

Original Research Article

LEVEL OF AWARENESS AND PERCEPTION ABOUT ANAESTHESIA AND PRE-ANAESTHETIC CHECK-UP AMONG SURGICAL PATIENTS IN SMHS HOSPITAL WHICH IS A TERTIARY CARE HOSPITAL

Dr. Javed Iqbal Naqshbandi¹, Dr. Fidah Mohamed², *Dr. Arshed Hussain Khan³

¹Professor, Department of Anaesthesiology & Critical Care, Govt. Medical College, Srinagar, India.

²Senior Resident, Department of Anaesthesiology & Critical Care, Govt. Medical College, Srinagar, India.

³Senior Resident, Department of Anaesthesiology & Critical Care, Govt. Medical College, Srinagar, India.

***Corresponding author:** Dr. Arshed Hussain Khan

*Senior Resident, Department of Anaesthesiology & Critical Care, Govt. Medical College, Srinagar, India. Mail id: arshedhussain007@gmail.com

Abstract:

Background: The role of anaesthesiology and anaesthesiologists 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 theatre and the role of anaesthesiologists is being increasingly appreciated in pain clinic, labor analgesia, accident and emergency, and in Intensive Care Unit (ICU).

Aim: To assess inpatients presenting for elective surgery to our tertiary care hospital in order to see the levels of awareness about speciality of anaesthesia and preanaesthetic checkup in patients presenting for elective surgery to our Tertiary Care Hospital.

Methods: The current study was conducted in a Government Medical college Srinagar Tertiary Care Hospital, a profile of 500 patients were analysed to assess the knowledge about anaesthesia among the patients scheduled for surgery. Patients scheduled to undergo elective surgery in the age group of 18-90 years, who were willing to participate and given written informed consent.

Results: Eighty one percent of the patients were literate and 19 % illiterate, among literate upto SSC 37.2%, upto HSC 19.4 % , graduate 23 % , Post graduate 1.4% .Although 35% had Previous

Exposure to surgery but overall their awareness about anaesthesia speciality was poor. Majority of the patients (75.20%) were from rural areas as compared to the urban areas (24.80%). Only 22% of cases correctly identify the anaesthetist as the person who will resuscitate the patient if a disaster occurs in the operating room. majority of the respondents (62.60%) said that preanesthesia check up was done by the Doctor in the PAC clinic then followed by patients(26.40%) said that PAC was done by nurse/technician and followed by (11.00%) patients who did not know about the PAC.

Conclusion: According to the available statistics, the specialities of anaesthesiologists have not done enough to educate patients in particular and the general public, about the job of anaesthesiologists. To eliminate the poor understanding of general public about the role of anaesthesiologists, efforts must be taken to educate and raise awareness among the population. Patients continue to be poorly informed about anaesthesia services and the function of anaesthesiologists.

Keywords: Anesthesia, Pre anesthesia check up, Anesthesiologist, Awareness Surgery.

INTRODUCTION

The role of anaesthesiology and anaesthesiologists 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 theatre. The public is unaware of anaesthesiologists' widespread role in short-term care and long term care, pain treatment, and they have very limited awareness of the speciality.[1] Although it is unknown whether it will be of any further advantage to raise public awareness of the specialty, polls have been performed around the world to examine public perception of anaesthesiologists. [2, 3]

Despite clearly playing a very crucial role in the perioperative management of patients and also in other areas such as pain clinic, labor analgesia, and critical care, it is still felt that anaesthesiologist does not get the due he deserves, both in the eyes of the public and also fellow medical professionals. [4, 5, 6]

Although there have been surveys conducted before to assess knowledge of anaesthesia and anaesthesiologists before, these surveys were either conducted on general public or on rural population and on nonspecific groups of hospital patients. [7-9]

Global studies have demonstrated that there is a widespread misperception that anaesthesiologists are not physicians. [10,11] With the advent of simple internet access and the increasing role of media, it is considered that literate patients are more oriented and have a better understanding of anaesthesiology and an anaesthesiologist.

People in India have begun to become more informed when the CPA (consumer protection act) was enacted. Nonetheless, they have little understanding of the structure of medical services and practices, particularly those connected to operating rooms and anaesthesia management.

The aim of this study was to compare the knowledge between literate and illiterate people and attitude toward an anaesthesiologist.

