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ORIGINAL RESEARCH

Quality of anaesthesia care in elective surgery at a Western Cape academic hospital in South Africa: a perioperative patient satisfaction survey

C Mathews, L Firfiray

Department of Anaesthesiology and Critical Care, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital, South Africa
Corresponding author, email: *carry.mathews@gmail.com*

Background: At a Western Cape academic hospital in South Africa, patients' experiences after elective surgery were surveyed to primarily determine the level of patient satisfaction with anaesthesia care and secondly, to identify aspects of anaesthesia care that could be improved to ensure the best and safest care possible during the perioperative period.

Methods: A total of 200 participants were interviewed within 24 hours postoperatively after elective surgery in a variety of surgical disciplines. They completed a Perception of Quality in Anaesthesia (PQA) questionnaire with the help of an independent non-anaesthetist research assistant. Overall satisfaction was inferred by the percentage response to each variable in the questionnaire. Chi-square testing was used to find a correlation between different demographics, subgroups, and specific questions in the questionnaire. A p-value < 0.05 was considered statistically significant.

Results: The overall patient satisfaction rate with anaesthesia care was 88.13% (95% CI 82.8–91.8). More than a quarter (27%) of patients reported inadequate management of nausea and vomiting, and almost half (46.5%) reported that the anaesthetist did not address their concerns. This was a statistically significant finding in patients with a college certificate level of education, with 75.76% of this group reporting the failure of anaesthetists to address their concerns about their anaesthesia management ($p = 0.003$).

Conclusion: The overall satisfaction rate with anaesthesia care was high among the study participants. Potential aspects of anaesthesia care that could be improved were identified. The importance of communication, providing sufficient information about anaesthesia care, and addressing patient concerns was highlighted in this study.

Keywords: quality of surgery, elective surgery, perioperative patient, satisfaction, survey, anaesthesia

Introduction

Patients' experiences and levels of satisfaction with healthcare should be continually evaluated to allow for improvement in healthcare services to the highest and safest standard possible.[1] Satisfaction is defined as the result of the comparison between the expectations and perceived outcomes and it is considered a valuable measure of the outcome of healthcare processes.[2,3] Patient dissatisfaction occurs when there is a discrepancy between a patient's expectation and the actual outcome of the experience.[4]

Regarding anaesthesia services rendered, many studies have shown that there are a variety of factors that influence whether or not a patient is either satisfied or dissatisfied with the service rendered.[4,5,6] These factors include age, gender, level of education, type of surgery, type of anaesthesia, and communication.

Fear of the unknown and a fear of anaesthesia specifically is also a real concern. Mavridou et al.[7] conducted a preoperative survey of patient anxiety and fear of anaesthesia and found that 80% of patients experienced fear and anxiety towards anaesthesia specifically. In this study, patients were concerned about postoperative nausea and vomiting, not waking up postoperatively (fear of death), postoperative pain, and having drains and needles inserted in their bodies. Ruhaiyem et al.[8] studied the fear of going under general anaesthesia and found that 88% of patients experienced preoperative fear relating to possible intraoperative awareness, postoperative nausea, and vomiting, and feeling sleepy postoperatively.

We evaluated patient satisfaction with anaesthesia care services at this institution using an adapted version of the PQA questionnaire. The PQA, validated by Heidegger et al.,[9] incorporates many dimensions of care that could impact patient satisfaction with anaesthesia care. The questionnaire is short, requiring three minutes to complete, and all the questions are thought to be easily understood and answerable by patients.[10]

Our tertiary-level academic hospital is the largest hospital in the Western Cape Province and the second largest hospital in South Africa, with a bed occupancy of 1 384. We conduct close to 30 000 surgical procedures per annum and approximately 2 500 cases per month.

Receiving feedback from the end user, in this instance, surgical patients, is vitally important when trying to improve anaesthesia services.[11] This feedback can identify aspects that are disregarded by anaesthetists who may not attribute equal importance to the aspect in question.[3,12]

We aimed to assess the quality of anaesthesia services delivered at our institution from the patient's perspective. Our primary

objective was to determine the overall level of patient satisfaction with anaesthesia care, and our secondary objective was to identify aspects of anaesthesia care that could be improved. Aspects of care that were surveyed included both clinical factors (pain, nausea and vomiting) and non-clinical factors (communication, addressing concerns regarding anaesthesia care, patients' confidence in the abilities and technical skills of the anaesthetist, and the friendliness and amount of time devoted to them by the anaesthetist).

