

Patient satisfaction, outcomes and experience measures in patients receiving general anaesthesia: A prospective questionnaire based observational study

INTRODUCTION

Patient satisfaction encompasses a multidimensional approach to determining how well the patient's expectations about the service provided by medical care have been met and is an indicator to assess the safety and quality of medical care.^[1,2]

Anaesthesia-specific measures include the three aforementioned domains of quality: effectiveness, which assesses procedure-related discomfort; patient-centredness, which assesses patient satisfaction regarding the care delivered; and safety, which estimates the incidence of events that can lead to long-term harm, such as accidental awareness during general anaesthesia^[3]

METHODS

This prospective questionnaire based observational study was conducted over a period of six months at the Department of Anaesthesiology in a tertiary care teaching hospital in Southern India with the approval of the Institutional Human Ethics Committee. Patients over the age of 18 years receiving general anaesthesia and of either gender were included; obstetric, and terminally ill cases were excluded from the study. All necessary and relevant data were collected from the patient case notes, patient records, anaesthesia records, patient and healthcare professional interviews. All the eligible 297 patients were followed up post-surgery at the 0th, 24th, and 48th hour of interviewing and completion of the Bauer and modified Brice questionnaire^[4] that was used to evaluate patient satisfaction. This questionnaire was further divided into two parts: The first part consisted of questions on anaesthesia-related discomfort, and the second part examined patient dissatisfaction. This study was conducted with the primary objective of assessing patient satisfaction, experience, and outcome measures after receiving general anaesthesia.

All the study data are represented as numbers with percentage (%).

RESULTS

A total of 297 eligible patients were enrolled in the study, out of which 246 patients (168 men (68.30%) and 78 women (31.70%)) completed both the questionnaires and the response rate of the study was found to be 82.82% [Table 1]. The most frequent discomfort reported was pain at the site of surgery (37.26% (31.57% moderate and 5.69%

Table 1: Characteristics of the study population

Characteristics	No. of Patients (%) (n=246)
Gender	
Male	168 (68.30)
Female	78 (31.70)
Age [35.15±23.15 years] (Mean±SD)	
18-30	60 (24.39)
31-40	46 (18.69)
41-50	54 (21.95)
51-60	41 (16.66)
61-70	39 (15.85)
71-80	5 (2.03)
81-90	1 (0.40)
Body Mass Index [BMI (kg/m ²)]	
Below 18.5	26 (10.57)
18.5-24.9	142 (57.72)
25-29.3	65 (26.43)
30 and above	13 (5.28)
Medical/Surgical Specialities	
General Surgery	102 (41.47)
Ear Nose Throat (ENT)	40 (16.26)
Neurology	28 (11.39)
Gastroenterology	23 (9.35)
Urology	23 (9.35)
Orthopaedics	12 (4.88)
Plastic Surgery	10 (4.06)
Dental	4 (1.62)
Obstetrics and Gynaecology	3 (1.21)
General Medicine	1 (0.41)
Type of Surgery	
Major	107 (43.50)
Minor	72 (29.26)
Moderate	67 (27.24)
Mode of Surgery	
Elective	218 (88.62)
Emergency	28 (11.38)
ASA Physical Status	
I	75 (30.49)
II	128 (52.03)
III	34 (13.83)
IV	8 (3.25)
V	1 (0.40)

ASA: American Society of Anesthesiologists; No,n: Number; SD: Standard deviation

severe)), followed by 23.30% patients complaining of thirst (21.95% moderate and 1.35% severe). Pain at the site of anaesthetic injection was reported by 20.86% patients. The responses to the anaesthesia-related discomfort questionnaire varied [Table 2]. Majority of the study population were “very satisfied” with the overall care provided. The responses to the patient-satisfaction questionnaire were also varied [Table 3].

In response to the question, “Did you dream during the procedure?” and “Were your dreams disturbing to you?” (48th hour), 232 patients (94%) did not have dreams and only 14 of the patients (6%) reported

having experienced dreams; 13 (5%) of these reported that the dreams were disturbing.

