# Patient satisfaction with anaesthesia services in a tertiary care cancer centre. (SAY study)

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### Abstract

**Background and Aims:** Patient satisfaction is an important measure of quality of health care. Its assessment leads to a balanced evaluation of the structure, process and outcome of service at an institution. The aim of our study was to assess patient satisfaction with perioperative anaesthesia services provided in our institution and identify factors leading to dissatisfaction which could be preventable or addressed to improve patient care and experience.

**Material and Methods:** A convenient sample size of 200 patients was accrued after written informed consent. A questionnaire to suit local needs of institute was developed, validated and a language appropriate questionnaire was administered by a trained research nurse 24–48 hours post anaesthesia to accrued patients. Data was summarised in percentages and satisfaction scores were compared across demographic variables using Chi square test.

**Results:** A total of 96% (192/200) patients were satisfied with the overall interaction with the anaesthetists in the perioperative period; with 99% (198/200) patients being satisfied with acute pain services provided, postoperatively. As regards to recovery room, 96.5% (193/200) patients were satisfied with the services provided. Satisfaction scores of the pre-anaesthetic clinic (PAC), pain team and anaesthesia services compared across demographic variables – age, gender and education qualifications were found to be statistically non-significant.

**Conclusion:** High rate of patients were satisfied with perioperative anaesthesia care services at our institute. Good and effective preoperative communication with the patient, effective management of postoperative pain and complications significantly contributed towards overall high patient satisfaction.

Keywords: Anaesthesia services, patient satisfaction, perioperative period, quality indicator, questionnaire, validation

# Introduction

Over the last few years, patient satisfaction has gained importance as a meaningful and essential source of information for identifying gaps in healthcare and bringing about changes, to improve quality of care administered in hospitals. Patients' ratings of their satisfaction can reflect on many aspects

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of healthcare; like compassionate bedside skills, efficient attendance to needs, participation in decision-making and adequate communication and information.<sup>[1]</sup> Therefore, patient satisfaction is an essential tool for measuring the quality of health care provided to patients.<sup>[1,2]</sup>

The concept of satisfaction is not easy to define and is influenced by cultural, socio-demographic, cognitive and affective factors. Hence it is a subjective and complex concept.<sup>[3,4]</sup> Many factors contribute to patient's satisfaction including accessibility and

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convenience of service, institutional structure, interpersonal relationships, the competence of health professionals, patients' own expectations and preferences.<sup>[2]</sup>

Anaesthetists are actively involved in providing peri-operative care to patients undergoing surgery. Factors which can affect patient satisfaction with respect to anaesthesia services are; interaction between patient and anaesthetist,<sup>[3]</sup> peri-operative anaesthetic management and postoperative follow up.<sup>[5]</sup> Measuring the degree of patient satisfaction, can be achieved by use of validated questionnaires in the postoperative visit.<sup>[3,6-8]</sup>

There are studies on patient satisfaction with perioperative anaesthesia care and pain management from various parts of the world including Indian subcontinent.<sup>[9-11]</sup> There is no such study conducted in our institute previously and hence we decided to study the patient satisfaction with anaesthesia services in our hospital to identify opportunities for improvement in quality of care. The aim of our study was to assess patient satisfaction with anaesthesia services provided in our institute, identify factors leading to patient dissatisfaction and subsequently to make appropriate changes in the current practice to improve the perioperative patient care and experience.

# **Material and Methods**

The study was undertaken after obtaining approval from the Institutional Review Board. The trial was registered with clinical Trials Registry India (CTRI/2017/08/009330). The time period of study was 3 months from October to December 2017.

This was a post-anaesthesia questionnaire survey-based study conducted in a tertiary care cancer institute. Standardised and validated questionnaires were used in the postoperative period to assess patient's level of satisfaction with anaesthetic services provided. The questionnaire covered various aspects of perioperative anaesthetic care like preoperative anaesthesia clinic visit, interaction with anaesthetist on the day of surgery, postoperative pain treatment and management of known anaesthetic complications like sore throat, postoperative nausea vomiting (PONV).