Methods

This was a cross-sectional, observational study conducted in a single tertiary centre. Recruitment of participants and data collection occurred over seven weeks, from 7 February 2022 to 24 March 2022. The Stata 15 program was used for the calculation of the sample size. Based on the binary indicator from a good perception of the quality of anaesthesia, and assuming that 50% of subjects in the study population would respond positively, the study required a sample size of 150 to have an 8% absolute precision within a 95% confidence interval (CI) (42–58%). Using 50% as the prevalence was a conservative approach.

The target population included patients who underwent elective surgery in the previous 24 hours. Participants meeting the inclusion criteria were recruited from pre-randomised elective surgical lists. A randomisation tool was used to provide the investigator with specific theatre lists for data collection on specific days. Participants signed an informed consent form after receiving an explanation about the nature of the study from the research assistant/interviewer as per a guideline sheet.

Participants included in the study were those who had undergone elective surgery in the previous 24 hours, patients over 18 years of age, and patients speaking English, Afrikaans and/or Xhosa.

Participants excluded from the study were COVID-19-positive patients, day-case surgery patients, patients for emergency surgical procedures, patients requiring admission to the critical care unit postoperatively, patients under the age of 18 years, patients who had sustained head injuries or those with a history of neurodevelopmental abnormalities or psychiatric illnesses, and patients who were blind or deaf.

Assisted by the interviewer, participants were asked to complete the validated PQA questionnaire to assess their level of satisfaction with anaesthesia care concerning their surgical procedure in the preceding 24 hours. The informed consent document and the PQA questionnaire were available in English, Afrikaans, and Xhosa, three of the official languages of South Africa. The interviewers were voluntary medical students independent of the Department of Anaesthesia.

The questions asked in the PQA were:

1) How would you rate the amount of information your anaesthetist gave you?

2) How gentle was your anaesthetist?

3) How would you rate your anaesthetist's technical skills (needles/drips)?

4) How friendly was your anaesthetist?

5) How would you rate the amount of time you had with your anaesthetist?

6a) If you had a general anaesthetic, do you remember anything during the surgery?

6b) If you did not have a general anaesthetic (had a nerve block or epidural etc.), did you feel any pain during the operation?

7) How would you rate the management of your pain after the operation?

8) Did you have any nausea or vomiting after your operation?

9) Did the anaesthetist address any concerns you had regarding your anaesthetic?

10) Did the anaesthetist talk to you in a way that you could understand?

11) Did you feel confident in the ability of your anaesthetist?

Patient responses were binary or recorded as a response on either a three- or five-point Likert scale. All collected data was collated with Microsoft Excel 365 Version 16.61 and the data was analysed using Stata 15 with the assistance of the Division of Epidemiology and Biostatistics, Stellenbosch University.

For data analysis, demographic characteristics and questionnaire responses were presented as frequencies and percentages respectively. The demographic subgroup characteristics and the responses to the questionnaire were cross-tabulated and presented similarly. Chi-square testing was used to test for statistical significance between the different demographic subgroup categorical variables and questions in the questionnaire. A p-value < 0.05 was considered statistically significant. Incomplete questionnaires were analysed and missing data was excluded from the analysis.

The independent variables included the patient demographic subgroups as well as the clinical and non-clinical factors related to preoperative, intraoperative, and postoperative anaesthesia care. The dependent variable was the level of patient satisfaction. The demographic data recorded included patient age, sex (gender), highest level of education, fluency in English, citizenship (South African or not), and race.

For the interpretation of patient satisfaction, on a five-point Likert scale "Far too little" and "Too little" were grouped as dissatisfied and "About right", "Too much" and "Far too much" were grouped as satisfied. Similarly, "Very poor" and "Poor" were grouped as dissatisfied, while "Fair", "Good" and "Very good" were grouped as satisfied. "One of the worst" and "Below average" were grouped as dissatisfied, while "Average", "Above average" and "One of the best" were grouped as satisfied. On a three-point Likert scale

"Not at all" was deemed dissatisfied while "Occasionally" and "Frequently" were deemed as satisfied.

Results

A total of 200 participants were interviewed 24 hours post-operatively with a 100% response rate in completion of the PQA questionnaire. Incomplete questionnaires amounted to 4.5%. The overall patient satisfaction rate was 88.13% (95% CI 82.8–91.8).