In response to the question, “What is the last thing you remember before going to sleep?” (48th hour) 161 patients (65.44%) responded to having “seen the operation room” as their last memory before going to sleep, followed by 28 (11.38%) “hearing voices”, and 21 (8.53%) reporting “nothing significant” that they could recall. In response to the question, “What is the first thing you remember after waking up?” (48th hour), 102 patients (41.46%) responded to “being in the recovery room” as their first thing to remember after waking up, followed by 91 (36.99%) “hearing

Table 2: Responses to the anaesthesia-related discomfort questionnaire

Anaesthesia-related discomfort	0 th Hour (%)	24 th Hour (%)	48 th Hour (%)	Mean±SD
Drowsiness				
None	87.40	90.65	94.31	223.33±8.50
Yes, Moderate	12.60	9.35	5.69	22.66±8.50
Yes, Severe	0.00	0.00	0.00	0
Pain at Site of Surgery				
None	58.94	58.54	70.73	154.33±17.04
Yes, Moderate	35.77	34.55	24.39	77.66±15.37
Yes, Severe	5.28	6.91	4.88	14±2.65
Thirst				
None	69.11	74.80	86.18	188.66±21.39
Yes, Moderate	28.86	23.98	13.01	54±19.97
Yes, Severe	2.03	1.22	0.81	3.33±1.53
Hoarseness				
None	88.62	91.87	94.72	225.66±7.51
Yes, Moderate	10.98	8.13	5.28	20±7.00
Yes, Severe	0.41	0.00	0.00	0.33±0.58
Sore throat				
None	86.59	89.84	94.31	222±9.54
Yes, Moderate	12.60	9.35	4.88	22±9.54
Yes, Severe	0.81	0.81	0.81	2
Nausea or Vomiting				
None	98.78	97.15	97.97	241±2.00
Yes, Moderate	1.22	2.85	2.03	5±2.00
Yes, Severe	0.00	0.00	0.00	0
Feeling Cold				
None	89.84	95.53	97.56	232±9.85
Yes, Moderate	9.76	4.07	1.63	12.66±10.26
Yes, Severe	0.41	0.41	0.81	1.33±0.58
Confusion or Disorientation				
None	99.19	99.59	99.59	244.66±0.58
Yes, Moderate	0.81	0.41	0.41	1.33±0.58
Yes, Severe	0.00	0.00	0.00	0
Pain at the Site of Anaesthetic Injection				
None	78.05	76.42	82.93	194.66±8.33
Yes, Moderate	20.33	21.14	14.63	46±8.72
Yes, Severe	1.63	2.44	2.44	5.33±1.15
Shivering				
None	95.53	96.75	97.97	238±3.00
Yes, Moderate	4.07	2.85	1.22	6.66±3.51
Yes, Severe	0.41	0.41	0.81	1.33±0.58

SD: Standard deviation

Table 3: Responses to the patient satisfaction questionnaire

Domain	0 th Hour (%)	24 th Hour (%)	48 th Hour (%)	Mean±SD
Perioperative Information				
Very Satisfied	91.06	91.06	90.65	223.6±0.58
Satisfied	7.32	7.32	7.72	18.33±0.58
Dissatisfied	1.63	1.63	1.63	4±0.00
Very Dissatisfied	0.00	0.00	0.00	0
Not Applicable	0.00	0.00	0.00	0
Waking Up				
Very Satisfied	86.18	86.59	87.80	213.66±2.08
Satisfied	10.57	10.16	11.38	26.33±1.53
Dissatisfied	3.25	3.25	0.81	6±3.46
Very Dissatisfied	0.00	0.00	0.00	0
Not Applicable	0.00	0.00	0.00	0
Pain Therapy				
Very Satisfied	86.18	86.59	86.59	212.66±0.58
Satisfied	9.35	8.54	9.76	22.66±1.53
Dissatisfied	4.07	4.47	3.25	9.66±1.53
Very Dissatisfied	0.41	0.41	0.41	1±0.00
Not Applicable	0.00	0.00	0.00	0
PONV Therapy				
Very Satisfied	0.81	0.81	0.81	2±0.00
Satisfied	1.63	0.81	1.63	3.33±1.15
Dissatisfied	0.41	1.22	0.41	1.66±1.15
Very Dissatisfied	0.00	0.00	0.00	0
Not Applicable	97.15	97.15	97.15	239±0.00
Overall Care				
Very Satisfied	90.24	91.06	91.06	223.33±1.15
Satisfied	9.76	8.94	8.94	22.66±1.15
Dissatisfied	0.00	0.00	0.00	0
Very Dissatisfied	0.00	0.00	0.00	0
Not Applicable	0.00	0.00	0.00	0

PONV: Postoperative nausea and vomiting; SD: Standard deviation

voices”, 23 (9.34%) “seeing the operation room”, and 25 (10.16%) responding “nothing significant” that they could recall. In response to the question “Would you recommend this anaesthesia service to friends and family?” (48th hour), 245 patients (99.59%) gave a positive response.

