



Original Research Article

An assessment of the patient's understanding and knowledge of the relevance of pre-anesthetic check-up

Unnati Asthana^{1,*}, Anshumali², Shruti Sharma²¹Dept. of Anaesthesia, ESIC Dental College & Hospital, Rohini, Delhi, India²Dept. of Anaesthesia, North DMC Medical College & Hindu Rao Hospital, New Delhi, Delhi, India

ARTICLE INFO

Article history:

Received 11-07-2022

Accepted 19-11-2022

Available online 07-04-2023

Keywords:

Preanesthetic checkup (PAC) clinic

Questionnaire

Knowledge

Anesthesiologist

ABSTRACT

Introduction: Pre anesthetic checkup is an important prerequisite of any surgery. Therefore the importance of a detailed pre anesthetic check-up including a thorough history and clinical examination should be known to all the patients undergoing any kind of surgery. It can be gauged by the fact that missing out even a single event like a previous drug reaction may jeopardize a precious life.

Aim: The aim of our study was to assess the understanding of the importance of a pre-anesthetic check-up (PAC) and its components amongst the population coming for elective surgeries in a tertiary care hospital in Urban India.

Materials and Methods: A prospective randomized observational study was conducted including 450 patients (18-60yrs) coming to a tertiary hospital in a metropolitan city over a period of three months. Each patient was asked to fill out a questionnaire consisting of 16 questions in Hindi (local language)/ English in the waiting area. Every question had multiple possible choices and they had to choose one most appropriate answer according to them. Every correct answer was marked 1 while an incorrect answer was given a score of 0.

Statistical Analysis: The data was expressed as percentage and frequency. The correlation tests were applied using the appropriate tests according to the latest SPSS version and included the unpaired t-tests and one way analysis of variance.

Results: Out of the 450 patients, only 21.2% had the knowledge of a pre anesthetic clinic. It was also observed that only 19.4% were aware that risk assessment is done in pre anesthetic checkup for undergoing proposed surgery. 54.6% did not know about the importance of optimization before surgery. 99.2% desired to receive information about anesthesia before experiencing.

Conclusion: Despite the improved literacy rate, there is a dearth of knowledge about the importance of the pre-anesthetic checkup (PAC) clinic visit before an elective surgery and the role of an anesthesiologist in the perioperative period.

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

The discipline of anesthesia has evolved and taken huge leaps in the last few decades. Anesthesiology is not merely limited to the operation theatres anymore, but revolves around many aspects of patient care like critical care,

pain clinics, labor analgesia, remote areas like the MRI, CT scans, etc.¹ With the advent of modern techniques of anesthesia administration and monitoring, it has become much safer as well.² However, the major factor in reducing peri-operative morbidity and mortality is not equipment and infrastructure, but a detailed Pre-anesthetic checkup (PAC) by a qualified Anesthesiologist and the maximal optimization of each patient preoperatively.³ The

* Corresponding author.

E-mail address: asthana.unnati@gmail.com (U. Asthana).

importance of a thorough Pre-anesthetic assessment has been emphasized time and again.⁴⁻⁶

The unfortunate picture reflected in many studies published in developing countries depicts the ignorance of the purpose of revealing a detailed history of all ailments, past and present by the patients. This might put their lives at risk while undergoing even minor surgical procedures and become an anesthesiologist's worst nightmare including death and medico legal complications.⁷

However, with the improving literacy rates and online information available round the clock, we hope that the patients are better aware of the role of anesthesia, the Anesthesiologist and thus the importance of PAC.^{8,9} Hence, this study was conducted to assess the present level of knowledge among patients about the importance of Pre-anesthetic checkup.

2. Materials and Methods

We conducted this observational prospective study in a Tertiary care multi-specialty hospital in a metropolitan city in India over a period of 3 months. A total of 450 patients planned for elective surgeries visiting the PAC clinic were enrolled in the study. Patients of either sex, aged between 18-60 years, who could read and understand English and/or Hindi (local language) were included. Participation was completely voluntary and the patients were assured of their confidentiality. After an informed consent, they were given a questionnaire consisting of 16 questions in either of the languages (Table 1) in the waiting area before visiting the PAC clinic. Unwilling, cognitively impaired, and those who could not read English and/or Hindi were excluded from the study.

The patients were explained in detail how to complete the questionnaire. They were asked to mark the single most appropriate correct answer according to them out of the multiple options provided for each question.

An option of don't know was also provided with most questions. Scoring was done with each question answered correctly being given 1 mark while incorrect answer was awarded 0 marks. Patients giving don't know as answer, were also awarded 0 marks.

