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Original Research Article

A prospective, single centre, observational study to evaluate the perception, knowledge and awareness about anaesthesia and role of anaesthesiologists, preoperatively and postoperatively, among patients undergoing anaesthesia procedure in tertiary care hospital

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ABSTRACT

Background: Anaesthesiologists play a vital role perioperatively. Little is known about this to the patients. Hence, we undertook the study to evaluate the perception, knowledge and awareness about anaesthesia and anaesthesiologists amongst patients coming for surgery.
Methods: This study was an observational, interview questionnaire based; single centre study carried over 18 months from March 2017. 260 participants were asked about their perception and knowledge of anaesthesia and anaesthesiologist. The numeric data was summarized by descriptive statistics.
Results: Study could be completed in 255 patients, out of which, 4.70% were illiterate, 53.72% were high-school graduates and 41.56% were graduates. Out of 243 literates, 39.6% were aware that anaesthesiologists are doctors and only 10.94% had the knowledge about anaesthesia. The fear factor about anaesthesia in illiterate, high school graduates and graduate groups were 27.82%, 26.81% and 26.87% respectively.
Conclusions: Though the literacy level was 95.29% among our surgical patients, still 60.4% of patients were unaware of the role of anaesthesiologist and 89.06% were ignorant about knowledge of anaesthesia. All patients had some fear factor about anaesthesia, with an average of 27.28%, irrespective of gender and education level. The post-surgery questionnaire revealed that 98.82% of patients felt protected and cared for all throughout the perioperative period due to counselling during pre-anaesthesia visit.

Keywords: Anaesthesiologists, Anaesthesia, Fears, Knowledge, Myths

INTRODUCTION

Anaesthesiology is dynamic speciality with continuous evolution. Newer drugs, site specific blocks, airway gadgets, monitoring devices and ultrasound in anaesthesia are few examples. Each anaesthesiologist has become perioperative physician. They are involved in preoperative optimization of patients, intraoperative vitals and fluid monitoring, balancing pharmacopeia and in postoperative pain relief. But our patients are not aware of all this.[1-5] So, to improve the knowledge and perception of patients regarding anaesthesia, to allay their fears and to make them aware about the vital role of anaesthesiologist in perioperative period, the study was undertaken.[6-10] At the end of the day, along with safe perioperative management, the anaesthesiologist is also humbled by patient's satisfaction. We researched for that too! Most of our patients were also ignorant of role of anaesthesiologists outside the confines of operation theatre, as pain specialist, intensivist, managing labour analgesia, cardiac catheterization laboratory, radio-imaging suits and interventional radiology.[11-15] The network media too does

not highlight the significant contribution of the anaesthesia team to the successful outcome of the surgery. There were many national and international studies conducted with similar goals.[16-22] Our study was unique in many ways. Firstly, questionnaire was not handed to participants, the study investigators themselves asked questions to patients in language they understood and then captured responses, hence misinterpretation was avoided.

After the questionnaire, we spend time to address patients' fears, we explained them the role of anaesthesiologist, discussed the years of education and training that each anaesthesiologist has to go through. We emphasized about the fact of continuous intraoperative monitoring with various gadgets done by anaesthesiologists. We told them that in postoperative recovery area also all their complaints are addressed by anaesthesiologist. In this study we included patients undergoing monitored care anaesthesia too. We had a special column to write suggestions in postoperative period, so as a department and institution, we can improve.

METHODS

Our questionnaire had first page about demographic data of patients and further 4 sections which were as follows, section a- fears and concern in the mind of patient about anaesthesia (pages 2,3,4 of questionnaire), section b- knowledge about anaesthesiologist (pages 5,6, 7 of questionnaire), Section C- Asking about Anaesthesia Knowledge (pages 8,9,10 of questionnaire), Section D - Postoperative Anaesthesia Experience (pages 11, 12, 13, 14 of questionnaire).

Prior to study questionnaire administration subject expert and target population validation of the questionnaire was done which was reviewed and approved by Institutional Ethics Committee (IEC).

Sample Size and Justification for calculation.