MATERIAL AND METHODS

This questionnaire-based study was conducted at Government Medical College hospital – a tertiary care hospital after taking institutional ethics committee permission and informed consent from participants. Primary data was collected by a questionnaire which was developed to collect the data specifically for the study. The content of the questionnaire was reviewed by the expert doctors and was pretested in the field before the actual data collection for the study.

Design of a self-administered questionnaire for respondents was developed to capture all the required information (qualitative and quantitative) in consultation with doctors. For easy understanding by the respondents, the entire questionnaire and the consent form was presented in simple and lucid language. The questionnaire was preceded by the consent and covered by demographic background which contained series of questions including respondent's age, gender, region, educational status etc. The respondents for the testing were from locations of some different districts of Kashmir Province including Srinagar, Anantnag, Budgam, Baramulla, Kulgam, Ganderbal etc.

In order to assure quality of data the questionnaire was framed in simple and lucid language so that respondent can understand the meaning of each question very easily. Moreover, when they were unable to understand any question, it was explained to them by the investigator in the language they understood the best. Validation strategies were used after completion of questionnaire from respondent, like all the questions were verified by the single investigator, to find out whether he/she answered all the questions with complete understanding. Building trust and rapport at the beginning of each interview session and confidentiality was always preserved as well as assured.

The recorded data from 500 respondents was entered into excel sheet in a structured way and for the sake of clear understanding, the data was segregated so as to get information about different characteristics. The data analysis was done by using the software SPSS version.[12]

Secondary data was collected from various sources and databases of National and International level.

RESULTS

During the current study, data on different parameters was collected for 500 respondents. The data so collected has been put in the following tables, each one of which gives the results as per the criteria selected.

Table 1: Distribution of studied population as per different age groups and educational status

Age Group (Years)	18-30	30-45	45-60	60-75	75-90	Total
Frequency (n)	114	187	111	80	8	500
Percentage	22.80	37.40	22.20	16.00	1.60	100
Educational status	Illiterate	Upto SSC	Upto HSC	Graduate	Post Graduate	
Frequency (n)	95	186	97	115	7	500

Percentage	19.00	37.20	19.40	23.00	1.40	100
-------------------	--------------	--------------	--------------	--------------	-------------	------------

Table 2: Distribution of studied population as per gender and residence

Gender (Sex)	Male	Female	Total
Frequency (n)	233	267	500
Percentage	46.60	53.40	100
Region	Urban	Rural	
Frequency (n)	124	376	500
Percentage	24.80	75.20	100

Table 3: Distribution of studied population as per different Criteria

Previous exposure	Pre-Anaesthesia	Yes	No	
Frequency (n)		175	325	500
Percentage		35.00	65.00	100
Any illness before		Yes	No	
Frequency (n)		293	207	500
Percentage		58.60	41.40	100
PAC only for surgery		Yes	No	
Frequency (n)		288	212	500
Percentage		57.60	42.40	100
Recommendations		Will follow the advice Stat	If the surgeon endorses it	
Frequency (n)		342	158	500
Percentage		68.40	31.60	100

Table 4: Distribution of studied population as per different Criteria

Visit for Pre-Anaesthesia Clinic	To get the date for surgery	To comply with surgeon's instructions	Don't know	Total
Frequency (n)	225	117	158	500
Percentage	45.00	23.40	31.60	100
Examined in Preanesthesia Clinic	Assessment and optimization before surgery	Some test is to be done to assess anaesthesia fitness	Don't know	
Frequency (n)	125	275	100	500
Percentage	25.00	55.00	20.00	100
Preanesthesia Check is done by	Doctor in PAC clinic	Nurse/technician	Don't know	
Frequency (n)	313	132	55	500

Percentage	62.60	26.40	11.00	100
-------------------	--------------	--------------	--------------	------------

Table 5: Distribution of studied population as per different Criteria

Importance of PAC before surgery	Reduces the risk of anaesthesia and surgery	Required to get the date for surgery	Don't know	
Frequency (n)	172	275	53	500
Percentage	34.40	55.00	10.60	100
Role of other specialties in preanesthesia	Yes	No	Don't know	
Frequency (n)	223	103	174	500
Percentage	44.60	20.60	34.80	100
Importance of Investigations	Investigations are important for PAC	Not important	Don't know	
Frequency (n)	358	53	89	500
Percentage	71.60	10.60	17.80	100