The demographic data of the study population is tabulated in Table I. All variables were reported in frequencies and percentages. Descriptive frequencies and answers to the specific questions in the PQA questionnaire are tabulated in Table II. Descriptive frequencies of missing data for different variables of concern are tabulated in Table III.

Cross-tabulation of the various demographic subgroup variables and the questionnaire responses revealed a single statistically

Table I: Descriptive frequencies of study variables (total *n* = 200)

Demographic data		
Characteristic	**Frequency (*n*)**	**Percentage (%)**
Age (years)		
18–29	18	9
30–39	40	20
40–49	37	18.5
50–64	58	29
65 +	47	23.5
Gender		
Male	87	43.5
Female	113	56.5
Level of education		
Less than high school diploma	108	54
High school diploma or equivalent	52	26
College certificate	34	17
Bachelor's degree or more	6	3
Language		
Speaks English	68	34
Does not speak English	1	0.50
Speaks English well	86	43
Speaks English less than well	45	22.5
Citizenship		
South African	190	95
Non-South African	10	5
Race		
Asian	0	0
Black	58	29
Coloured	111	55.5
Indian	3	1.5
White	27	13.5
Other	1	0.50

Table II: Descriptive frequencies of questionnaire results

	Frequency (*n*)	**Percentage (%)**
Question 1: Rate the amount of information received from the anaesthetist		
Far too little	4	2.02
Too little	11	5.56
About right	167	84.34
Too much	11	5.56
Far too much	5	2.53
Question 2: Was the anaesthetist gentle?		
Not at all	1	0.50
Occasionally	11	5.53
Frequently	187	93.97
Question 3: Rate the anaesthetist's technical skills (needles/drips)		
Very Poor	7	3.55
Poor	20	10.15
Fair	85	43.15
Good	84	42.64
Very good	1	0.51
Question 4: How friendly was the anaesthetist?		
One of the worst	0	0
Below average	1	0.50
Average	25	12.56
Above average	87	43.72
One of the best	86	43.22
Question 5: How would you rate the amount of time with the anaesthetist?		
Far too little	1	0.51
Too little	19	9.60
About right	162	81.82
Too much	12	6.06
Far too much	4	2.02
Question 6:		
a) If you had a general anaesthetic, do you remember anything?	Total: 158	Total: 79.4
Yes	7	3.52
No	151	75.88
b) If you had a spinal/epidural or nerve block, did you feel any pain?	Total: 41	Total: 20.61
Yes	2	1.01
No	39	19.60
Question 7: Rate the pain management after the operation		
Very poor	4	2.01
Poor	9	4.52
Fair	28	14.07
Good	86	43.22
Very good	72	36.18
Question 8: Nausea and vomiting after surgery		
Yes	53	26.77
No	145	73.23

Question 9: Did the anaesthetist address your concerns regarding the anaesthetic?		
Yes	103	53.37
No	90	46.63
Question 10: Did the anaesthetist talk to you in a way that you could understand?		
Yes	186	93.94
No	12	6.06
Question 11: Were you confident in the ability of the anaesthetist?		
Yes	183	92.42
No	15	7.58

significant correlation between patients with a college certificate level of education and the addressing of concerns about anaesthesia care, where 75.76% of patients with a college certificate felt that anaesthetists failed to address their concerns about their anaesthesia management (p = 0.003). All other demographic subgroup (age, gender, language, citizenship, and race) correlations with questionnaire responses did not reach statistical significance (Table IV).

Table III: Descriptive frequencies of missing data for different variables of concern

Variable of concern	Number of participants with missing data (*n*)
How would you rate the amount of information the anaesthetist gave you?	1
How would you rate your anaesthetist's technical skills?	2
Did you have any nausea and vomiting after your procedure?	1
Did your anaesthetist address your concerns regarding your anaesthetic?	6
Did your anaesthetist talk to you in a way that you could understand?	1
Did you feel confident in the ability of your anaesthetist?	1

Discussion

The overall patient satisfaction rate with anaesthesia care among the study participants was very high. Cross-tabulation of the demographic subgroups with the questionnaire responses failed to show any statistically significant correlation, except for a statistically significant finding that 75.76% of patients with

