What Do Patients Want? Technical Quality Versus Functional Quality: A Literature Review for Plastic Surgeons

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Abstract
While most surgeons are well aware of outcomes studies and quality assessment based on technical quality (TQ) measurements, there has been little attention given in the plastic surgery literature to the discussion of functional quality (FQ)—the process by which a health care service is delivered, as opposed to the actual procedure itself. Most patients judge the quality of their hospital experience based on FQ issues. They use their assessment of FQ to secondarily infer a judgment of the TQ level of a surgeon or facility. Surgeons, conversely, typically rate their own success with purely technical quality measures, paying little attention to FQ. This article reviews the relevant service-quality medical literature and introduces plastic surgeons to the importance of differentiating between TQ and FQ. Important FQ assessment techniques are reviewed. Implications for the plastic surgeon are discussed.

Keywords
patient satisfaction, functional quality, technical quality, quality management, patient perception, surgical services

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Despite a plethora of publications in the marketing and commerce literature about service excellence and strategies that can be implemented to help achieve it, there is relatively little in the surgical literature about methods to ensure or to enhance service excellence for plastic surgery patients. However, a review of both the relevant marketing and non–plastic surgery literature can provide a number of useful insights for aesthetic plastic surgeons. Previous research in this literature shows that physicians and patients display a surprising difference in terms of emphasis when making a judgment about the quality of the surgical experience. Understanding these differences will help plastic surgeons to provide an improved patient experience, leading to increased patient satisfaction and subsequent clinical success.

WHAT IS “QUALITY”?

Quality is a simple idea, but it is difficult for consumers and experts alike to articulate a precise definition of quality. Everyone thinks they know what “quality” is. Some authors define quality with terms like “goodness” or “innate excellence,” which are hard to measure or apply from a practical perspective. Others use a more technical approach, “lack of defects” or “conformance to standards,” analogous to manufactured goods. Defining quality for services such as aesthetic surgery, however, is another issue altogether. Here, the definition tends to center on patient requirements, and how well surgeons can meet their expectations. The user of the service decides subjectively what the quality is, regardless of whether the service was “defect-free” or not. Despite its intangible nature, we all instinctively know quality when we see it. Furthermore, efforts to improve quality have real, tangible results. Research in a wide variety of business models, including health care, has linked improved quality to improved market share, profitability and net revenue, increased return on investment, reduced manufacturing costs, improved productivity, higher customer retention, positive word of mouth, and patient satisfaction.

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Consumer perceptions of service quality in health care are considered to be increasingly important for the following reasons:

- Quality represents a way to differentiate oneself from competition in a crowded market.
- Patients who rate services as being of higher quality tend to be more satisfied, more likely to return again in the future, and more likely to comply with medical advice.
- Patients who rate services as being of higher quality are more likely to recommend a health care provider.
- Agencies such as The Joint Commission (TJC; formerly the Joint Commission on Accreditation of Healthcare Organizations) are now requiring consumer feedback as a condition of accreditation of health care organizations.

According to the service literature, there are 2 distinct forms of quality: technical quality (TQ) and functional quality (FQ). The difference between them is a concept worthy of some discussion. TQ in general is defined as “the degree to which the industry is able to do things ‘right,’ as measured against a technical industry standard.” It can be considered to be much like the service equivalent of a quality specification for a manufactured item. In surgery, for example, return of function, absence of mortality, morbidity, or lack of perioperative complications would be considered classic examples of TQ standards. In most service industries, the “insider” knowledge of the process and standards is not well known outside of that field. TQ has also been termed “physical quality” by Lehtinen and Lehtinen12 and “extrinsic quality” by Mels et al. Typical patients — those without a medical background — are unlikely to have the knowledge required to judge the finer points of TQ in medicine. They are ill-equipped to make a rational TQ assessment of a health care provider or system.

FQ, on the other hand, is the manner in which services are delivered to customers and represents how the customer experienced the human interactions that occurred during the process. It is the way the service is delivered, rather than the service itself. FQ has also been termed “intrinsic quality” or “interactive quality.” Since FQ depends, by definition, on human factors, it is harder to measure and standardize. Total perceived quality is the term for the global judgment about overall service and includes the summation of both technical and functional components. Most authors consider TQ and FQ to be the independent variables in a 2-variable model, although some authors do include a third “environmental” variable, which corresponds with the health care delivery system, in their quality models.

