MANAGERIAL

Patients' Expectations of Their Anesthesiologists

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ABSTRACT

OBJECTIVES: To determine the patient's perception of the role of an anesthesiologist and the patient's expectations of their anesthesiologist and their anesthesia care.

STUDY DESIGN: Questionnaire survey.

METHODS: A total of 170 patients attending the preanesthesia clinic answered a survey prior to their clinic interview and another survey the day after their surgery. The questions pertained to their perception of the role of the anesthesia provider, their expectations, and their level of satisfaction.

RESULTS: A majority (>75%) of the participants had high expectations of their anesthesia provider. The satisfaction scores were higher among those who felt that their expectations were met and among those who felt that the anesthesiologist explained to them how they would feel after anesthesia.

CONCLUSIONS: Because satisfaction is a fulfillment of one's expectations, understanding what the patient expects from their anesthesiologist is the initial step to improve satisfaction scores. The onus is on the anesthesiologist to educate the patient about their role, to set realistic expectations of the postoperative course, and to involve the patient in decisions regarding their anesthesia care.

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Patient satisfaction is currently an important yardstick used to measure the quality and value of healthcare, including anesthesia care, and the literature is rife with articles on how to measure it.[1-6] The Agency for Healthcare Research and Quality developed the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), a 32-item survey tool to assess patients' experience with their hospital stay.[7,8] It includes 8 questions that relate to anesthesia, which mainly pertain to the communication skills of the anesthesiologist.[9] This information has been used for inpatient quality reporting since 2006 and, more importantly, it has been among the measures used to calculate value-based incentive payments under the Affordable Care Act since 2012.[10] It may be reasonable to speculate that in the near future, patient satisfaction scores could become part of the assessment of professional competence and even accreditation. Therefore, it is no surprise that the American Society of Anesthesiologists (ASA) and its Committee on Performance and Outcomes Measurement recommended that its members set up a process of assessing patient satisfaction with anesthesia care.[11]

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However, before placing emphasis on satisfaction score, it may be prudent to understand the priority that patients place on clinical outcome and the technical skills, efficiency, clinical judgment, cognitive knowledge, compassion, and communication skills of the anesthesiologist before grading satisfaction with anesthesia care.[12]

Therefore, the primary objective of this study was to answer the following questions: (1) What are the patient's perceptions of the role of an anesthesiologist during their perioperative care and of the clinical outcome for which their anesthesiologist is responsible? (2) What are the patient's expectations of an anesthesiologist and anesthesia care?

The answers could provide the anesthesiologist with knowledge regarding how to meet the expectations of their patients and possibly improve the patients' satisfaction with anesthesia care.[13]

METHODS

Institutional review board approval was obtained to recruit 200 patients visiting the preanesthesia assessment clinic (PAC) at the

Penn State Health Milton S. Hershey Medical Center who were willing to participate in 2 surveys, one before their clinic appointment and the other within 48 hours after their scheduled surgery.

TAKEAWAY POINTS

Because satisfaction is a fulfillment of one's expectations, if the patient satisfaction score is to reflect the quality of anesthesia care, the onus is on the anesthesia provider and the management of the healthcare facility to:

- Educate their patients about the role of an anesthesiologist
- Set realistic patient expectations of the postoperative course
- Involve patients in medical decisions regarding their care

Developing the Survey Questions

The surveys were intended to assess patients' expectations of their anesthesiologists and perioperative outcomes that they attribute to their anesthesia care (**Table 1**). The questions incorporated into the survey were modified from 3 sources: (1) the anesthesia providers (both physicians and nurse anesthetists) in the department, who detailed the important contributions to perioperative care that they believe they provide; (2) the questions proposed by the ASA Committee on Performance and Outcomes Measurement, as part of its recommendation to collect data about patient satisfaction, regarding the amount and clarity of information provided to the patient and their involvement in decision making with regard to the anesthesia[11]; and (3) the existing questions in the HCAHPS survey instrument.

The preanesthesia survey questions focused on (1) patient perceptions of the role of an anesthesiologist and (2) patient expectations of their anesthesia experience and the anesthesiologist. The postanesthesia survey questions focused on (1) the perioperative experience and whether it met their expectations and (2) overall satisfaction with the quality of anesthesia care. At the end of the survey, the participants were asked to recall the name of their surgeon and their anesthesiologist.