With 5% type 1 error and 95% confidence interval and the previous estimate from a similar population being 22%, the sample size for the present study has been estimated to be 260. The sample size for this study was calculated using Andrew-Fischer's formula

Present study was an observational interview questionnaire based single centre study. The study was carried out from March 2017–September 2018 in the department of Anaesthesiology at Bhaktivedanta Hospital and Research Institute. The study was approved by ethics committee. Voluntary written informed consent was obtained from the study participants.

The patients of age 18 to 85 years, all genders, who required regional, general and monitored-care anaesthesia for surgery/ procedure (Minor and major surgeries), admitted in hospital as well as outpatient department (OPD) patients were included in the study. Patient with psychiatric conditions, mentally challenged patients, patients with healthcare background (e.g., Doctors, Nurses, Pharmacist etc.), patients with poor medical condition- ASA grade 3 and above, patients coming for emergency surgery, patients requiring anaesthesia standby and patients not consenting for study, were excluded from the current study.

Out of 260 patients screened 255 patients were included in the study while for the remaining 5 patients, either data was incomplete or were lost at follow up, postoperatively. While collecting demographic details, we asked their education status whether illiterate, high school graduate or graduate. The objectives of the study were to assess through questionnaire, perception, awareness and knowledge about anaesthesia procedures (Section C of questionnaire, total score 24) and role of anaesthesiologist (Section B of questionnaire, total score 16), to evaluate the fears of perioperative period among the patient's undergoing anaesthesia and surgery (Section A of questionnaire, total score 92), to educate verbally, the patients about types of anaesthesia, intraoperative monitoring and pivotal role of anaesthesiologist, to allay their fears and to get feed-back, again via questionnaire about the experience of patients regarding anaesthesia procedure, 4 to 24 hours post-anaesthesia (Section D of questionnaire, total score 60) depending on level of consciousness of the patients.

The questionnaire were asked preoperatively in the wards, where patients were admitted. Those patients coming on Out-patient-department basis, (OPD-basis) were asked the questionnaire in the pre-operative waiting room of operation theatre (OT). Approximate time to complete questionnaire was approximately 15-20 minutes. Based on the responses received, patients were given relevant information about role of anaesthesiologist and types of anaesthesia administered, which took another 10-15 minutes. Patient's experiences after operation (post-operation) were recorded after 4-24 hours. Privacy and confidentiality of all patients participating in study was maintained. All study patients were identified by specific subject number allotted to the patients and patient initials. All patient related documents were handled by authorized study team member.

The numeric data was summarized by descriptive statistics like; n, Mean±SD, median, minimum, maximum. Before applying any statistical test, normality test was performed. The categorical data was summarized by frequency count and percentage and significance was analysed using chi-square/ fisher exact test. Descriptive statistics was applied to analyse the various parameters. All statistical data was analysed by IBM SPSS software v.16.0 and was expressed as means±SD.

RESULTS

The total number of participants were 255, 128 male and 127 were female (Figure 1). They were categorised into 3

groups, illiterate, high-school graduates and graduates with participants 12, 137 and 106 respectively (Figure 2).

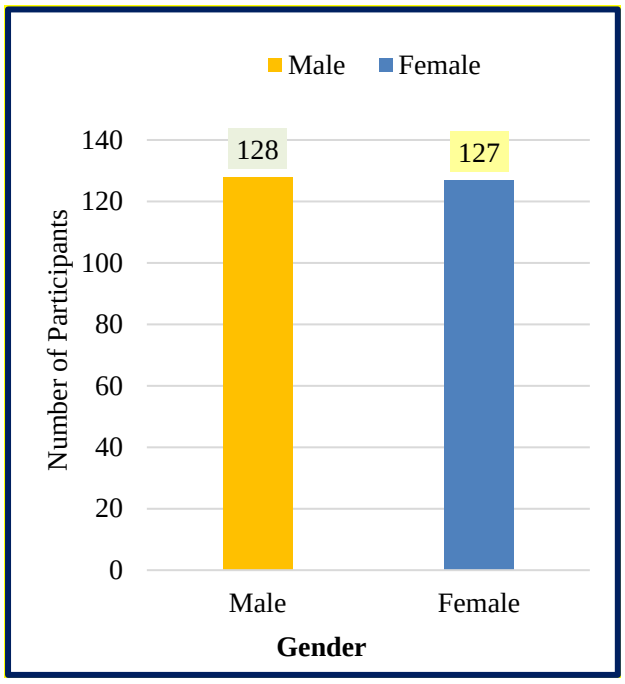

Figure 1: Ratio of males and females.