**Key Point 1: Surgeons Predominately Value Technical Excellence**

This statement is likely self-evident: surgeons, by their very nature, often tend to feel that it is their technical skills that, via surgery, “save the day” and thereby make the patients happy. During surgical residency, the educational emphasis is on achieving appropriate levels of TQ—performing an operation correctly, in a timely manner, with low rates of morbidity and mortality. These thought patterns generally continue after the completion of residency. Therefore, it is not at all surprising that even well-written articles reviewing operative procedures in the plastic surgery literature have traditionally been concerned with complications, reoperation rates, and other TQ metrics, and do not deeply explore FQ issues other than in terms of basic questions related to patient satisfaction.

However, this emphasis on TQ—surgical technique, procedural development and refinement—is only one part of the total perceived-quality equation mentioned earlier. This single-minded focus has the disadvantage of overlooking the contributions of FQ to our patients’ feelings of satisfaction. For excellence in overall service, we need to pay attention to both the TQ- and FQ-related issues. It is here that we as surgeons can learn from our colleagues in other service industries. Skills in customer service are not innately present; they require training and practice to develop. Aspects of FQ may not be routinely taught in most plastic surgery residency training programs, but are, in this author’s opinion, essential patient management skills for the developing aesthetic surgeon.

**Key Point 2: Patients Value Functional Quality Most Highly When Rating Their Health Care Experience**

Despite surgeons’ affinity for TQ, research in a variety of health care settings shows, as in many situations in which patients or customers do not have much knowledge about the technical aspects of a service, FQ is the single most important factor used by consumers to form judgments about the quality of the delivered service. Furthermore, when patients attempt to make an assessment of TQ about a physician or hospital, they substitute value judgments derived from FQ issues—whether the receptionist greeted them cheerfully, how long they had to wait to see the doctor, whether the doctor was nice to his staff, and so on—to infer an answer about TQ. In other words, if FQ seems good to the patient, then the TQ of the doctor, clinic, or hospital must also be good. As summarized by Ware and Snyder, in general, “patients can not distinguish between the ‘caring’ (functional) performance and the ‘curing’ (technical) performance of medical care providers.”

Furthermore, it has been previously shown that the TQ of care provided by the clinician does not typically overcome systemic shortcomings or frustrations that exist for the patient elsewhere in the office, clinic, or hospital. Patients commonly have difficulty differentiating between TQ and FQ, and lump their judgments together in an overall way. For example, if the patient has difficulty with FQ issues (finding parking, trouble finding the clinic location, frustration with redundant paperwork, or a long waiting time), it’s going to be difficult for the clinician to make...
that patient feel very satisfied with his or her experience, regardless of that physician’s diagnostic excellence or surgical proficiency. FQ trumps TQ, for many patients.

It’s also rare to hear about TQ issues from average patients/consumers. For example, when patients typically describe their time in the hospital to their family and friends, they talk about their “experience”—how the food was, whether their nurse was compassionate, whether the room was cold or noisy, whether they felt truly well cared for by the nursing staff. These are all FQ issues.22 Thus, there is a mismatch of standards used to judge the quality of the very same hospital stay or outpatient experience between patients and surgeons; patients rate their experience based on FQ, while surgeons rate their success based on TQ.

To add a further element of complexity, research shows that hospital administrators typically value different quality attributes than either surgeons or patients. According to Jun and associates, patients emphasize courtesy, communication, and responsiveness; administrators focus on competence, understanding the customer, and collaboration; and physicians value TQ issues of competence and patient outcomes.29

Let’s examine a classic example of FQ versus TQ: choosing between 2 airlines, assuming cost or scheduling is not a factor.22 Is it based on the quality of the in-flight service and overall convenience (FQ), or the percentage of successful accident-free miles per year per number of passenger miles (TQ)? If you are like most people, your selection is entirely based on FQ issues, and TQ has little input into your decision. Aesthetic surgeons—members of one of the ultimate service industries—should be aware of and pay appropriate attention to FQ issues. They should fully understand the thought process of the prospective patient, and how FQ and TQ both play a role.