Statistical Analysis

Descriptive statistics regarding the demography of the participants and the responses to the questions are presented here. Correlation between variables was tested using (1) Kendall τ_b for correlation between ordinal variables and (2) Spearman correlation between a skewed continuous variable and a normal or skewed continuous variable or an ordinal variable. A ρ value of 0.25 or less was regarded as no correlation whereas a value of 0.75 or more was

TABLE 1. Composition of the Preanesthesia and Postanesthesia Surveys

PREANESTHESIA SURVEY The questions focused on the patient's perceptions of the role of the anesthesiologist and on the patient's expectations.
Section A: Perceptions of the role of the anesthesiologist
• What is your understanding of the role of an anesthesiologist? (1, not clear at all, to 5, extremely clear) • Objective assessment of the role of an anesthesiologist › Make sure you feel no pain during the surgery? (yes/no/not sure) › Help relieve your pain after the surgery? (yes/no/not sure) › Help control nausea after the surgery? (yes/no/not sure) › Maintain your blood pressure, heart rate, breathing, and temperature during your surgery? (yes/no/not sure) › Be available throughout of your surgery? (yes/no/not sure) › The person responsible for my anesthesia care would be a physician/a nurse/a technician
Section B: Expectations of the anesthetic experience (1, not important at all, to 5, very important)
• How important is it to you to be able to ask questions of your anesthesiologist? • How important is it to you for the anesthesiologist to explain everything that is done as part of your anesthesia care? • How important is it to you that the anesthesiologist goes over the major complications that could happen during your anesthesia? • How important is it to you that the anesthesiologist explains the various ways to control the pain after your surgery? • How important is it to you that the anesthesiologist explains the various ways to control nausea and vomiting after your surgery? • How important is it to you that the staff in the operating room and the recovery area maintains your privacy?
Section C: Expectations of the anesthesia provider (1, not important at all, to 5, very important)
• The way he or she introduces themselves • The way he or she speaks with you • The way he or she listens to you • The way he or she answers your questions • The way he or she explains things to you • The way he or she appears caring and compassionate • The way he or she puts in your intravenous cannula • The way I feel on the day after my surgery
Section D: Grade if you feel any pain, nausea, or depression (1, none, to 5, worst) and your sense of well-being (1, best, to 5, worst)

(continued)

TABLE 1. *(Continued)* Composition of the Preanesthesia and Postanesthesia Surveys

POSTANESTHESIA SURVEY The questions focused on whether the patient's experience matched their expectations.
Section A: Experience matching your expectations (1, very much disagree or very dissatisfied, to 5, very much agree or very satisfied)
• During the anesthesia clinic visit, before the surgery, I was encouraged to ask questions. • To what degree were you satisfied with the amount of information given by your anesthesiologist? • The information given to me by my anesthesiologist was understandable. • The anesthesiologist explained to me how I would feel after the anesthesia. • How satisfied are you with the management of your pain after surgery? • Did you have any nausea or vomiting after surgery? • If so, how satisfied are you with the treatment of nausea and vomiting? • How satisfied were you with the way the staff of the operating room and recovery area maintained your privacy? • The staff in the operating room and recovery area were professional. • The anesthesiologist and other members of the anesthesia team were professional. • How satisfied were you with the way in which the anesthesia team attended to your pain and nausea?
Section B: Satisfaction
• How satisfied were you with your overall anesthetic management? (1, very dissatisfied, to 5, very satisfied) • Could you name your surgeon and the anesthesiologist?
Section C: Grade if you feel any pain, nausea, or depression (1, none, to 5, worst) and your sense of well-being (1, best, to 5, worst)

regarded as a strong correlation. The Wilcoxon rank sum test was employed to compare medians of skewed continuous variables between 2 groups. A Kruskal-Wallis test with Wilcoxon rank sum tests for group comparisons was used for independent variables with more than 2 groups. The group comparisons were adjusted for the total number of comparisons using Bonferroni's correction. The χ^2 test was used to look for association between 2 categorical variables, and McNemar's test was used to compare changes in the same variable between the preanesthesia and postanesthesia surveys. A P value <.05 was considered significant. All analyses were performed using SAS software version 9.4 (SAS Institute; Cary, North Carolina).

RESULTS

Two hundred patients consented to participate in this study and completed the preanesthesia survey. However, the postanesthesia survey was completed by only 170 of these patients. The reason for this loss to follow-up was either cancellation of surgery (n = 20) or unexpected discharge on the day of surgery (n = 10). Therefore, the analysis was performed on the 170 participants who completed both surveys (Table 2). Orthopedic (29%), gastrointestinal (20%), and neurologic (13%) were the most common types of surgery, and 152 (89%) of the participants were white. All the participants had a previous anesthetic experience.