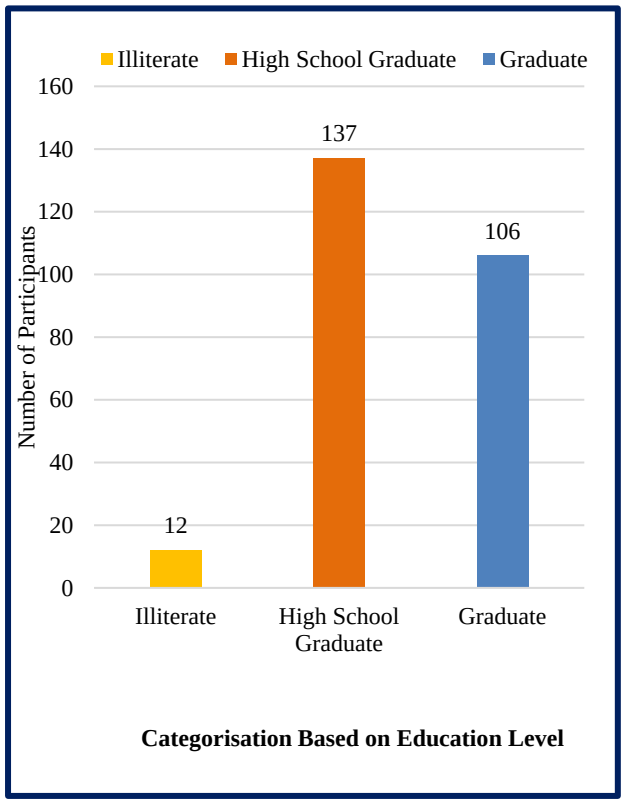

Figure 2: Numbers of participants categorised based on education level.

The participants were from 18-85 years of age. 45 participants (0, 16, 29 in illiterate, high school graduate and graduate group) in 18- 30 years, 160 participants (7, 89, 64 in illiterate, high school graduate and graduate group) in 31-60 years and 50 participants (5, 13, 32 in illiterate, high school graduate and graduate group) in 61-80 years respectively (Figure 3).

Out of 255 participants, 81.17% of them believed that anaesthesiologists are doctors. This indicates increase awareness about anaesthesiologists in patients coming for surgery. We found these results probably because almost all our patients, before getting admitted or before coming on OPD basis to surgery, are referred to Pre-anaesthesia clinic (PAC) (Table 2).

After this positive result, we thought patients would know about role of anaesthesiologist in OT, but only 10.58% knew that anaesthesiologist stay after giving anaesthesia and monitor vitals of the patient (Table 2).

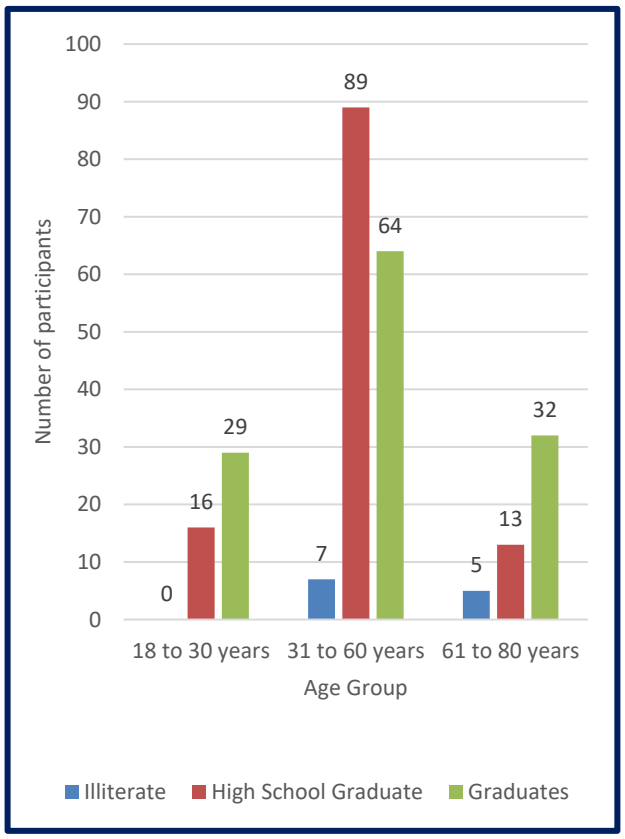

Figure 3: Age wise categorised based on education level.