Table IV: Cross-tabulation of the level of education and questionnaire variables

1) Rate the amount of information received from the anaesthetist						*p*-value; chi-square
Level of education	Far too little *n* (%)	Too little *n* (%)	About right *n* (%)	Too much *n* (%)	Far too much *n* (%)	
Less than high school diploma	4 (3.74)	5 (4.67)	85 (79.44)	9 (8.41)	4 (3.74)	0.172; 16.4295
High school diploma or equivalent	0	6 (11.54)	45 (86.54)	0	1 (1.92)	
College certificate	0	0	31 (93.94)	2 (6.06)	0	
Bachelor's degree or more	0	0	6 (100)	0	0	
2) Was the anaesthetist gentle?						*p*-value; chi-square
		Not at all *n* (%)	Occasionally *n* (%)		Frequently *n* (%)	
Less than high school diploma		1 (0.93)	7 (6.48)		100 (92.59)	0.789; 3.1575
High school diploma or equivalent		0	2 (3.85)		50 (96.15)	
College certificate		0	1 (3.03)		32 (96.97)	
Bachelor's degree or more		0	1 (16.67)		5 (83.33)	
3) Rate the anaesthetist's technical skills (needles/drips)						*p*-value; chi-square
	Very Poor *n* (%)	Poor *n* (%)	Fair *n* (%)	Good *n* (%)	Very good *n* (%)	
Less than high school diploma	3 (2.80)	14 (13.08)	40 (37.38)	49 (45.79)	1 (0.93)	0.860; 6.9660
High school diploma or equivalent	2 (3.92)	4 (7.84)	25 (49.02)	20 (39.22)	0	
College certificate	2 (6.06)	2 (6.06)	16 (48.48)	13 (39.39)	0	
Bachelor's degree or more	0	0	4 (66.67)	2 (33.33)	0	
4) How friendly was the anaesthetist?						*p*-value; chi-square
	One of the worst *n* (%)	Below average *n* (%)	Average *n* (%)	Above average *n* (%)	One of the best *n* (%)	
Less than high school diploma	0	1 (0.93)	15 (13.89)	46 (42.59)	46 (42.59)	0.753; 5.8647
High school diploma or equivalent	0	0	9 (17.31)	21 (40.38)	22 (42.31)	
College certificate	0	0	1 (3.03)	17 (51.52)	15 (45.45)	
Bachelor's degree or more	0	0	0	3 (50)	3 (50)	

5) How would you rate the amount of time with the anaesthetist?						*p*-value; chi-square
	Far too little *n* (%)	Too little *n* (%)	About right *n* (%)	Too much *n* (%)	Far too much *n* (%)	
Less than high school diploma	0	9 (8.33)	90 (83.33)	6 (5.56)	3 (2.78)	0.665; 9.4372
High school diploma or equivalent	0	6 (11.54)	41 (78.85)	4 (7.69)	1 (1.92)	
College certificate	1 (3.13)	4 (12.50)	26 (81.25)	1 (3.13)	0	
Bachelor's degree or more	0	0	5 (83.33)	1 (16.67)	0	
6a) If you had a general anaesthetic, do you remember anything?						*p*-value; chi-square
	Yes	No				
Less than high school diploma	6 (5.56)	82 (75.93)				0.717; 8.8305
High school diploma or equivalent	0	38 (73.08)				
College certificate	1 (3.03)	25 (75.76)				
Bachelor's degree or more	0	6 (100)				
6b) If you had a spinal/epidural or nerve block, did you feel any pain?						*p*-value; chi-square
	Yes	No				
Less than high school diploma	1 (0.93)	19 (17.59)				0.717; 8.8305
High school diploma or equivalent	0	14 (26.92)				
College certificate	1 (3.03)	6 (18.18)				
Bachelor's degree or more	0	0				
7) Rate the pain management after surgery						*p*-value; chi-square
	Very poor *n* (%)	Poor *n* (%)	Fair *n* (%)	Good *n* (%)	Very good *n* (%)	
Less than high school diploma	2 (1.85)	3 (2.78)	15 (13.89)	46 (42.59)	42 (38.89)	0.577; 10.4498
High school diploma or equivalent	1 (1.92)	4 (7.69)	8 (15.38)	22 (42.31)	17 (32.69)	
College certificate	0	2 (6.06)	4 (12.12)	16 (48.48)	11 (33.33)	
Bachelor's degree or more	1 (16.67)	0	1 (16.67)	2 (33.33)	2 (33.33)	
8) Nausea and vomiting after surgery						*p*-value; chi-square
	Yes	No				
Less than high school diploma	25 (23.36)	82 (76.64)				0.637; 1.6996
High school diploma or equivalent	17 (32.69)	35 (67.31)				
College certificate	9 (27.27)	24 (72.73)				
Bachelor's degree or more	2 (33.33)	4 (66.67)				
9) Did the anaesthetist address your concerns regarding the anaesthetic?						*p*-value; chi-square
	Yes	No				
Less than high school diploma	61 (57.55)	45 (42.45)				0.003; 14.0273
High school diploma or equivalent	30 (62.50)	18 (37.50)				
College certificate	8 (24.24)	25 (75.76)				
Bachelor's degree or more	4 (66.67)	2 (33.33)				
10) Did the anaesthetist talk to you in a way that you could understand?						*p*-value; chi-square
	Yes	No				
Less than high school diploma	100 (92.59)	8 (7.41)				0.300; 3.6614
High school diploma or equivalent	48 (94.12)	3 (5.88)				
College certificate	33 (100)	0				
Bachelor's degree or more	5 (83.33)	1 (16.67)				
11) Were you confident in the ability of the anaesthetist?						*p*-value; chi-square
	Yes	No				
Less than high school diploma	99 (91.67)	9 (8.33)				0.826; 0.8974
High school diploma or equivalent	48 (94.12)	3 (5.88)				
College certificate	30 (90.91)	3 (9.09)				
Bachelor's degree or more	6 (100)	0				