Does this new awareness of the importance of FQ mean that surgeons should give up on their quest for higher levels of TQ? No—technical excellence is critical to the survival of our specialty. However, we must realize that, in the patient’s mind, it is no longer enough just to be a great technician. What you say, how and when you say it, and how you behave all matter. As service guru Fred Lee says, “Patient satisfaction is about impressions.”22 A traditional TQ-based way of thinking that says “the patient should be 100% thrilled with me because I just performed a complex, highly technical procedure for them at a high skill level” ignores the importance of FQ to the patient. While patients clearly do appreciate technical excellence, in many areas of health care they actually seem to appreciate functional excellence at least as much, if not more. While it is certainly possible that aesthetic surgery patients may value TQ more than other surgical patients, as of this writing little research has been published on this hypothesis.

**HOW DO WE GATHER INFORMATION ON FQ ISSUES?**

To assess the FQ of a process, there are a variety of qualitative methods that can be used: direct managerial observation, employee feedback, focus groups, and quality circles. More quantitative methods include patient comment cards, self-administered patient surveys, personal interviews (in person or by telephone), and “mystery shoppers.” Each has advantages, disadvantages, and problems.25,30 Relevant survey techniques that have been rigorously tested and with which surgeons should be familiar include the SERVQUAL method of Parasuraman, Zeithaml, and Berry31 and the SERVPERF method of Taylor and Cronin.32 Both methods are well studied, reliable, reproducible, and valid, and while arguments persist about which survey method is superior,33-35 they are beyond the scope of this article. Other widely used survey instruments include those of the Press-Ganey and Gallop organizations, the Picker Patient Experience Questionnaire, and the Patient Judgment System Questionnaire.36,37 Generally, most in-house quality assessment efforts start with informal or ad hoc qualitative methods and progress to more in-depth, rigorous, quantitative methods.

Most assessment of service quality is based on Grönroos’s “gap theory” of service quality, in which perceived service quality is based on the difference, or gap, between the experienced service and the expected service.9 According to Grönroos, experienced service is a combination, or “image,” of TQ and FQ. Expected service is a mixture of customer needs, word of mouth, and marketing communications. The difference between these 2 gives the perceived service quality (Figure 1).

Parasuraman, Zeithaml, and Berry expanded this idea to develop the landmark “5 gap theory of service” (Figure 2), which looks at the process of service delivery from an organizational point of view.14 These gaps, which represent potential areas for service failure, are, in order, the following:

1. The gap between consumer expectations and management’s perceptions of those consumers’ expectations
2. The gap between management’s perception and its translation into service quality specifications
3. The gap between the specifications and how they are interpreted for the service delivery
4. The gap between the service delivery and external communications (marketing) to consumers
5. The gap between the customer’s perceived service and expected service, which is a function of gaps 1-4

The 5-gap model has been found to be applicable in the health care setting38 and can be used to develop a questionnaire to evaluate physician service quality.39

Later, Parasuraman, Zeithaml, and Berry went on to develop and refine SERVQUAL,31 a survey that uses 22 pairs of questions to assess service quality. The questionnaire examines the differences between consumers’ perceptions of the service provided by the organization (P) and their preexisting expectations of the service (E). SERVQUAL was conceived and designed to be a
A general-purpose survey instrument that could be applied across a variety of service industries. The 22 pairs of questions are scored on a 7-point Likert-type scale. The P-E mathematical differences between the answers for the provided service and the expectations are then used to calculate the quality of the service in 5 separate categories ("dimensions"), which are the following:

- Tangibles: the appearance of the physical facilities, equipment, personnel, and communication materials
- Reliability: the ability to deliver the service dependably and accurately
- Responsiveness: the willingness to help customers and provide prompt service
- Assurance: the knowledge and courtesy of employees and their ability to inspire trust and confidence
- Empathy: the caring, individualized attention the organization provides to its customers

The results of applying the SERVQUAL methodology to health care have been mixed. While most have found SERVQUAL to be an accurate, valid, and reliable instrument, some feel that certain unique elements of health care, such as caring and patient outcome, are not measured by the original SERVQUAL questions. Some investigators have developed their own modifications, with different questions and additional categories or dimensions of quality.

The SERVPERF methodology, by contrast, uses the same underlying questions as the SERVQUAL method, but eliminates the expectations portion of the 22 questions, focusing only on the actual perceptions of the delivered service to create scores in the same 5 dimensions. Proponents of the SERVPERF method feel that preexisting expectations unrelated to the service delivery itself should not influence the subsequent evaluation of the service.