We thought knowledge about work of anaesthesiologist (Section B of questionnaire), would differ according to literacy level of participants. But score was 4.33, 4.49, 4.51 out of 16 questions asked, for illiterate, high school graduates and graduate groups respectively with p values, $p<0.26$ and $p<0.39$ respectively, proving no significant difference across literacy levels. Hence knowledge about anaesthesiologist doesn't increase with increase in literacy level (Table 1).

Table 1: Patient's fear about anaesthesia and knowledge about anaesthesia and anaesthesiologist.

Comparative criteria	For Total participants (SD values in bracket)			Males			Females		
Education	**Illiterate**	**High school graduates**	**Grad-uates**	**Illiterate**	**High school graduates**	**Grad-uates**	**Illiterate**	**High school graduates**	**Grad-uates**
Demographic details	12	137	106	2	61	65	10	76	41
Fear factor mean	25.88 -13.5	24.94 -18.4	24.99 -14.9	24.87 (12.96)			24.94 (16.96)		
P value of fear factor compared to illiterate	_	p<0.87	p<0.64	p<0.16					
Knowledge about anaesthesiologist mean	4.33 -2.19	4.49 -1.15	4.51 -2.65	4.51 (3.2)			4.49 (5.2)		
P value for knowledge about anaesthesiologist, compared to illiterate	_	p<0.26	p<0.39	p<0.23					
Knowledge about anaesthesia mean	11.1	10.89	11	10.93			10.89		
P value for knowledge about anaesthesia compared to illiterate	_	p<0.67	p<0.82	p<0.49					

Table 2: Concerns of patients about anaesthesia and their feedback.

Few salient questions from questionnaire	Group A	Group B	Group C	Total of numerical data
Selected and compared	**Illiterate**	**High School Graduate**	**Graduate**	
Total participants	12	137	106	255
Anaesthesiologist is a doctor				
Yes	5	100	102	207/255
No	7	37	4	48/255
Role of Anaesthesiologists in OT				
Gives Anaesthesia and simply stays	1 (0.4%)	43 (16.87%)	43 (16.87%)	87/255 (34.11%)
Gives Anaesthesia and stays to monitor heart rate BP, breathing	4 (1.57%)	15 (5.88%)	8 (3.13%)	27/255 (10.58%)
How much was your concern about remaining awake during operation under spinal?				
Slight concern	9 (3.53%)	69 (27.01%)	49 (19.21%)	127/255
How much was your concern about getting chronic back pain after spinal				
Slight concern	4 (1.57%)	49 (19.21%)	42 (16.47%)	95/ 255
Are you bothered about waking up in the middle of surgery under general anaesthesia?				
Somewhat bothered	3 (1.18%)	48 (18.82%)	45 (17.65%)	96/255
Are you tense about pain after surgery?				
Yes	10 (3.92%)	114 (44.7%)	94 (36.87%)	218/ 225
No	2 (0.78%)	23 (9.02%)	12 (4.71%)	37/ 225
Are you worried about nausea or vomiting after surgery?				
Yes	3 (1.17%)	39 (15.3%)	94 (36.87%)	136/ 255
No	9 (3.53%)	98 (38.43%)	12 (4.71%)	119/ 225
Did discussing your fears and concerns before operation, help you?				
Yes	12 (4.71%)	136 (53.33%)	106 (41.57%)	254/255

Continued.

Few salient questions from questionnaire	Group A	Group B	Group C	Total of numerical data
No	0 (0.00%)	1 (0.39%)	0 (0.00%)	1/255
Educating you before the surgery, did it increase your confidence?				
Yes	11(4.31%)	136 (53.33%)	106 (41.57%)	253/255
No	1 (0.39%)	1 (0.39%)	0 (0.00%)	2/255

We contemplated that knowledge about anaesthesia, will depend on education level of patient, if they have read about it in newspaper or other social media or educated patients may have heard from their doctor friends. But score was 11.10, 10.89, 11.0 out of 24 questions asked, for illiterate, high school graduates and graduate groups respectively with p values, $p<0.67$ and $p<0.82$ respectively, suggesting that knowledge about anaesthesia speciality doesn't increase with literacy level (Table 1).