DISCUSSION

Regarding perception of patients about anesthesiologists and anaesthesiology, various reports have been published previously and overall, there has been little change in the knowledge among general population regarding the specialty. The reason for this may be the less contact of anesthesiologists with conscious patient than other specialists. The modern medical era requires expertise of anesthesiologists more than any other medical specialty, acquiring role of perioperative physician". [13]

In the current study 81% of the patients were literate and 19 % illiterate, among literate upto 37.2% were SSC, 19.4 % HSC, 23 % graduate and 1.4% were post graduate. Although 35% had previous exposure to surgery but overall, their awareness about anaesthesia specialty was poor.

The Lack of awareness about anaesthesiology and PAC was in part due to lack of education about anaesthesiology as a specialty branch in both literate and illiterate groups and also due to poor interaction between anaesthesiologists and patient. However high literacy rates did contribute to increase level of awareness about the specialty of anaesthesia. The poor level of knowledge about the specialty of anaesthesia was observed in surveys conducted in different countries especially the surveys conducted in rural population.[14-17] This is in sharp contrast with high level of awareness (80%) in UK about anaesthesia in literate population.[18] In many of the previous studies [16,17]

there is clear cut correlation between level of education and level of awareness about anaesthesia and anaesthesiologists, this is further established in our study as there is a statistically significant difference with $P < 0.05$ between patients with higher level of education and those with medium level of education regarding their knowledge about anaesthesia, types, complications, who is anaesthesiologists and the role of anaesthesiologists inside and outside OT.

The present study enrolled a total of 500 individuals. During the present study, majority of the patients (75.20%) were from rural areas as compared to the urban areas (24.80%). Only 22% of cases correctly identified the anaesthesiologist as the person who will resuscitate the patient if a disaster occurs in the operating room. It was discovered that 63% of instances believe the function of the anaesthesiologist in the operating room is to put the patient to sleep.

Anaesthesia is a significant supportive specialty that enables long complex surgeries to be completed successfully, and the general public does not have the same perception of it as they do of other medical and surgical specializations. Better patient understanding of anaesthetic activities and expectations would aid in recognizing anaesthesia as a separate specialty and would encourage future recruits to pursue the field. The patient's lack of acknowledgment and respect for the job of the anaesthesiologists contributes to the anaesthetic practitioner's demoralisation.[19]

This study found that, in line with other studies from developing nations, the patient is not well informed about the specialty, necessitating further interaction between an anaesthesiologist and patients. According to Birva N Khara et. al., in only 22% of instances patients properly identifies the anaesthesiologist as the person who will resuscitate the patients if a disaster occurs in the operating room.[20] The dread of pain during surgery is the most common fear among participants about anaesthesia. Other anxieties were a needle poke, being conscious during surgery, not waking up from anaesthesia, backache, agony following surgery, and death. Keep PJ conducted a study that yielded similar results.[21]

According to a poll conducted by Ahsan-ul-Haq, 40% of patients were terrified of surgery and 60% were afraid of anaesthesia. [22] In a study by Umar Jan et al., 80 percent of respondents knew that an anaesthesiologist is a doctor, compared to 67 percent and 65 percent in two polls conducted in the United Kingdom in 1978 and 1994, respectively. [23,24] This could be attributed to the implementation of pre-aesthetic clinics, routine preoperative and postoperative visits, as well as increased patient awareness. It is encouraging to observe that more than 70% of respondents said the anaesthesiologists had excellent manners and was easy to chat to. Even a prior study indicated that anaesthesiologists dress can influence patient perception. [25]

In this study many responders, however, were not satisfied with the anaesthesiologist's explanation of the anaesthetic method, potential side effects, and problems. Previous research has also discovered that anaesthesiologists fail to communicate the specifics of anaesthesia to patients.[26]

One probable explanation is that many anaesthesiologists did not want to reveal every detail for fear of increasing patient concern, and many patients accept physicians' paternalistic approach. [27,28]