The English questionnaire was prepared and validated across three domains: face, construct and content validity. The English questionnaire was forward and back translated to Hindi and Marathi. To determine face validity, questionnaires were given to experts (5 consultants from the Department of Anaesthesia not involved in the study). They were asked to rate each question as relevant, somewhat relevant and irrelevant. Construct validity and content validity was done to see whether the questionnaire measures all facets to be assessed, by conducting a pilot testing. Questionnaires in each language English, Hindi and Marathi were pilot tested on 30 patients (10 for each language) after taking patient informed consent. An appointed trained research nurse administered the questionnaire for pilot testing to 30 patients.

The 30 patients filled questionnaires along with the opinion from experts (Anaesthesia Consultants) were then submitted to our statistician for tests for validation. The validation report of the statistician was submitted to IEC for final approval. The duly validated questionnaires were then implemented for conduct of study. A trained research nurse administered the language appropriate, validated questionnaire to patients, 24–48 hours post anaesthesia via face to face interview.A Likert scale was used to grade level of satisfaction.

Adult patients undergoing elective surgery receiving general/regional anaesthesia for thoracic, gastrointestinal, urology and gynaecology surgeries were included in the study. Patients needing postoperative ventilation, requiring >24 hours stay in recovery/intensive care unit, those not included in acute pain service and neurosurgery patients were excluded from the study.

#### **Statistical analysis**

A total of 200 patients were selected and written informed consent was obtained from all patients. The data collected from the questionnaire were collated using SPSS version No. 22. Being a questionnaire survey, no formal statistical tests were done. Responses were summarised as percentages. Satisfaction scores of the pre-anaesthetic clinic visit, pain services, and anaesthesia services were compared across age, gender and education qualifications using Chi-square tests.

# Results

Of the 200 patients included, 56% (112/200) were males, 44% (88/200) were females. Maximum number of patients recruited belonged to age group 41–60 years and the least belonged to the younger age group of 18–24 years. Over 50% (101/200) were graduates [Table 1]. Majority of the patients underwent gastrointestinal surgery (GI) 35% (70/200) [Table 2].

Totally, 178 patients visited the preoperative anaesthetic clinic (PAC) before the surgery out of which 122 (68.5%) patients encountered waiting time between 0 and 30 minutes with only 11 (6.2%) patients needing to wait for more than 2 hours to be seen by an anaesthetist. Fitness for surgery was

Characteristics	Frequency (n)	Percentage (%)
Age (years)		
18-24	19	9.5
25-40	55	27.5
41-60	91	45.5
61 or older	35	17.5
Sex		
Male	112	56
Female	88	44
Education		
No school	8	4
Only school	90	45
Graduate	101	50.5
Post-graduate	1	0.5
Residence		
Outside India	1	0.5
Outside Maharashtra	134	67
Maharashtra	29	14.5
Mumbai	36	18
Category		
General	149	74.5
Private	51	25.5

Table 2: Type of Sur	gery	
Type of Surgery	Frequency (n)	Percentage (%)
Gynaecology	42	21
Gastrointestinal	70	35
Urology	27	13.5
Thoracic	26	13
Bone and soft tissue	35	17.5
Total	200	100

given to 153 (86.5%) patients during their first visit and to 18 (11.2%) patients on second visit with only 3 patients needing to visit PAC more than twice. About 57.9% (103/178) found the location of PAC easily, whereas 74 (41.6%) patients encountered difficulty in locating the PAC in the hospital.

After attending the PAC, 93.8% patients felt they were given an opportunity to ask questions related to their anaesthetic, 92.1% patients felt that their queries concerning forthcoming anaesthetic were answered versus 5.6% patients whose queries remained unanswered. About 92.7% (165/178) patients understood the information given by anaesthetist in the PAC while 5.1% patients did not. 196 out of 200 (98%) patients were visited by anaesthetist a day prior to surgery. The anaesthetist did not introduce himself/herself to 94% of patients during the visit. Anaesthetic complications related to surgery were explained to 196 out of 200 patients by anaesthetist in this visit [Table 3].

Of a total of 200 participants, 15.5% (31/200) experienced PONV and 9.5% (19/200) had sore throat. A total

of 29 of these 31 PONV patients were given medication to treat PONV. Overall, 188 patients in the study were satisfied with the management of PONV. A total of 96% (192/200) were satisfied with the overall interaction with the anaesthetists in the perioperative period; with 99% patients being satisfied with acute pain services provided postoperatively. As regards recovery room, 96.5% (193/200) patients were satisfied with the services provided.