The entire questionnaire was to be completed in the waiting area before entering the PAC clinic.

2.1. Statistical analysis

The collected data from the questionnaire was entered in MS excel sheet and was expressed as percentage and frequency. Correlation studies were performed by unpaired t test and one-way analysis of variance using SPSS version 21 (Statistical packages for the social sciences) to study the effect of variables like age, sex, literacy level, and previous visit to PAC clinic on patient's knowledge and understanding of pre-anesthetic check up. $p < 0.05$ was

considered statistically significant.

3. Results

3.1. Patient characteristics

A total of 450 patients aged between 18-60 years, coming to pre anesthesia clinic answered the questionnaire. All the questionnaires were completely filled.

3.2. Demography

About 53.3% of our study population belonged to the age group of 18-40 years while the rest 46.7% were 41-60 years old. Out of total participants, 57.33% were males.

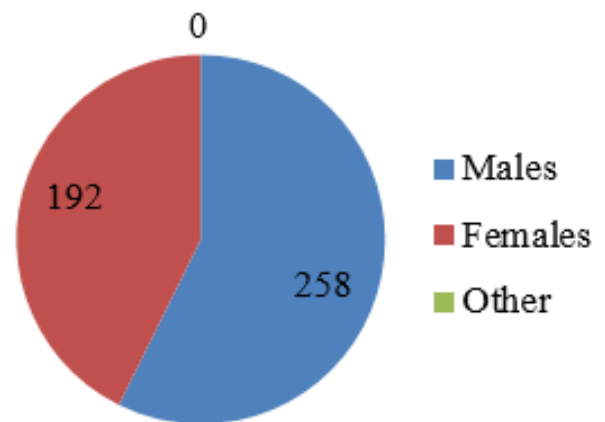


Fig. 1: Distribution according to sex.

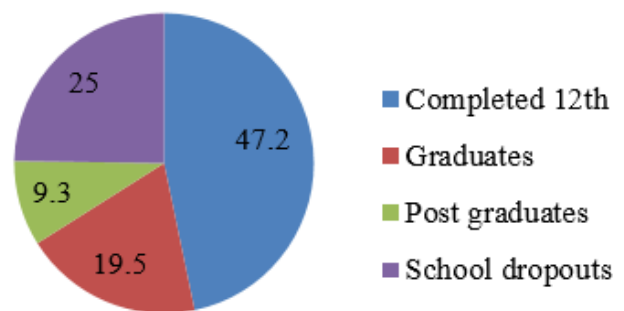


Fig. 2: Distribution according to educational qualifications.

3.3. Educational status

47.2% of our patients had completed school while only 19.5% were graduates. 9.3% of the patients were postgraduates and the rest 25% were school drop outs. We could not assess the knowledge of illiterate people in our study population as the persons unable to read or understand

Table 1: Questionnaire (English Version)

Age:	Gender:
1. Have you ever been to pre anesthetic clinic before?	a). Yes b). No
2. Why have you come to pre anesthetic clinic?	a). To follow the surgeon's instructions b). To get the date for surgery c). For pre anesthetic assessment d). Don't know
3. Have you had any anesthetic exposure in the past?	a). Yes b). No
4. What is done in pre anesthetic clinic?	a). Date for surgery is given b). Assessment of any risk during anesthesia for surgery c). General check-up before surgery d). Don't know
5. Do you think Pre anesthetic checkup is necessary before surgery?	a). Yes b). No
6. Who will do your Pre anesthetic checkup?	a). Anesthesiologist b). Surgeon c). Sister/ Technician d). Don't know
7. Do you think it's important to reveal all your medical history to the anesthesiologist?	a). Yes b). No c). Only if it is currently bothering me or if I'm taking treatment d). Don't know
8. Why do you think laboratory and radiological tests are ordered in Pre anesthetic check-up?	a). To find out if I'm fit for receiving anesthesia and undergoing surgery. b). Just to prolong the date for surgery. c). To find out any hidden medical issues with me that might increase the risk to life during the surgery. d). Don't know.
9. Do you think it is important for other medical conditions to be optimized before giving anesthesia?	a). Yes b). No
10. Do you think all the tests and examination done in the pre anesthetic clinic are necessary?	a). Yes b). Yes, but not all. c). No d). Don't know.
11. Why do you think your mouth, teeth, neck and spine are being examined in the pre anaesthetic check-up?	a). To look for any disease present there. b). To find out if there might be any difficulty in giving anesthesia as these are the regions from where anaesthesia is given. c). To d). Don't know.
12. Why do you think you are asked about substance abuse like smoking, alcohol, drugs, etc. in the pre anesthetic check- up?	a). To give us advice about quitting bad habits. b). Taking such substances may increase risk to my life during anesthesia and surgery. c). It is a routine part of the check-up; it does not have any implication on my surgery. d). Don't know.
13. If I have ever been allergic to any drug or substance, is it important for me to inform the person doing my pre anesthetic checkup?	a). Yes b). No.
14. Have you ever been given any information about the type of anesthesia by anyone that may be given to you?	a). Yes b). No
15. Would you like to receive some information about anesthesia before experiencing it?	a). Yes b). No
For women of reproductive age group:	
16. Is it important to inform about pregnancy /missed periods (at present):	a). Yes b). No