a college certificate level of education felt that anaesthetists failed to address their concerns regarding their anaesthesia management.

In Africa, studies done in Northern Ethiopia and Eritrea have reported both similar and higher levels of overall patient satisfaction with their perioperative anaesthesia experience. In Northern Ethiopia, Benwu et al.[4] conducted a study at Ayder Comprehensive Specialized Hospital to assess the overall patient satisfaction levels with anaesthesia care and the factors affecting it. They found that the overall patient satisfaction rate with anaesthesia was 88.33%. Benwu et al.[4] had 50.9% females and 49.1% males enrolled and a 74.17% patient population with only a primary school level of education.

Simegn et al.[12] evaluated patient satisfaction with perioperative anaesthesia services at the University of Gondar in Northern Ethiopia where they found the overall patient satisfaction rate to be 74%. Simegn et al.[12] had similar patient characteristics where 65.33% of patients were female and 26.38% (which formed the majority of the group) of patients had only a primary school level of education but found lower levels of patient satisfaction possibly due to a larger sample size, which could have been more reflective of the true results.

Andemeskel et al.[13] conducted a study in Eritrea where the main objective was to assess patient satisfaction levels with anaesthesia and the factors affecting it. They had a large sample size of 470 patients and their study was conducted at two national referral centres. The overall patient satisfaction rate was 68.8%. Interestingly, when comparing the scores of the different dimensions, the dimension of information provided to the patient had a 45% patient satisfaction score, but the dimension of fear and concern scored a high patient satisfaction score of 87.5%. Even though patients had their fears and concerns tended to quite well (according to their results), they were still not as satisfied with their overall anaesthesia care. They also reported higher patient satisfaction levels in patients who presented for elective surgery in comparison to those who presented for emergency surgery.

Studies in other parts of the world have also reported both higher and lower rates of perioperative patient satisfaction with anaesthesia care. In Saudi Arabia, Alsaif et al.[14] reported lower patient satisfaction rates with anaesthesia care with an overall 56.5% rate. This lower satisfaction rate could be due to authors conducting pre- and postoperative interviews, thereby priming patients before data collection and possibly increasing negative feedback.

Ambulkar et al.[15] conducted a study in India where they had an overall 97.5% patient satisfaction rate with anaesthesia. This higher patient satisfaction rate is likely due to the consultation of patients in a pre-anaesthesia clinic. After attending the pre-anaesthesia clinic, 93.8% of patients felt that they had received opportunities to ask anaesthesia-related questions, 92.1% of patients felt that their concerns about their upcoming anaesthesia were addressed, and 92.7% of patients felt that they understood all the information given by the anaesthetist.

There were limited studies done in South Africa to assess the overall quality of anaesthesia services delivered, which made it difficult to compare this study's findings to those of other local institutions.