Satisfaction scores of the pre-anaesthetic clinic, pain team and anaesthesia services were compared across demographic variables – age, gender and education qualifications using Chi-square tests and none was found to be statistically significant [Table 4].

### Discussion

Patient-reported outcomes form an important tool for assessment of health care quality, gaining widespread attention since its description by Donabedian.<sup>[12]</sup> He proposed using the triad of structure, process and outcome to evaluate the quality of healthcare calling for a broader approach to quality measurement that extended beyond the technical management of illness.

Patient satisfaction forms an important measure of the quality of care that can contribute to a balanced evaluation of the structure, process and outcome of service. There are a few studies in anaesthesia that have assessed patient satisfaction in surgical patients.

Chanthong P *et al.*, conducted a systematic review of questionnaires used for measuring patient satisfaction after ambulatory anaesthesia and evaluated the psychometric properties of the questionnaires. They concluded that a psychometrically constructed questionnaire validated for a specific type of anaesthetic must be used to gauge patient satisfaction in order to evaluate the quality of anaesthetic care.<sup>[13]</sup> A systematic review of patient satisfaction measures by Sarah F Barnett *et al.*, reinforced the importance of validating questionnaires.<sup>[14]</sup>

We developed our own questionnaire suitable for our needs and validated it for good conduct of the study. The overall proportion of patients who were satisfied with our anaesthesia services was a high 97.5%, while remaining 2.5% were neither satisfied nor dissatisfied. This result is consistent with the results of previous studies and hospital surveys by Adel Ali Alshehri<sup>[11]</sup> and P.S. Myles<sup>[2]</sup> where dissatisfaction was below 15%.

Gebremedhn et al. conducted a study to evaluate the impact of pre-anaesthesia evaluation on patient satisfaction. They