An example of 22 typical SERVPERF questions is shown in Appendix A (available at www.aestheticsurgeryjournal.com). Overall, while both methods are valid and acceptable, debate continues over the ideal assessment method in the health care setting. For example, a comparison study investigating the use of SERVPERF and SERVQUAL in health care found that the shorter SERVPERF scale better explained the observed variations in consumer satisfaction and was easier to implement. On the contrary, Anderson found SERVQUAL to be more sensitive than SERVPERF to differences between various medical clinics at M.D. Anderson Cancer Center.

The relative importance of the 5 dimensions of quality varies from industry to industry. For example, a study of service quality in information technology organizations showed that reliability and responsiveness were the
most important dimensions, while empathy was the least important. This conclusion makes sense empirically. In the health care setting, the importance of the 5 SERVQUAL dimensions is quite different. In multiple studies, regardless of the precise methodology, there is a common theme about which dimension matters most to patients. Yoo reported that for outpatient medical clinics in Korea, the most important dimensions for customer satisfaction were tangibles and empathy. Burroughs and associates found in a study of US hospitals that empathy had the strongest association with patient satisfaction and loyalty. In a non-SERVQUAL study, Joffe et al surveyed 12,680 adults from 51 hospitals in Massachusetts and found that “treatment with respect and dignity” was the factor most associated with willingness to recommend the hospital. Roszak found that staff sensitivity to patient needs and the response to patient concerns or complaints were the top priorities of patients in a nationwide survey. The dimension of empathy has also been statistically proven to be a predictor of “intent to recommend.” Repeatedly, empathetic care—how well the hospital staff responded to patients’ needs—has been a key factor in patient satisfaction.

Commercially available methods used for measuring patient satisfaction include the Press-Ganey Survey, surveys from the Gallop organization, and others. A selection of survey results about key drivers of patient satisfaction is shown in Appendix B (available at www.aestheticsurgeryjournal.com). Again, patients’ highest priorities are related to effective communication, their emotional needs, and service recovery, findings that strongly echo many of the results mentioned earlier. Patients were most satisfied by hospitals and clinics where their needs were anticipated and where they were treated by a caring, sensitive, and compassionate staff. Perhaps Francis Peabody had it right in 1927 when he said, “The secret of the care of the patient is caring for the patient.” Of note, clinical outcomes did not appear in the upper portion of the list of what was judged to be important to the average patient. As mentioned previously, it remains to be shown whether or not aesthetic plastic surgery patients share this view—the data shown in Appendix B, admittedly, are from a general hospital population.

It turns out that the patient’s subjective assessment of the hospital experience, flawed estimate though it may be, is often a reasonably accurate reflection on the hospital’s TQ. Isaac et al studied this hypothesis and found statistically significant correlations between each of the following factors—the patients’ overall rating of the hospital, whether they would recommend the hospital, their feelings about pain management, their subjective assessment of the hospital environment, the responsiveness of the medical staff, the adequacy of discharge information—and the more objective, externally administered Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) ratings. Similarly, Taylor and associates found that patient-reported service quality deficiencies in a Boston teaching hospital were indeed associated with reportable adverse events and medical errors, more than doubling the odds ratio for such an event. Satisfied patients become loyal patients who return for future services and give positive word-of-mouth referrals, creating a positive-feedback loop for the organization and contributing to fiscal success as well as

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**Figure 2.** Five-gap theory of customer service, showing the potential areas for service deficiencies at the managerial, marketing and customer service levels. Created from information provided in Parasuraman A, Zeithaml VA, Berry LL. A conceptual model of service quality and its implications for future research. *J Mark.* 1985;49(2):41-50.
physician satisfaction. This is shown in the model proposed by Naidu (Figure 3).58

Of note, not all experts in this area feel that a complex survey instrument must be used to assess the patient experience. Reichheld, who is well known for his work on customer loyalty, feels that only a single question needs to be asked: “How likely is it that you would recommend our company to a friend or colleague?”59 The question is answered on an 11-point scale, where 0 represents “not at all likely,” 5 is neutral, and 10 means “extremely likely.” He then calculates a “net promoter” score, subtracting the “detractors” (0-6 points) from the “promoters” (9-10 points). His research has shown a linear correlation between the percentage of net promoters and a given organization’s 3-year financial growth rate, in a variety of industries. The concept of only counting the “promoters,” rather than the “passively satisfied” (score 7-8), has been successfully used by both Walt Disney World60 and Harrah’s casinos,61 and this has been found to be an excellent predictor of customer loyalty and return business in those fields.