DISCUSSION

Patient satisfaction is the balance between prior expectations and later perceptions of the healthcare service received by the patients.^[5] An ideal measure of patient satisfaction could therefore provide unique feedback on the quality of practice for medical specialities such as anaesthesia.^[6]

The current study results revealed that pain at the site of surgery (37.26%) was the most commonly reported discomfort followed by thirst (23.30%), and pain at the site of anaesthetic injection (20.86%). These results were in concordance with the results of the study conducted by Baur M *et al.* that showed drowsiness (80%), pain

at the site of surgery (56.5%), and thirst (more than 50%) to be the most commonly reported discomforts in the patients.^[6] Nevertheless, Teukens *et al.* reported 27.3% pain during injection of propofol, followed by 29.8% sore throat as the most common discomfort.^[7] Propofol is the general anaesthetic agent used among the study population of all these studies. Pain at the site of injection is the common adverse effect reported with it; nonetheless, propofol is an alkylphenol, which is expected to cause pain, since all phenols irritate the skin and mucous membrane.^[8]

9.21% and 9.75% of the population in the current study reported drowsiness and sore throat respectively. Similar findings were reported by Walker EM *et al.*,^[3] with 64.2% drowsiness and 29.92% sore throat reported amongst their study population.

In the current study, 2.03% of the patients reported nausea and vomiting as a discomfort following surgery which was less when compared with the results reported in the study conducted by P S Myles

et al.,^[9] where the incidence of postoperative nausea and vomiting (PONV) was found to be 9.7%. Lapere C *et al.*^[11] reported nausea and vomiting among 10.02% and 2.7% of the patients respectively. The reason for this could be the difference in the anaesthetic agent used. Propofol is the anaesthetic agent used in the current study which has high antiemetic properties along with being an effective anaesthetic agent.

The current study population experienced pain (27, 10.97%), anxiety (6, 2.43%), and anxiety and pain (3, 1.21%) as the worst thing about their operation. Walker EM *et al.*^[3] study findings showed a higher incidence of patients experiencing pain (16.7%) and anxiety (33.3%), However, reports by Mavridou P *et al.* showed higher incidence of anxiety (81%).^[10] In the current study, the reason for higher number of patients reporting anxiety may have been the fear of death, postoperative pain, needles and drains, nausea, etc. There are many common adverse events reported with general anaesthesia such as transient confusion or memory loss, dizziness, urinary retention, nausea, vomiting, chills, sore throat. Elderly patients and lengthy surgical procedures can be associated with a higher risk of developing complications such as persistent confusion, memory loss, pneumonia, thromboembolism, and cerebrovascular accidents.

In a study conducted to assess satisfaction amongst the patients receiving regional or general anaesthesia, it was found that the patients who received regional anaesthesia reported more satisfaction when compared to the patients who received general anaesthesia. Also, the patients who received regional anaesthesia reported lesser postoperative nausea and vomiting, greater analgesia, and shorter hospital stay, when compared to the patients who received general anaesthesia.^[11] Nonetheless, the current study included only general anaesthesia patients. Similar studies on patient satisfaction with different types of anaesthesia techniques including peripheral nerve blocks and total intravenous anaesthesia need to be conducted. This will help to provide inputs and ideas to improve the perioperative quality of care which is an important part of patient management.^[12] Nevertheless, the limited number of general anaesthesia cases and the short study period affected the sample size of our study.

CONCLUSION

The epitome of patient care vests in their well-being and satisfaction. However, drug-related problems,

especially adverse drug events could compromise both, thus housing limited quality of care for the patients. Employing questionnaire-based patient reported outcomes measures would allow the hospitals to identify the predictors of patient satisfaction and their safety-related issues. Clinical pharmacists could assist the healthcare professionals in the early detection and management of drug-related problems and improve overall patient care.