Variable Did someone help you complete this survey other than the research nurse? Did you visit the anaesthesia OPD/an anaesthetist before the surgery to obtain anaesthesia fitness for surgery? Did you find the anaesthetic OPD easily? What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia? If yes did you ask any questions?	Level         Yes         No         Not Sure         Yes         No         Not Sure         Yes         No         Not Sure         0-30 mins         31 min-60 min         1-2 h         >2 h         Not Sure         1         2         >2         Not Sure         Yes	$\begin{array}{c} \mbox{Total (n=200)} \\ 116 (58.9) \\ 81 (41.1) \\ 0 (0.0) \\ 178 (89.0) \\ 20 (10.0) \\ 2 (1.0) \\ 103 (57.9) \\ 74 (41.6) \\ 1 (0.6) \\ 122 (68.5) \\ 41 (23.0) \\ 2 (1.1) \\ 11 (6.2) \\ 2 (1.1) \\ 154 (86.5) \\ 20 (11.2) \\ \end{array}$
than the research nurse? Did you visit the anaesthesia OPD/an anaesthetist before the surgery to obtain anaesthesia fitness for surgery? Did you find the anaesthetic OPD easily? What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	No Not Sure Yes No Not Sure Yes No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	$\begin{array}{c} 81 \ (41.1) \\ 0 \ (0.0) \\ 178 \ (89.0) \\ 20 \ (10.0) \\ 2 \ (1.0) \\ 103 \ (57.9) \\ 74 \ (41.6) \\ 1 \ (0.6) \\ 122 \ (68.5) \\ 41 \ (23.0) \\ 2 \ (1.1) \\ 11 \ (6.2) \\ 2 \ (1.1) \\ 154 \ (86.5) \\ 20 \ (11.2) \end{array}$
before the surgery to obtain anaesthesia fitness for surgery? Did you find the anaesthetic OPD easily? What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	Yes No Not Sure Yes No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	$\begin{array}{c} 0 \ (0.0) \\ 178 \ (89.0) \\ 20 \ (10.0) \\ 2 \ (1.0) \\ 103 \ (57.9) \\ 74 \ (41.6) \\ 1 \ (0.6) \\ 122 \ (68.5) \\ 41 \ (23.0) \\ 2 \ (1.1) \\ 111 \ (6.2) \\ 2 \ (1.1) \\ 154 \ (86.5) \\ 20 \ (11.2) \end{array}$
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before the surgery to obtain anaesthesia fitness for surgery? Did you find the anaesthetic OPD easily? What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	No Not Sure Yes No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	$\begin{array}{c} 20 \ (10.0) \\ 2 \ (1.0) \\ 103 \ (57.9) \\ 74 \ (41.6) \\ 1 \ (0.6) \\ 122 \ (68.5) \\ 41 \ (23.0) \\ 2 \ (1.1) \\ 11 \ (6.2) \\ 2 \ (1.1) \\ 154 \ (86.5) \\ 20 \ (11.2) \end{array}$
Did you find the anaesthetic OPD easily? What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	Not Sure Yes No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	$\begin{array}{c} 2 \ (1.0) \\ 103 \ (57.9) \\ 74 \ (41.6) \\ 1 \ (0.6) \\ 122 \ (68.5) \\ 41 \ (23.0) \\ 2 \ (1.1) \\ 11 \ (6.2) \\ 2 \ (1.1) \\ 154 \ (86.5) \\ 20 \ (11.2) \end{array}$
What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	Yes No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	103 (57.9) 74 (41.6) 1 (0.6) 122 (68.5) 41 (23.0) 2 (1.1) 11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
What was the waiting time before the doctor saw you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	No Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	74 (41.6) 1 (0.6) 122 (68.5) 41 (23.0) 2 (1.1) 11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	Not Sure 0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	$1 (0.6) \\122 (68.5) \\41 (23.0) \\2 (1.1) \\11 (6.2) \\2 (1.1) \\154 (86.5) \\20 (11.2)$
you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	0-30 mins 31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	122 (68.5) 41 (23.0) 2 (1.1) 11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
you in the anaesthesia OPD? How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	31 min-60 min 1-2 h >2 h Not Sure 1 2 >2 Not Sure	41 (23.0) 2 (1.1) 11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
How many times did you visit the anaesthesia OPD before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	1-2 h >2 h Not Sure 1 2 >2 Not Sure	2 (1.1) 11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	>2 h Not Sure 1 2 >2 Not Sure	11 (6.2) 2 (1.1) 154 (86.5) 20 (11.2)
before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	Not Sure 1 2 >2 Not Sure	2 (1.1) 154 (86.5) 20 (11.2)
before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	1 2 >2 Not Sure	154 (86.5) 20 (11.2)
before getting fitness for surgery? During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	2 >2 Not Sure	20 (11.2)
During the visit to the anaesthesia OPD before the surgery, were you given the opportunity to ask question's regarding anaesthesia?	>2 Not Sure	
surgery, were you given the opportunity to ask question's regarding anaesthesia?	Not Sure	
surgery, were you given the opportunity to ask question's regarding anaesthesia?		3 (1.7)
surgery, were you given the opportunity to ask question's regarding anaesthesia?	Yes	1 (0.6)
question's regarding anaesthesia?		167 (93.8)
	No	8 (4.5)
If yes did you ask any questions?	Not Sure	3 (1.7)
i yes ara you ask arry questions:	Yes	24 (13.5)
	No	151 (84.8)
	Not Sure	3 (1.7)
After attending the anaesthesia OPD, were your	Yes	164 (92.1)
queries concerning your forthcoming anaesthesia	No	10 (5.6)
answered?	Not Sure	4 (2.2)
Was the information given to you by the	Yes	165 (92.7)
anaesthesia doctor understandable?	No	9 (5.1)
	Not Sure	4 (2.2)
How much time did you spend in the anaesthesia	<5 mins	34 (19.1)
OPD with the anaesthetic doctor?	5-15 mins	141 (79.2)
	16-30 mins	2 (1.1)
	>30 mins	1 (0.6)
Were you explained about the choices regarding	Yes	164 (92.1)
pain relief in the OPD?	No	12 (6.7)
	Not Sure	2 (1.1)
On a scale of 1-10 rate your experience regarding	5-6 Neither satisfied nor dissatisfied	7 (3.9)
your visit to the anaesthesia OPD	7-8 Satisfied	159 (89.3)
	9-10 Very Satisfied	12 (6.7)
Did the anaesthesia doctor visit you the day before	Yes	196 (98.0)
your surgery?	No	3 (1.5)
	Not Sure	1 (0.5)
Did any doctor introduce himself/herself to you as		
an anaesthetic doctor?	Yes No	11 (5.5) 188 (94.0)
		188 (94.0)
Did the appropriate destroy and in to your hear	Not Sure	1 (0.5)
Did the anaesthesia doctor explain to you how you would feel after surgery and anaesthesia was	Yes	191 (95.5)
over (what to expect at the end of the surgery)?	No	9 (4.5)
	Not Sure	0 (0.0)
Did the anaesthesia doctor explain to you about the	Yes	196 (98.0)
expected complications?	No Not Sure	4 (2.0)

