilled assistant to surgeon. But the population with education level of matriculation and above had an impression that the anesthesiologist s have some definitive role in the operation theatre. Upon asking about the role of the anesthesiologist s in the operation theatre most of the people answered that the anesthesiologist s administers drug once and goes away. This was in contrast to the findings of the surveys conducted in developed countries where a majority of patients felt that the anesthesiologist stays during operation to look after their vitals.[1, 12] Role of the anesthesiologist s after induction was not clear to many patients in previous studies.[8, 13]

As on today, much of the emphasis in anesthesiology is on intra-operative patient monitoring to improve patients' safety. But in our study majority of the population was unaware of intra-operative patient's monitoring which was similar to the finding of the study by Shevde and Panagopoulos.[13] Regarding the role of the anesthesiologist in the peri-operative patient care the general population needs to be educated that the anesthesiologist is in fact an internist in the operating room. In our study we found that majority of the population did not have any idea regarding anesthesiology as a separate medical discipline. This was in contrast to the study finding of Gurunathan and Jacob.[8]

Most of the people in our study knew general anesthesia as an anesthesia technique. Upon asking

about general anesthesia most of the people knew the drugs used in general anesthesia as inhalational agents and the mode of administration is through a handker-chief without monitoring. Excepting the medical undergraduates, none knew about the intravenous and other inhalational anaesthetic agents. Present day anesthesiology is based on use of safer drugs and drug delivery systems. In our study majority of the population was ignorant about these developments (table 6) Most of the people knew about the techniques of regional anesthesia with majority answering local anesthesia as a type of regional anesthesia. Now a day, the advancements in regional anesthesia have allowed many complex surgical procedures to be performed under regional anesthesia. But in our study no one knew about advantages of regional anesthesia on other types of anesthesia.

The finding that is more disappointing in our study is the lack of awareness regarding our discipline among the medical undergraduates. The role of anesthesiologist in the post-operative period and pain management is unclear to many medical undergraduates (Table5 ). Many of the medical undergraduates were ignorant about regional anesthesia, the drugs used as well as the complications of general anesthesia (table 6). This lack of awareness may be one of the reasons why the medical undergraduates are not eager to pursue a carrier in anesthesiology. The need to reform the existing medical curriculum in terms of increasing the hours of anesthesiology teaching and compulsory internship posting in anesthesiology should be emphasized so that undergraduate students can have better exposure to different domains of anesthesiology.

The patients remember more about their surgeons than their anesthetist may be because of the limited time we spend in communicating with patients resulting in not obtaining adequate patient satisfaction as compared to other specialists. The education of other health care professionals may be enhanced by publishing our papers in their journals and by participating in multidisciplinary hospital committees. Information that increases public awareness of the role of anesthesiologist will contribute towards improving the image of anesthesia. [2] To improve our image in the community the needed efforts can be directed towards improving our communication with patients and increasing our exposure in the community via newspapers, audiovisual media and lectures.

A task force on public education and information by the American Society of Anesthesiologist s recommends that public education program should take place at the grass roots level and has appointed a manager of state programs to facilitate this endeavor.[11] similar initiative if taken in our country may strengthen our endeavor to improve our image among the general population.

Better knowledge about various anesthesia techniques and their possible complications in various conditions of patients may reduce the number of medico legal litigations. A good communication with the physician as judged by the patient is associated with lower incidence of malpractice litigation .[14] Well informed patients can select their anesthesiologist s which can help in improving the peri-operative care which in turn will reduce the morbidity. The study population in our study (people coming to our college and hospital and medical undergraduates of our college) and the small sample size are the few limitations to our survey. But the result of the study reflects the wide spread ignorance and misconceptions about anesthesiology and anesthesiologist s still prevalent in public mind in India.

Thus we conclude and recommend that the ignorance regarding the anesthesiologist s and anesthesiology is still prevalent among the general population so to disseminate information about anesthesia, the existing educational methods needs to be evaluated and newer initiatives should be looked for. There should be involvement of electronic and print media in educating general population, irrespective of their educational status, which would have a strong impact on our effort in educating them. Our success in educating the public, other health care professionals about our role in patient management can play an important role in our future progress.

Anesthesiologist s need to spend more time during PAE with their patients. They should introduce themselves to the patients and explain in detail their roles peri-operatively, techniques, complications, risks and take consents of the patients themselves etc.

The existing medical curriculum should be reformed in terms of increasing weightage of Anesthesia subject in exams (rest all the clinical subjects have separate exam paper), by increasing the hours of anesthesiology in undergraduate teaching and compulsory final MBBS and internship posting in Anesthesiology.

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