Patient Perceptions of the Role of an Anesthesiologist

When the participants were asked to grade how well they believed they understand the role of an anesthesiologist on a 5-point Likert scale, their mean (SD) response was 4.3 (0.9) of a maximum of 5, with 32 (19%) indicating a grade less than 4. They were then asked 6 questions to objectively gauge their understanding of the specific role of an anesthesia provider, with a score of 1 for a correct answer. Although 149 (88%) agreed that anesthesiologists are responsible for relieving pain during surgery, only 97 (57%) believed that they do so after surgery, and 120 (71%) believed that they help with controlling nausea after surgery. There were 124 (73%) participants who were aware that a physician was responsible for their anesthesia care. A total of 166 (98%) knew that the anesthesia provider would be available throughout their surgery, and 159 (94%) believed that the anesthesia provider would be monitoring their vital signs throughout the surgery.

The mean (SD) score for the 6 objective questions regarding the responsibilities of the anesthesiologist was 4.8 (1.3) of a maximum of 6. This score bore a poor correlation (0.1; 95% CI, −0.03 to 0.23; P = .13) to the participant's grading (4.3/5) of their understanding of the role of an anesthesiologist. This suggests an inaccurate perception of the role of an anesthesiologist.

Patient Expectations of the Anesthesia Provider

Patients were asked to grade, on a 5-point scale, the importance of their interaction with the anesthesiologist and the anesthesiologist's ability to clarify their questions about aspects of their anesthesia care. The expectation was high, with 75% or more of the participants scoring 4 or 5 for all the questions.

Patient Concerns and Self-assessment of General Well-being

The participants were asked if they had any specific fears or concerns about anesthesia. Eighty-nine (52%) participants expressed 1 or more concerns. Thirty-nine (23%) were worried about a long-term complication, 33 (19%) about nausea, 23 (14%) about being aware during surgery, 22 (13%) about pain, 17 (10%) about fear of the unknown, 15 (9%) about death, and 14 (8%) about loss of control.

When asked about their sense of well-being, more participants graded it "poor" during the postanesthesia survey compared with the preanesthesia survey. This could be because the postoperative pain and nausea was more than they had expected. However, fewer participants felt depressed after the surgery, which could be the result of a sense of relief from having survived the surgery.

Matching Patient Expectations With Perioperative Experience

During the postanesthesia survey, the participants were asked if their expectations were met. Although the participants answered on a 5-point Likert scale, each response was dichotomized into yes (4 or 5) or no (1, 2, or 3). The satisfaction score was significantly higher among those who felt that their expectations were met compared with those who did not feel so (**Table 3**).

Satisfaction With Anesthesia Care

Satisfaction with anesthesia care was graded as satisfied or very satisfied by 166 (98%) of the participants, and none were dissatisfied. The mean (SD) satisfaction score was 4.8 (0.4).

The satisfaction score was significantly higher (Wilcoxon rank sum test) among women compared with men (4.85 [0.38] vs 4.75 [0.42]; $P = .014$) but bore no correlation with age (Spearman correlation, −0.04 [95% CI, −0.20 to 0.12]) or level of education (Kruskal Wallis test; $P = .648$). The satisfaction score had a weak, negative Spearman correlation with the pain and depression that patients felt during the postoperative period (**Table 4**). When asked to name their surgeon and their anesthesiologist, 155 (91%) could name their surgeon, whereas only 15 (9%) could name their anesthesiologist correctly.

TABLE 2. Demography (N = 170)

Variable	Value
Age in years, mean (SD)	58.6 (14.3)
Gender, n (%)	
Male	79 (46.5)
Female	91 (53.5)
Level of education, n (%)	
Less than high school	53 (31.2)
High school or GED	38 (22.4)
College degree	50 (29.4)
Graduate or postgraduate degree	29 (17.1)
Type of surgery, n (%)	
Orthopedic	50 (29.4)
Gastrointestinal	34 (20.0)
Neurologic	22 (12.9)
Thoracic	15 (8.8)
Urologic	13 (7.6)
Gynecologic	11 (6.5)
Endocrine	8 (4.7)
Other	17 (10.0)
Occupation, n (%)	
Retired	59 (34.7)
Unemployed	21 (12.4)
Homemaker	11 (6.5)
Operative or labor	24 (14.1)
Management, retail or sales, social service	30 (17.6)
Professional (healthcare, education, finance, engineering)	25 (14.7)
Ethnicity, n (%)	
White	152 (89.4)
Black/African American	7 (4.1)
Hispanic	6 (3.5)
Asian	1 (0.6)
American Indian or Alaska Native	1 (0.6)
Other	3 (1.8)

GED indicates General Educational Development.