Makoko et al.[16] conducted a study at Tembisa Hospital, South Africa, where they evaluated patient satisfaction with spinal anaesthesia in caesarean section surgery. Their overall patient satisfaction rate was 77.1%. Patients who were employed, who had multiple previous pregnancies, and who received what they considered adequate preoperative information showed increased satisfaction levels with the quality of anaesthesia received. The urgency of the caesarean section operation (emergency/elective) and verbal communication throughout also improved overall patient satisfaction. Their sample size consisted of 82 obstetric patients undergoing regional anaesthesia for caesarean section surgery. Consequently, the results of this study cannot be generalised to indicate overall patient satisfaction with the range of potential anaesthesia techniques offered.

In 2016, Murray et al.[17] reviewed the incidence and risk factors of acute postoperative pain at Tygerberg Hospital in the Western Cape and found that 62% of the study population indicated significant postoperative pain. In contrast, our study found 93.47% satisfaction with acute postoperative pain management; however, this finding was not statistically significant in terms of age, gender, citizenship, race, or level of education. It is important to note the difference in sample size and study population between the two studies, considering that Murray et al.[17] looked specifically at obstetrics patients.

In our study, 80% of the participants had a basic level of education with 54% having less than a high school diploma and 26% having a high school diploma or equivalent. Of the remaining 20%, 17% had a college certificate or equivalent and 3% had a bachelor's degree. On cross-tabulation, a statistically significant percentage of the group with a college certificate level of education felt that their concerns regarding anaesthesia care were not addressed. Of the total participants, almost half (46.63%) felt that their concerns regarding their anaesthesia care were not addressed. The reasons for these findings are not clear, but they emphasise the need for ongoing training in communication for anaesthetists to ensure that patients of all levels of education can understand and receive adequate information regarding their anaesthesia management. Besides training in effective communication, there may be other factors that could lead to ineffective and inadequate communication, including working in a resource-limited setting with time constraints, the load of patients needing assessment preoperatively, language barriers, and patients' fears or anxiety about being managed differently if they ask too many questions.

The higher patient satisfaction rates with anaesthesia care in institutions where patients are assessed in a pre-anaesthesia

clinic emphasises the importance of such a service, which allows more time for information to be provided to patients and patients' questions to be answered. Recently, a pre-anaesthesia service started at our institution and with future investigation a possible increase in patient satisfaction rates with anaesthesia may be shown. In a pre-anaesthesia clinic, patients are assessed, their comorbid medical conditions optimised, and the anaesthesia plan for their scheduled surgical procedure is discussed. Currently, only the highest risk patients requiring a more extensive anaesthesia plan are seen in the pre-anaesthesia clinic, as human and infrastructure resource constraints do not allow for all patients to be seen. Hopefully, in the future, this service will become available to more patients.

This study was not designed to primarily identify aspects of anaesthesia care that could be improved – this was a secondary objective. In terms of satisfaction related to the management of nausea and vomiting, over a quarter of participants (27%) experienced nausea and vomiting after surgery. This is a clinically important finding that will be communicated to the anaesthetists at the institution so that they can alleviate patient suffering.

Recommendations for future research would be to evaluate patient satisfaction with different anaesthetic techniques in the context of specific surgical procedures. Furthermore, additional statistical analyses across demographic subgroups to determine causative factors influencing the level of patient satisfaction with anaesthesia care may yield further opportunities for improvement in anaesthesia care.

Strengths of this study include the reduction of bias by obtaining informed consent from participants after their respective procedures and the administration of the questionnaire by an independent interviewer. The use of different interviewers increased the risk for bias and to minimise this each interviewer communicated with patients aided by a standardised information sheet. The modest sample size from a single centre is a limitation as it does not allow generalisability of the results. The study was done over a short seven-week period and was not representative of continuous satisfaction, but rather satisfaction at a certain point in time.

Conclusion

The overall patient satisfaction rate with anaesthesia care was high among the study participants and various factors for improvement of anaesthesia services for the ultimate improvement of patient satisfaction were identified. This study highlighted the importance of thorough communication with patients by anaesthetists, as a statistically significant proportion of the study participants expressed the failure of anaesthetists in addressing their anaesthesia-related concerns.

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Conflict of interest

The authors declare no conflict of interest.

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Ethical approval

This research was approved by the Health Research and Ethics Committee of Stellenbosch University in November 2021 (Ref S21/07/140). The hospital's approval for the conduction of this study was received from Tygerberg Hospital in February 2022.

ORCID

C Mathews https://orcid.org/0000-0002-8067-5686
L Firfiray https://orcid.org/0000-0002-4071-7917

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