#### Contd...

#### Ambulkar, et al.: Satisfaction with anaesthesia services

Table 3: Contd		
Variable	Level	Total (n=200)
Did you have nausea and vomiting after surgery in	Yes	31 (15.5)
the last 24 h?	No	169 (84.5)
	Not Sure	0 (0.0)
If yes: then whether any medications were given?	Yes	29 (93.5)
	No	2 (6.5)
How satisfied were you with treatment of nausea	1-2 Very dissatisfied	0 (0.0)
and vomiting after the operation?	3-4 Dissatisfied	0 (0.0)
	5-6 Neither satisfied nor dissatisfied	12 (6.0)
	7-8 Satisfied	166 (83.0)
	9-10 Very Satisfied	22 (11.0)
Did you have pain during swallowing of food or	Yes	19 (9.5)
hoarseness of voice after operation? (Sore throat)	No	174 (87.0)
	Not Sure	7 (3.5)
Did pain service doctor visit you in the	Yes	195 (97.5)
post-operative period?	No	1 (0.5)
	Not Sure	4 (2)
Were you satisfied with the overall interaction with	1-2 Very dissatisfied	0 (0.0)
your anaesthesia doctors during the whole of the	3-4 Dissatisfied	0 (0.0)
perioperative period?	5-6 Neither satisfied nor dissatisfied	8 (4.0)
	7-8 Satisfied	169 (84.5)
	9-10 Very Satisfied	23 (11.5)
How satisfied were you with your recovery room	1-2 Very dissatisfied	0 (0.0)
experience?	3-4 Dissatisfied	0 (0.0)
	5-6 Neither satisfied nor dissatisfied	7 (3.5)
	7-8 Satisfied	159 (79.5)
	9-10 Very Satisfied	34 (17.0)
How would you rate the anaesthesia services on a	5-6 Neither satisfied nor dissatisfied	6 (3.0)
scale of 1 to 10?	7-8 Satisfied	181 (90.5)
	9-10 Very Satisfied	13 (6.5)
How would you rate the pain services on a scale of	5-6 Neither satisfied nor dissatisfied	2 (1.0)
1 to 10?	7-8 Satisfied	184 (92.0)
	9-10 Very Satisfied	14 (7.0)

found that patient satisfaction was higher in those who had their questions answered adequately by anaesthetists than in those who did not (68.2% versus 58.3%). It was also higher in patients who received preoperative information about PONV and other postoperative complications than in those who did not.<sup>[15]</sup>

On similar grounds; Hepner *et al.* did a study to assess the effect of preoperative anaesthesia clinics on patient satisfaction. They concluded that both information and communication, remained the most important component of patient satisfaction in a pre-anaesthesia clinic.<sup>[16]</sup>

Out of 200 patients in our study, 89% (178/200) visited the PAC before the surgery. 93.8% participants were given an opportunity to ask questions related to anaesthesia in PAC and 92.1% patients, queries concerning their forthcoming anaesthesia were answered. A total of 164 participants were explained about the choices regarding pain relief

and 92.7% patients understood the information given by anaesthetist in PAC suggesting a good communication. Good communication skills with patients is one of the key factors for high patient satisfaction which reflects in our overall satisfaction of 97.5%.

When we compared the satisfaction scores of the pre-anaesthetic clinic, pain team and anaesthesia services across demographic variables; we found that the scores were higher in males, graduates and the age group of more than 40 years. Although this is consistent with a study by P.S. Myles,<sup>[2]</sup> it was not found to be statistically significant.

Gebremedhn *et al.* concluded that self-introduction of anaesthetist during the preoperative visit was not directly related to patient satisfaction.<sup>[15]</sup> Similarly, in our study, it is unlikely that lack of introduction by anaesthetist had any impact on overall satisfaction and an additional factor contributing to this could be the socio-cultural differences of our country.