DISCUSSION

Human satisfaction is a complex, cognitive evaluation of multidimensional inputs that may include quality of outcome, interplay of emotions, and prior expectations. However, patient satisfaction has become a standard indicator for the quality and value of healthcare delivered, including anesthesia care.[4,5] Asking a patient if they were satisfied with the care that they received during the hospital stay for their surgery is too complex a question to expect an answer of yes or no or even a response on a 5-point scale. It becomes more complex when patients are asked to tease out a particular aspect, such as anesthesia care, especially if their understanding of the role of an anesthesiologist is nebulous or inaccurate. This study was an attempt to understand what the patient perceives as the role of an anesthesiologist, their expectations of the anesthesia care they receive (preanesthesia survey), and if their satisfaction score bore any correlation with whether their expectations were met or not (postanesthesia survey).

These study results show that there was significant discrepancy between the patient's perception of the role of an anesthesiologist and an objective assessment of their understanding. This calls into question the validity of the patient satisfaction score as a measure of anesthesia care quality. During the postanesthesia survey, 163 (96%) participants had a good understanding of the role of the anesthesiologist compared with 136 (80%) during the preanesthesia survey. This increase was statistically significant ($P < .05$) and could be the effect of interaction with a physician anesthesiologist in the PAC or during the perioperative experience. It could also, for these patients, be influenced by their participation in the study.

Although there was no comparison group, this cohort of participants had high expectations of their anesthesiologists, possibly because all of them had had a previous anesthetic experience. Fifty-two percent of the participants had fears or concerns about their anesthesia care, and the majority of the participants (78%) considered the ability to ask questions about different aspects

TABLE 3. Correlating Satisfaction Score With Expectations Met During Anesthesia Care[a]

	Met Expectations? No (score 1, 2, 3) vs Yes (score 4, 5)	Satisfaction Score: Median (IQR)	*P*
During the anesthesia clinic visit, before the surgery, I was encouraged to ask questions.	No: 15 (9%)	4.67 (4.00-5.00)	<.001*
	Yes: 155 (91%)	5.00 (5.00-5.00)	
To what degree were you satisfied with the amount of information given by your anesthesiologist?	No: 12 (7%)	4.83 (3.83-5.00)	.024*
	Yes: 158 (93%)	5.00 (5.00-5.00)	
The information given to me by my anesthesiologist was understandable.	No: 12 (7%)	4.50 (4.00-4.83)	<.001*
	Yes: 158 (93%)	5.00 (5.00-5.00)	
The anesthesiologist explained to me how I would feel after the anesthesia.	No: 29 (17%)	4.67 (4.00-5.00)	<.001*
	Yes: 141 (83%)	5.00 (5.00-5.00)	
How satisfied were you with the management of your pain?	No: 22 (13%)	4.67 (4.33-5.00)	<.001*
	Yes: 148 (87%)	5.00 (5.00-5.00)	
How satisfied were you with the treatment of your nausea and vomiting? (n = 51)	No: 6 (12%)	4.00 (4.00-4.33)	.004*
	Yes: 45 (88%)	5.00 (5.00-5.00)	
The staff in the operating room and the recovery area was professional.	No: 5 (3%)	4.67 (4.00-5.00)	.052
	Yes: 165 (97%)	5.00 (5.00-5.00)	
The anesthesiologist and other members of your anesthesia team were professional.	No: 4 (2%)	3.83 (3.33-4.50)	.003*
	Yes: 166 (98%)	5.00 (5.00-5.00)	
How satisfied were you with the way in which the anesthesia team attended to your pain and nausea?	No: 7 (4%)	4.00 (3.67-4.00)	<.001*
	Yes: 163 (96%)	5.00 (5.00-5.00)	

IQR indicates interquartile range.

*$P < .05$.

[a]The satisfaction score was significantly higher among participants who perceived that their anesthetic experience matched their expectations (Wilcoxon rank sum test).