the proforma were excluded from the study.

3.4. Knowledge about PAC clinic

45.5% of the patients had already visited the PAC clinic earlier and 54.5% were visiting the PAC clinic for the first time. A striking 46.7% of the patients felt that they had come to the PAC clinic merely because their treating doctor advised so. 29.6% of the population thought this is the place where the date for the scheduled surgery is provided. Only 21.2% actually knew that the PAC clinic is for a thorough pre anesthetic assessment while the rest 3.5% had no idea why they were at the PAC clinic.

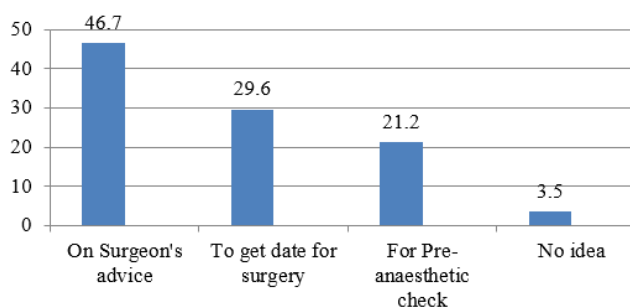


Fig. 3: Percentage distribution about knowledge of PAC visit.

3.5. Awareness about pre anesthetic check-up and anesthesiologist

Only 19.4% of our patients were aware that the assessment for any risks to them is being done in the pre anesthetic check-up for undergoing the proposed surgery under anesthesia while a majority of 48% thought it was just a routine check-up before surgery. 29% of the population thought this is the place where the date for the scheduled surgery is provided while the rest 3.6% had no idea why they were there. 26% of the patients had some kind of anesthetic exposure in the past. 23.5% of the study population knew that the PAC was being done by an anesthesiologist. 15.5% did not even know the Anesthesiologist sitting in the PAC clinic is a doctor. Unfortunately, 33% of the patients felt it is the surgeon who does the pre anesthetic checkup.

Despite the majority being unaware of the importance of a detailed PAC, 66% of the patients felt that pre anesthetic assessment is necessary irrespective of the reason.

3.6. Importance of medical, drug and allergy history in PAC

57.2% of the patients considered it necessary to reveal only those medical conditions which were bothering them at that point of time. Only 15.6% thought it was relevant to furnish information about all previous and co-existing medical ailments.

About 17.7% of the patients knew the role of laboratory and radiological tests to find out any hidden medical issues which might increase the risks during surgery while 19.2% thought that it leads to an unnecessary delay in surgery. A surprising 64.1% thought that not all investigations done at the PAC clinic are relevant.

Also, 39.4% of the patients thought the history about substance abuse like smoking, alcohol, drugs, etc was important as it could increase the risk to the patient's life during anesthesia and surgery. The majority felt it was part of giving advice for quitting bad habits.

Less than half (43.6%) of the study population considered it important to furnish previous drug/food allergy history.

Further, the importance of revealing history of missed periods or pregnancy was realized by 77.5% of the study population.

3.7. Importance of optimisation of medical issues before surgery

A little over half of our study population (54.6%) believed that there was no need of optimization of their other medical conditions (not related to surgery).

3.8. Relevance of airway/spine examination in PAC

When asked why they think the mouth, teeth, tongue, neck and spine examination is done during the PAC, 46.5% reported it is to look for any disease in those areas as well. Only 11% of the participants were aware that there might be any difficulty in giving anesthesia as these are the regions from where anesthesia is given. The rest thought this was part of a routine checkup.

It was further noteworthy that 65% of the patients reported they had never received any information regarding anesthesia before. Also, 99.2% said they would like to receive some information about anesthesia before experiencing it.