Our study also identified areas which can be improved at our institution in terms of accessibility and waiting period at PAC. We understand that being a tertiary care cancer hospital with an infrastructure spanned over a large area, it was difficult to locate the PAC easily. Also, preoperative delays in surgery owing to multiple visits to PAC prior to final anaesthetic fitness can potentially delay the further treatment of cancer. Therefore, factors like accessibility of PAC and time required for fitness for surgery can have a negative impact on patient satisfaction. But this can be addressed by better planning during the first PAC visit, counselling of patients and having screens displaying the location of PAC, better signage and wayfinding systems at the hospital.

We used a validated questionnaire to assess satisfaction and it was administered by a trained nurse which is a main advantage of this study.

Our study also had a few limitations. This study had a small sample size due to time constraint. Patients not included in acute pain services and those needing >24 hours stay in the intensive care unit/recovery area were excluded from the study. Hence, the results of the study may not apply to all the adult patients who undergo surgeries at our institution. Patient expressions can be biased to please hospital staff and to avoid repercussions for negative care appraisal. Therefore, lower percentage of dissatisfaction could be an under-representation of the true picture. We do reckon that identifying key areas of improvement in these small numbers of patients, can help improve quality of anaesthesia care for the majority of patients.

Patient satisfaction is an important quality indicator of today's healthcare. Good and effective preoperative communication with the patient, effective management of postoperative pain and complications significantly contributed towards high overall patient satisfaction at our institution. We did identify areas which can be improved in terms of accessibility and waiting period at preoperative anaesthetic OPD which can be easily addressed and re-evaluated. Providing appropriate signage will help improve accessibility to PAC clinic. Improving patient counselling regarding importance of ensuring clinical safety for conduct of anaesthesia and surgery will help allay anxiety and develop faith in case fitness for anaesthesia is not granted in first PAC visit. In conclusion, we found a high rate of patient satisfaction with perioperative anaesthesia care services at our institute.

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#### **Conflicts of interest**

There are no conflicts of interest.

Variable Level	Level	Pre-an	<b>Pre-anaesthetic clinic</b>	slinic		Anaes	Anaesthesia services	ices		Pa	<b>Pain services</b>		
		Neither satisfied Satisfied Very nor dissatisfied $(n=159)$ Satisfied (n=7) $(n=12)$	Satisfied (n=159)	Very Satisfied (n=12)	ď	Neither satisfied Satisfied Very nor dissatisfied $(n=181)$ Satisfied (n=6) $(n=13)$	Satisfied (n=181)	Very Satisfied (n=13)	ď	Neither satisfied Satisfied Very nor dissatisfied $(n=184)$ Satisfied (n=2) $(n=14)$	Satisfied (n=184)	Very Satisfied (n=14)	4
Age	18-40	2 (28.6)	62 (39.0)	62 (39.0) 3 (25.0) 0.753	0.753	2 (33.3)	69 (38.1)	69 (38.1) 4 (30.8) 0.850	0.850	1 (50.0)	70 (38.0) 4 (28.6) 0.7	4 (28.6)	0.7
	≥41	5 (71.4)	97 (61.0) 9 (75.0)	9 (75.0)		4 (66.7)	112 (61.9) 9 (69.2)	9 (69.2)		1 (50.0)	114 (62.0) 10 (71.4)	10 (71.4)	
Gender	Male	4 (57.1)	91 (57.2)	7 (58.3) 0.772	0.772	4 (66.7)	100 (55.2)	8 (61.5) 0.786	0.786	1 (50.0)	102 (55.4)	02 (55.4) 9 (64.3) 0.80	0.8
	Female	3 (42.9)	68 (42.8)	5 (41.7)		2 (33.3)	81 (44.8)	5 (38.5)		1 (50.0)	82 (44.6)	5 (35.7)	
Education	Education No school	0 (0.0)	6 (3.8)	1(8.3)	0.264	1 (16.7)	6 (3.3)	1 (7.7)	0.084	0 (0.0)	7 (3.8)	1 (7.1)	0.13
	Only school	2 (28.6)	68 (42.8)	9 (75.0)		1 (16.7)	80 (44.2)	9 (69.2)		0 (0.0)	80 (43.5)	10 (71.4)	
	Graduate/Post-graduate	5 (71.4)	85 (53.5)	2 (16.7)		4 (66.7)	95 (52.5)	3 (23.1)		2(100.0)	97 (52.7)	(21.4)	

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