The questions regarding the role of anaesthesiologists had mixed response. Many of the respondents knew that anaesthesiology is a different specialty, however, in present study, significantly limited number of respondents knew about spectrum of services provided by anaesthesiologists, different techniques and possible side effects and complications of anaesthesia. This is in concordance with previous studies.[29] The knowledge of patients about anaesthesiology and anaesthesiologists

correlated well with level of academic qualification. Previous studies have also found that patients with better academic qualification had better knowledge of anaesthesia and anaesthesiologists. [30] Broadly our study revealed limited knowledge of anaesthesia and anaesthesiologists as a specialty among general masses. The matter of debate is that whether public image of anaesthesiologists is really important. Some authors have opinion that anaesthesiologists should not be concerned to widespread public ignorance of specialty. [31] Other authors have argued that increasing appreciation by public will increase the ability to influence the provision of resources for the specialty.[32] The lack of recognition can affect the self-esteem of anaesthesiologists and amount of effort required to achieve expertise.[33] There should be some means to disseminate information regarding the widespread role of anaesthesiologists inside and outside operating rooms, including pain clinics, emergency medicine, ICU.

In the current study, only 75% patients were knowing that anaesthesiologist is a doctor and 25% of the patients were aware about that the anaesthesiologists is a specialist. According the previously survey only 48% of people realized that an anaesthesiologist is a doctor, and only 7% knew an anaesthesiologist is a specialist. This is in agreement with previous studies when most of the patients are not even aware that anaesthesiologists are doctors, and most of the people are not aware that anaesthesiologists are specialists like surgeons or physicians as reported.[34]

In our study most of the patients had very little knowledge about the role of the anaesthesiologists. This is in contrast to 80% of patients knowing about the role of the anaesthesiologists in OT as reported by Swinhoe and Groves [35] from the UK, once again highlighting the role of education and higher literacy rate in the knowledge of patients.

It was extremely disappointing to note that only 2% of the patients were aware about the role played by anaesthesiologists outside the OT. This lack of knowledge has been found in earlier studies and there has been no improvement over the years as reported in surveys.[36, 28, 4,5]

Although fear of feeling pain during surgery was the biggest concern/fear among 38% of the patients, yet only 5% knew it was the anaesthesiologists who will provide pain relief during and after surgery, re-emphasizing their ignorance about the role of anaesthesia and anaesthesiologists. This was in contrast with the Western studies where awareness under anaesthesia and failure to wake up were the biggest anaesthesia concerns among patients as reported.[33, 37]

The current study revealed that the majority of the respondents (62.60%) were aware that preanesthesia checkup was done by a Doctor in the PAC clinic followed by 26.40% patients who believed that PAC is done by nurse/technician and 11.00% patients did not know about the PAC. Informed consent before surgery is a very crucial document, and it was disappointing to know that 57% of the participants were not aware of the need to give informed consent for anaesthesia. This is in contrast to 77% of patients being aware and 23% not aware of the need to give informed consent in a survey conducted by Ketan Shevde,. [38] In our survey, this could reflect both the lack of awareness about the importance of anaesthesia but also highlights the importance of attending PAC clinic where the patients can be educated about anaesthesia, different techniques of anaesthesia, benefits and expected complications/side effects of anaesthesia, and at the same time obtaining informed anaesthesia consent.

Overall, it is disappointing that most of the patients in this study had poor knowledge about anaesthesia, types and techniques of anaesthesia, and role of anaesthesiologists inside and outside OT. Although this is in agreement with most studies conducted in India as reported. [4-6] It still is

disappointing, especially in a tertiary teaching women hospital where anaesthesiologists play a very important role, as seen in the study conducted by Swinhoe CF, [10] in the OT providing a safe, pain-free intraoperative and postoperative experience for all patients undergoing surgeries and also outside the OT where anaesthesiologists provide labor analgesia services for pain-free delivery, educate patients in PAC clinics, and also play a crucial role in critical care of the very sick patients in ICU. This study shows that although anaesthesiologists play a very important role both in and outside the OT, not many patients are aware about anaesthesiology as a specialty and the role of anaesthesiologists. Although this may be partially attributed to the low level of education of our patients, much needs to be done by the fraternity of anaesthesiologists in educating the patients.

During the current study most of the patients (65.00%) had not previously been to pre-anaesthesia clinic and followed by patients (35.00%) who had been to preanesthesia clinic. Also, majority of the patients (45.00%) believed PAC visit is required to get the date for surgery followed by 31.60% patients who don't knew about reason of PAC visit, 23.40% patients visited PAC clinic to comply with the surgeon's instructions. Most of the patients (55.00%) said tests were done to assess anaesthesia fitness followed by patients who believed tests were necessary for assessment and optimization before surgery (25.00%) and followed by (20.00%) patients with don't know response. In our study 55.00% respondents said PAC is required to get the date for surgery followed by 34.40% patients who understood PAC reduces the risk of anaesthesia and surgery. 10.60% patients didn't knew. 62.60% had some previous illness and 41.40% had no previous illness.