4. Discussion

The importance of a detailed Pre anesthetic evaluation before any surgery cannot be undermined. Kluger et al. examined the Australian Incident Monitoring Study database and showed that out of 6271 reports, 478 had incorrect preoperative assessment while 248 had inadequate preoperative preparation.⁷⁻⁹ Thus, for a safer perioperative environment, the knowledge of the importance of PAC is a must.^{10,11}

Our study included patients with the basic literacy level of being able to read and/or write in the local language (Hindi in our study). Also, the study was conducted in urban population. This could be a possible reason, the percentage of people aware about the PAC clinic in our study is higher than other studies like the one conducted by Singla et

al.¹² which was conducted in rural population and included even the illiterate patients coming to the clinic. We could not assess the knowledge of illiterate people in our study population as the persons unable to read or understand the questionnaire were excluded from the study.

No significant correlation was found between gender of the patient and knowledge of pre anesthesia check-up. Our results were similar to the study by Gurunathan and Jacob¹³ regarding public perception of the anesthesiologist in India. Similarly, in a study by Sagün et al.¹⁴ conducted in Turkey, though women showed higher knowledge of anesthesia, the results were not statistically significant.

In our study, education and previous experience of pre anesthesia assessment had significant impact of on the knowledge of anesthesia and both were found to be directly related. These results were similar to the study by Baaj et al.¹⁵ and by Singla and Mangla.¹²

Similarly, in a study by Swinhoe CF¹⁶ et al, patients were assessed pre-operatively for their knowledge with regard to anesthetic qualifications, anesthesia and the role of anesthesiologists. 35% did not realize that anesthesiologists were qualified doctors and only 25% could mention any duties that anesthesiologists might have outside the operating theatre.

There were a strikingly higher proportion of participants who believed unnecessary investigations are being done in the PAC clinic similar to results by Bruce et al.¹⁷ Many of them even believed that PAC leads of unjustified delay in procuring the date for proposed surgery. We strongly recommend a closed communication link of the patient not only with the anesthesiologist but also with the operating surgeon in this regard.¹⁸ As the patient's primary caregiver in the peri operative period, the surgery team should emphasize on the importance of each and every component of PAC and Anesthesia.

A study from India by Haq et al² showed that 88 out of the 3973 patients i.e. 2.2% screened at PAC had a newly diagnosed co-morbid illness. They concluded by stating that PAC can detect undetected co-morbid illness in population poorly exposed to healthcare in countries like India which can impact perioperative management.

There is a pressing need for national guidelines, designed and tailored according to the disease profile of the Indian patients.¹⁹ The guidelines must involve all stakeholders including anesthesia and surgery professionals.²⁰ It would be desirable if they were standardized to be universally applicable across all classes of healthcare facilities in India. The value of a thorough history and physical examination is critical and cannot be replaced by 'routine' investigations.²¹

5. Conclusion

Even the urban population with basic education has inadequate knowledge about pre anesthetic checkup and its importance in improving the outcome of surgery. Hence, collective efforts should be made by anesthesiologists

and surgeons involved in patient care to emphasize the importance of Pre anesthetic checkup. This will improve the perioperative outcome of the patient and proper pre anesthetic check-up can help in identifying the co morbidities. Preoperative optimization can be done and thus decreasing the risk of developing complications. This can be done by proper counseling at the time of pre anesthetic check-up, displaying posters at surgical OPD, OTs and PAC clinics, also by showing short educational videos.

6. Conflicts of Interest

None.

7. Source of Funding

None.