TABLE 4. Correlation of the Patient's Satisfaction Score With Postoperative Discomfort and Their Expectations

	Spearman Correlation ρ (95% CI)	*P*
How much pain are you currently having?	−0.17 (−0.32 to −0.03)	.023*
How much nausea are you currently having?	−0.08 (−0.25 to 0.09)	.309
Are you currently feeling depressed?	−0.20 (−0.38 to −0.03)	.007*
How satisfied were you with the pain management after surgery?	0.44 (0.30-0.58)	<.001*
The anesthesiologist explained to me how I will feel after the anesthesia.	0.46 (0.32-0.59)	<.001*
During the anesthesia clinic visit, I was encouraged to ask questions.	0.37 (0.21-0.53)	<.001*

*$P < .05$.

of their anesthesia care to be important. More than 90% of the participants felt that this expectation was met by the anesthesia team. However, only about 80% of the participants agreed that they were told how they would feel after their anesthesia. This suggests that, during the preoperative interview, it is important to set the level of expectation for the postoperative period.

More than 90% of the participants considered the finesse with which the first intravenous (IV) cannulation was executed as important, but the question remains whether it was construed as representing the competency of the anesthesia provider. In the setting of a teaching institution, where the first IV insertion may be attempted by an inexperienced trainee, it may be a good practice to ensure supervision. The use of local anesthetic infiltration and summoning an experienced anesthesia provider when the initial attempt is unsuccessful may improve the overall anesthetic experience based on this initial contact with a patient.

In the current era, when access to information about medical care is easily available, the patient's expectations of the anesthesia provider go beyond just courtesy, pleasantry, and absence of poor outcome. Explaining the possible anesthetic complications tailored to the patient's comorbidities and providing various management options so that the patient can make an informed decision would be perceived as providing patient-centered care and an opportunity to participate in shared decision making.[13] The patient's assessment of their satisfaction with anesthesia care would depend not only on the communication and interactive skills of the anesthesiologist but also on their competency. Although appropriate management of postoperative pain and nausea contributes significantly to how the patient feels the day after the surgery, the anesthesia experience starts with the insertion of the first IV cannula.

The fact that very few participants could correctly name their anesthesiologists might be due to multiple reasons: the brevity of the contact with the anesthesiologist, the fact that the anesthesiologist on the day of surgery was different from the one they met at the PAC, the amnestic effect of the sedatives, improper introduction by the anesthesiologist, or patient perception of their anesthesiologist as less significant than their surgeon. However, the fact that many patients were anxious about their anesthesia care and considered it important to be able to clarify their concerns with the anesthesiologist points more toward the first 2 reasons and possibly the third. The fact that the patient consults a specific surgeon for the surgery but has no option to choose their anesthesiologist could explain the ability of most of them to remember the name of the surgeon but not the anesthesiologist.

The level of satisfaction demonstrated a weak, negative correlation with feeling pain and depression postoperatively (Table 4). However, it had a strong, positive correlation with the perception

that the anesthesia team responded promptly to manage their postoperative pain. The satisfaction score was higher among those who felt that the anesthesiologist explained how they would feel after the anesthesia, suggesting that perhaps patients who are preemptively well prepared for a realistic postoperative period may be more satisfied. Therefore, a one-on-one interaction between the anesthesiologist and the patient before the surgery would be an appropriate time to set realistic expectations and to involve the patient in their perioperative care. This would go a long way to improve patient satisfaction.

Limitations

This survey was done among patients from a restricted geographical area who were heterogeneous in their level of education and type of surgery, using a set of questions that was not validated. All the participants in this study attended the PAC, which is not currently the norm, as a large number of patients who are deemed healthy are seen by the anesthesiologist only on the day of surgery. The fact that all participants had a previous anesthesia experience could have influenced their understanding of the role of the anesthesiologist and the level of satisfaction. Other factors that may influence the satisfaction score, such as cost of medical care and surgical outcomes, were not investigated.

CONCLUSIONS

Measures of patient satisfaction will likely become an important aspect of professional assessment for anesthesiologists as they broaden their scope of practice to being perioperative physicians.[14] Therefore, if the patient satisfaction score is to reflect the quality of anesthesia care, the onus is on the anesthesiologist to educate their patients about their role, to set realistic expectations of the postoperative course, and to involve the patient in medical decisions regarding their care in order to provide holistic, patient-centered care.[15] ■

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