This study found agreement with studies from other developing nations that the patient is not well informed about the specialty, demanding further information. [1] In our study, just up to 22% of the instances properly identified the anaesthesiologist as the person who will resuscitate the patients if a disaster occurs in the operating room. Majority of the respondents (57.60%) in our study said PAC is necessary for surgery followed by 42.40% patients who said PAC is not necessary for surgery. And also, majority of the respondents (68.40%) followed the advice Stat and 31.60% patients said they will follow PAC advice only if the surgeon endorses it.

Anaesthesiologists need to spend more time in PAE clinics in explaining to patients the role of anaesthesia, types of anaesthesia, techniques, benefits and potential complications/side effects with each technique, labor analgesia, informed anaesthesia consent, and clearly highlighting their role to the patients both inside and outside OT. The familiar face of anesthetist goes a long way in relieving the anxiety of the patient in an unfamiliar environment of the OT as clearly proven in a study conducted. [29]

Anaesthesiologists need to highlight their role in media, conduct health melas to educate patients about anaesthesia and role of anaesthesiologists, and also educate the surgeons who in turn can help improve the knowledge of this specialty among patients. Better patient understanding of anaesthetic activities and expectations would aid health administrators in recruiting additional anaesthesia-related health facilities for consumers. [39]

REFERENCES:

1. Simni B. Anesthetist: the wrong name for the right doctor. *Lancet* 2000;May 27;355(9218):1892.
2. Pleuvry BJ, Bradshaw EG. The anesthetist in the eyes of the public. *Anaesthesia*1982;37:462-3.
3. Calman LM, MihalacheA,EvronS, Ezri T. Current understanding of the patient's attitude towards the anesthetist roleand practice in Israel: effect of patients experience . *J ClinAnesth*2003;15:451-4.
4. Uma BR, Hanji AS. "Anaesthesia and Anaesthesiologists: How Famous are We among the General Population?" – A Survey. *J Clin Diagn Res* 2013;7:2898-900.
5. Mathur SK, Dube SK, Jain S. Knowledge about anaesthesia and anaesthesiologist amongst general population in India. *Indian J Anaesth*2009;53:179-86.
6. Naithani U, Purohit D, Bajaj P. Public awareness about anaesthesia and anaesthesiologist: A survey. *Indian J Anaesth*2007;51:420-6.
7. Prasad CG, Suresh G. A survey on public awareness about the role of anesthesiologists. *Ain - Shams J Anaesthesiol*2014;7:456-9.
8. Gurunathan U, Jacob R. The public's perception of anaesthesiologists-Indian attitudes. *Indian J Anaesth*2004;48:456-60.
9. Singh P, Kumar A, Trikha A. Rural perspective about anesthesia and anesthesiologist: A cross-sectional study. *J Anaesthesiol Clin Pharmacol*2013;29:228-34.
10. Swinhoe CF, Groves ER. Patients' knowledge of anaesthetic practice and the rôle of anaesthetists. *Anaesthesia*1994;49:165-6.
11. Irwin MG, Fung SK, Tivey S. Patients' knowledge of and attitudes towards anaesthesia and anaesthetists in Hong Kong. *Hong Kong Med J*1998;4:16-22.
12. Ahsan Ul Haq M, Azim W, Mubeen M. A survey of patients' awareness about the peri-operative role of anaesthesiologists. *Biomedica*2004;20:5-9.
13. 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;3:371–3.
14. Pleuvry BJ, Bradshaw EG. The anaesthetist in the eyes of the public. *Anaesthesia*1982;37:462-3.