This tells us the need of hour is spreading knowledge about anaesthesia and anaesthesiologists, through social media by making videos, short movies, preparing write-ups in newspaper, taking seminars.

In our study, the difference in, fear factor, knowledge about anaesthesiologists and anaesthesia did not show any gender pre-prondence with p values $p<0.16$, $p<0.23$ and $p<0.49$ respectively, between males and females for above criteria (Table 1).

We realised that the most common fear in our patients was pain after surgery, in 218/ 255 patients and the next common being concern of postoperative nausea vomiting in 136/ 255 patients, followed by fear of remaining awake during surgery if spinal anaesthesia is given, in 127/ 255 patients (Table 2). This tells us, it is very important to discuss these important problems during PAC.

Other important concern of patients, which surprised us was preoperative fear of waking up in middle of surgery under general anaesthesia, felt by 96/ 255 patients. We thought almost all patients would be concerned about getting chronic backache after spinal, as that was the commonest question asked to us just before operation. Yet in our study we found only 95/ 255 patients actually bothered about chronic backache after spinal (Table 2).

We were excited and pleased to know that our study benefited 254/ 255 patients and increased confidence level in 253/ 255 patients (Table 2).

DISCUSSION

In our hospital we realised that, though we had a PAC clinic run daily for 2 hours, anaesthesiologist were busy assessing the patient and optimizing comorbidities by speciality references and investigations. Meanwhile the patient were in hurry to get anaesthesia fitness certificate. The actual concerns and fear about anaesthesia were expressed by patients just few minutes before surgery. Hence the study was undertaken.

A study conducted by Jathar et al, states that only 38% of patients knew anaesthesiologist is a doctor.[1] Mathur et al, found that perception about anaesthesiologist as doctor increased with literacy level, 19.5% in illiterates to 87.88% in post-graduates.[5] In contrast to both the studies, in our study 81.17% patients knew anaesthesiologist is a doctor, with statistically insignificant difference between their education status. We think PAC visit by patient made the difference.

Survey-based studies performed by Naithani et al and Sarkar et al, stated that there exists a correlation between level of education among study participants and knowledge about anaesthesia and anaesthesiologist.[3,14] In contrast, Badru et al, stated that there is unawareness about anaesthesia profession even in educated people, similar to our study.[15] We introspect that ours being a metropolitan city and business capital of India, people are busy working and want to get back to work immediately after surgery. Hence, they try to find out the best options in surgery suitable to their disease and pocket and are least worried about anaesthesia.

Preoperative fear of "postoperative- pain" was one of the biggest concerns among our patient population. 85.49% of patients irrespective of their education status were tense preoperatively about pain post-operatively. Similar findings were seen a survey-based study by Marulasiddappa et al.[13]

In our study, patients were asked postoperatively whether the study was useful. They were extremely happy with the study and 98.2% of patients said that because of questionnaire and subsequent discussion preoperatively with anaesthesiologist, they felt cared-for, all throughout the perioperative period. This gave us immense job satisfaction.

There was apprehension expressed by some of our surgical colleagues that interviewing OPD- basis patients just before surgery will increase their apprehension. But we explained our colleagues that, detailed anaesthesia informed consent form has all these complications of all types of anaesthesia, which we have to anyways explain to OPD-basis patients too, just prior to anaesthesia, before

taking consent. So might as well ask questionarie, so that patient discusses his fear and we give him knowledge about anaesthesia and anaesthesiologist and remove all his fears and myths.

CONCLUSION

Irrespective of gender or literacy level, in our study, we found that there is a general ignorance in patients about knowledge of anaesthesia and anaesthesiologist. All anaesthesiologist should make a conscious effort to have a PAC visit and talk to patient and their relatives about fear of anesthesia and educate them about anaesthesia and role of anaesthesiologists. A postoperative visit to know satisfaction level is also important to enhance image of anaesthesiologists. Anaesthesiologists should spread awareness about their fraternity through social media, so that they get equal recognition in success stories of patients and in case of any mishap, anaesthesia is not always blamed inadvertently

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Ethical approval: The study was approved by the Institutional Ethics Committee

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