References

1. Apfelbaum L, Connis RT, Nickinovich D. Practice Advisory for Preanesthesia Evaluation: An Updated Report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. *Anesthesiology*. 2012;116(3):522–38. doi:10.1097/ALN.0b013e31823c1067.
2. ZAHaq, Murthy P, Malik I, Lahori VU, Chaudhary S, Ahuja S, et al. Detection of comorbid illnesses during pre-anaesthesia evaluation in a university teaching hospital: A prospective observational study. *Natl Med J India*. 2014;27(5):256–8.
3. Vanklei WA, Moons KGM, Rutten CLG, Schuurhuis A, Knape JTA, Kalkman CJ, et al. The effect of outpatient preoperative evaluation of hospital inpatients on cancellation of surgery and length of hospital stay. *Anesth Analg*. 2002;94(3):644–9. doi:10.1097/00000539-200203000-00030.
4. Armitage EN, Baskett PJK. The public image of the specialty. *Anaesthesia*. 1978;33(1):64–5. doi:10.1111/j.1365-2044.1978.tb08286.x.
5. Shevde K, Panagopoulos G. A survey of 800 patients' knowledge, attitudes, and concerns regarding anesthesia. *Anesth Analg*. 1991;73(2):190–8. doi:10.1213/00000539-199108000-00013.
6. Chew ST, Tan T, Tan SS, Ip-Yam PC. A survey of patients' knowledge of anaesthesia and perioperative care. *Singapore Med J*. 1998;39(9):399–402.
7. Kluger MT, Tham EJ, Coleman NA, Runciman WB, Bullock MF. Inadequate pre-operative evaluation and preparation: A review of 197 reports from the Australian incident monitoring study. *Anaesthesia*. 2000;55(12):1173–8. doi:10.1046/j.1365-2044.2000.01725.x.
8. Baaj J, Takrouri MS, Hussein BM, Ayyaf HA. Saudi patients' knowledge and attitude toward anesthesia and anesthesiologists - A prospective cross-sectional interview questionnaire. *Middle East J Anaesthesiol*. 2006;18(4):679–91.
9. Hofer CK, Ganter MT, Furrer L, Guthausen G, Klaghofer R, Zollinger A, et al. Patients' needs and expectations regarding anaesthesia. A survey on the pre-anaesthetic visit of patients and anaesthesiologists. *Anaesthesist*. 2004;53(11):1061–8. doi:10.1007/s00101-004-0763-4.
10. Ahsan-Ul-Haq M, Azim W, Mubeen M. A survey of patients' awareness about the peri-operative role of anaesthetists. *Biomedica*. 2004;20:5–9.
11. Hariharan S. Knowledge and attitudes of patients towards anaesthesiology and anesthesiologists. A Review. *Anesthesia Mexico*. 2009;21(3):174–8.
12. Singla D, Mangla M. Patient's knowledge and perception of preanesthesia check-up in rural India. *Anesth Essays Res*. 2015;9(3):331–6. doi:10.4103/0259-1162.158008.
13. Gurunathan U, Jacob R. The public's perception of anaesthesiologists -Indian attitudes. *Indian J Anaesth*. 2004;48(15):40–6.

14. Sağün A, Birbiçer H, Yapici G. Patients', who applied to the anesthesia clinic, perceptions and knowledge about anesthesia in Türkiye. *Saudi J Anaesth.* 2013;7(2):170–4. doi:10.4103/1658-354X.114076.
15. Baaj J, Takroui MS, Hussein BM, Ayyaf HA. Saudi patients' knowledge and attitude toward anesthesia and anesthesiologists - A prospective cross-sectional interview questionnaire. *Middle East J Anaesthesiol.* 2006;18(4):679–91.
16. Swinhoe CF, Groves ER. Patients' knowledge of anaesthetic practice and the rôle of anaesthetists. *Anaesthesia.* 1994;49(2):165–6. doi:10.1111/j.1365-2044.1994.tb03380.x.
17. Burrow BJ. The Patient's View of Anaesthesia in an Australian Teaching Hospital. *Anaesth Intensive Care.* 2019;10(1):20–4. doi:10.1177/0310057X8201000105.
18. Harms C, Young JR, Amsler F, Zettler C, Scheidegger D, Kindler CH, et al. Improving anaesthetists' communication skills. *Anaesthesia.* 2004;59(2):166–72. doi:10.1111/j.1365-2044.2004.03528.x.
19. Azab AE, Mouni AAA, Ramadan A, Hassan AMH, Skeha AMA, Alkhader WAE. Evaluate Patient's Awareness Regarding Significance of Pre-Anesthetic Checkup for Elective Surgery in Western Libya. *Arch Anesth.* 2020;3(1):1–9.
20. White PF, Kehlet H. Improving postoperative pain management: What are the unresolved issues? *Anesthesiology.* 2010;112(1):220–5. doi:10.1097/ALN.0b013e3181c6316e.
21. Eyselade OR. Patients' perception and knowledge of anaesthesia and anaesthetists-a questionnaire survey. *Southern Afr J Anaesth Analgesia.* 2010;16(4):28–31.

Author biography

Unnati Asthana, Assistant Professor  <https://orcid.org/0000-0001-8644-7134>

Anshumali, Professor  <https://orcid.org/0000-0002-6805-3809>

Shruti Sharma, Assistant Professor  <https://orcid.org/0000-0003-0229-5853>

Cite this article: Asthana U, Anshumali, Sharma S. An assessment of the patient's understanding and knowledge of the relevance of pre-anesthetic check-up. *Panacea J Med Sci* 2023;13(1):82-87.