Acknowledgement

Ms. Spoorthy S Murthy, Ms. Jalapa Pradhan, Ms. Garlapati Arushi, Ms. C. Rozampuii, Mr. CH Mohan, Dr. Jehath Syed are the collaborators of the study. We, the authors and collaborators sincerely thank the leadership of JSS Hospital, Mysuru; JSS College of Pharmacy, Mysuru; and JSS Academy of Higher Education and Research, Mysuru for their support and guidance.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

**Sri Harsha Chalasanani, Gurudatt C. L¹,
Madhan Ramesh**

Department of Pharmacy Practice, JSS College of Pharmacy, JSS Academy of Higher Education and Research, Mysore-15, Karnataka,
¹Department of Anaesthesiology, JSS Medical College and Hospital, JSS Academy of Higher Education and Research, Mysore-15, Karnataka, India

Address for correspondence:

Dr. Sri Harsha Chalasanani,
Department of Pharmacy Practice, JSS College of Pharmacy,
JSS Academy of Higher Education and Research, Mysore-15,
Karnataka, India.
E-mail: sriharshachalasanani@jssuni.edu.in

Submitted: 24-Oct-2021

Revised: 08-Jan-2022

Accepted: 02-Mar-2022

Published: 24-Mar-2022

REFERENCES

- Lapere C, Roelofse J, Omar Y, Du Plessis A, Von Backstrom A, Botha W, *et al.* Patient satisfaction during and following procedural sedation for ambulatory surgery: Research: Reprint. *South Afr Dent J* 2015;70:442-7.
- Droog W, Hoeks SE, Van Aggelen GP, Lin DY, Coert JH, Stolker RJ, *et al.* Regional anaesthesia is associated with less patient satisfaction compared to general anaesthesia following distal upper extremity surgery: A prospective double centred observational study. *BMC Anesthesiol* 2019;19:1-7.
- Walker EM, Bell M, Cook TM, Grocott MP, Moonesinghe SR. Patient reported outcome of adult perioperative anaesthesia in the United Kingdom: A cross-sectional observational study. *Br J Anaesth* 2016;117:758-66.

4. Moonesinghe SR, Walker EM, Bell M. Design and methodology of SNAP-1: A Sprint National Anaesthesia Project to measure patient reported outcome after anaesthesia. *Perioper Med* 2015;4:1-6.
5. Fung D, Cohen M. What do outpatients value most in their anesthesia care?. *Can J Anaesth* 2001;48:12-9.
6. Bauer M, Böhler H, Aichele G, Bach A, Martin E. Measuring patient satisfaction with anaesthesia: Perioperative questionnaire versus standardised face-to-face interview. *Acta Anaesthesiol Scand* 2001;45:65-72.
7. Teunkens A, Vanhaecht K, Vermeulen K, Fieuws S, Van de Velde M, Rex S, *et al.* Measuring satisfaction and anesthesia related outcomes in a surgical day care centre: A three-year single-centre observational study. *J Clin Anesth* 2017;43:15-23.
8. Desousa KA. Pain on propofol injection: Causes and remedies. *Indian J Pharmacol* 2016;48:617-23.
9. Myles PS, Williams DL, Hendrata M, Anderson H, Weeks AM. Patient satisfaction after anaesthesia and surgery: Results of a prospective survey of 10,811 patients. *Br J Anaesth* 2000;84:6-10.
10. Mavridou P, Dimitriou V, Manataki A, Arnaoutoglou E, Papadopoulos G. Patient's anxiety and fear of anesthesia: effect of gender, age, education, and previous experience of anesthesia. A survey of 400 patients. *J Anesth* 2013;27:104-8.
11. Suresh P, Mukherjee A. Patient satisfaction with regional anaesthesia and general anaesthesia in upper limb surgeries: An open label, cross-sectional, prospective, observational clinical comparative study. *Indian J Anaesth* 2021;65:191-6.
12. Bajwa SJ, Mehdiratta L. Adopting newer strategies of perioperative quality improvement: The bandwagon moves on.... *Indian J Anaesth* 2021;65:639-43.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, 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.

Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/ija.ija_945_21

How to cite this article: Chalasanani SH, Gurudatt CL, Ramesh M. Patient satisfaction, outcomes, and experience measures in patients receiving general anaesthesia: A prospective questionnaire based observational study. *Indian J Anaesth* 2022;66:224-8.