15. Calman LM, MihalacheA, EvronS, Ezri T. Current understanding of the patient's attitude towards the anaesthetist role and practice in Israel: effect of patients experience . J ClinAnesth2003;15:451-4.
16. Baaj J, Takrouri MS, Hussein BM, Al Ayyaf H. Saudi patients' knowledge and attitude toward anesthesia and anesthesiologists--A prospective cross-sectional interview questionnaire. Middle East journal of anaesthesiology. 2006 Feb 1;18(4):679-91.
17. Garry DP: Defining moments in medicine, Anaesthesia: Medical Journal of Anaes 2001; 174: 17-18.
18. Irwin MG, Fung SK, Tivey S: Patients' knowledge of and attitudes towards anaesthesia and anaesthetists in Hong Kong. Hong Kong Med J; 4(1):16-22, 1998.
19. Bailard C, Lamberto JF, Martinez C, et al. Patient's perspective with regard to anaesthesia services. Can J Anaesth2001;48:526-8.
20. Hume MA, Kennedy B, Asbury AJ. Patient knowledge of Anaesthesia and perioperative care. Anaesthesia 1994; 49:715-8.
21. Keep PJ, Jenkins JR. As others see us. The patient's view of the anaesthetist. Anaesthesia 1978; 33:43-5.
22. Swinhoe CF, GrovesER. Patient's knowledge of anesthetic practice and the role of anesthetic. Anaesthesia 1994; 49:165-6.
23. Hennessy N, Harrison DA, Aitkenhead AR. The effect of the anaesthetist's attire on patient attitudees. Anaesthesia 1993; 48:219-22
24. Ali S, Vivekanandan P, Tierney E. Patients perception of anaesthetist and Anaesthesia. Anaesthesia1994;49:644-5.
25. Jafarey AM, Farooqui A. Informed consent in the Pakistani milieu: the physicians perspective. J Med Ethics 2005;31:93-6.
26. Stiggelbout AM Molewijk AC,Otten W, Timmermans DR, van Bockel JH, Kieviot J. Ideals of patient anatomy in clinical decision making: a study on the development of a scale to assess patients and physician views, J Med Ethics 2004;30:268-74.
27. Bhattarai B, Kande S, Adhikari N. Perception about the role of anesthesia and anesthesiologist among the paramedical staff: perspective from medical college in Nepal. Kathmandu Univ Med J 2012; 38(2):51-54.

28. Calman LM, Mihalache A, Evron S, Ezri T. Current understanding of the patient's attitude toward the anesthetist's role and practice in Israel: effect of the patient's experience. *J CLIN Anesth.* 2003sep; 15 (6):451-4.
29. Hall IA, Earlam C. They are not proper doctors, are they? *Anaesthesia*1995; 50:87.
30. Van Wijk MGF, Smalhout B. A postoperative analysis of the patient's view of Anaesthesia in a Netherlands teaching hospital. *AnesthAnalg* 1991; 73:190-8.
31. Sheved K, Pnagopoulos G. A survey of 800 patient's knowledge, attitudes and concerns regarding Anaesthesia. *AnesthAnalg*1991; 73:190-8.
32. Chew ST, Tan T, Tan SS, Ip-Yam PC. A survey of patient's knowledge of Anaesthesia and perioperative care. *Singapore Med J* 1998;39:399-402.
33. Harms C, Young JR, Amsler F, Zettler C, Scheidegger D, Kindler CH: Improving anaesthetists' communication skills. *Anaesthesia*; 59(2):166-72, 2004.
34. Bajwa SJ, Bajwa SK. Anaesthetic challenges and management during pregnancy: Strategies revisited. *Anesth Essays Res* 2013;7:160-7.
35. Khan FA, Hassan S, Zaidi A: Patients view of the anaesthetist in a developing country *J Pak Med Assoc*; 49(1):4-7, 1999.
36. Buescu CT, Onutu AH, Lucaciu DO, Todor A. Pain level after ACL reconstruction: a comparative study between free quadriceps tendon and hamstring tendons autografts. *Acta orthopaedica et traumatologica turcica.* 2017 Mar 1;51(2):100-3.
37. Leite F, Silva LM, Biancolin SE, Dias A, Castiglia YM. Patient perceptions about anesthesia and anesthesiologists before and after surgical procedures. *Sao Paulo Medical Journal.* 2011;129:224-9.
38. Ketan Shevde, Georgia Panagopoulos. A Survey of 800 Patients' Knowledge, Attitudes, and Concerns Regarding Anesthesia. *Anesth Analg* 1991;73: 1 90-8.
39. Chew STH, Tan S, Ip-Yam PC: A Survey of patient's knowledge of anaesthesia and perioperative care: *Singapore Med J* 1998;39:399-402.