**FQ RESEARCH IN PLASTIC SURGERY**

The research into service quality in plastic surgery is in its early stages. Chung and associates from the University of Michigan used a 9-item questionnaire, called the VSQ, to evaluate patient satisfaction in a general plastic surgery outpatient clinic.61 They found 4 statistically significant predictors of patient satisfaction:

1. The personal manner of the physician (odds ratio, OR = 18.0)
2. The time spent with the physician (OR = 4.7)
3. Length of time to get an appointment (OR = 4.6)
4. A satisfactory explanation of what was done (OR = 3.9)

Interestingly, in their research the length of waiting time in the clinic was not found to be significant. Other studies in non–plastic surgery ambulatory care settings have found differing results on this latter point, with the patient’s total time spent waiting for the clinician being highly predictive of patient satisfaction.42,52,62,63 This difference will require further exploration.

Babakus and associates used a modified 10-question SERVQUAL survey combined with open-ended questions to study attitudes among 372 patients who had undergone either cosmetic or reconstructive breast surgery in a US metropolitan area during 1989.63 The open-ended questions revealed that “physician competence in providing services” was the most important factor for both groups, followed by “physician personality” and “thoroughness of the physician and staff.” The cosmetic group was generally more critical of the quality of services than the reconstructive group, particularly for questions about “how information was communicated to the patient,” “placing the patient’s best interests first,” and “efforts of the doc-

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**Figure 3.** Naidu’s model of health care services, showing the positive feedback loop between quality efforts, patient satisfaction and patient loyalty. Created from information provided in Naidu A. Factors affecting patient satisfaction and healthcare quality. *Int J Health Care Qual Assur.* 2009;22(4):366-381.
tors and staff to understand the patient’s needs.” Even though the high rating of physician competence in that study suggests a significant degree of awareness of TQ issues by the patients, Babakus et al suggested caution in interpreting this result, suspecting that the respondents could have been inferring TQ from FQ judgments, as has been discussed previously.

Finally, perhaps there is a self-serving reason for surgeons to take an interest in patient satisfaction and FQ: a review of patient satisfaction following skin lesion removal in a plastic surgery clinic found that the higher the degree of patient satisfaction, the higher the level of surgeon satisfaction. This “patient satisfaction = physician satisfaction” result has also been confirmed using the Press Ganey survey methodology in a study of 1576 US hospitals.

Other industries, notably tourism and hospitality, have long mastered the art of delivering first-class service. Examples such as Walt Disney World and Ritz-Carlton hotels are obvious examples of how “best-in-class” service differentiates these organizations from their competitors. Aesthetic plastic surgeons could certainly adopt some of the best practices of these organizations. Health care, in general, has been slow to adopt the lessons of how to provide world-class service, but the era of “patient as customer” has arrived.

**Key Point 3: The Information Age Has Changed the Traditional Definition of Patient and Has Changed Patients’ Expectations**

Prospective aesthetic surgery patients are increasingly knowledgeable, often as a result of online research. They shop for their elective plastic surgery services, comparing the options. They expect value for their money, and they expect to be cared for well. With easy access to high-quality information over the Internet, patients seem less impressed by physician medical knowledge than in previous generations, as they can now research their own diagnosis themselves in minutes. Perhaps today’s patients, especially in outpatient surgery environments, actually have more in common with consumers.

Mayer and Cates describe a continuum between patient and customer status. Patients, in their analysis, tend to be acutely ill or injured, are more dependent on the physician, have less choice, and require technical expertise in a time-dependent manner. Customers, on the other hand, are less severely ill, are more independent, have more choice, and their treatments are much less time critical. They require more service skills. Mayer and Cates summarize the situation as follows: “The more horizontal they are, the more they are a patient. The more vertical they are, the more they are a customer.”

By this assessment, virtually all elective aesthetic patients should be thought of as customers, even though the commercial associations with the term “customer” may make many physicians a little uneasy. (Some authors prefer the term “guest” or “client”—each term has some limitations.) Regardless, the shift in mental perception that accompanies the choice of terminology allows a reexamination of our thought patterns and biases about the interactions that we have with our patients/customers and the interactions they have with the nursing staff, the nonclinical staff, and the hospital or clinic. Since, according to Leebov and Afriat, “patients are customers with the power to make or break the [health care] service . . . a conscious and conscientious strategy for achieving customer satisfaction through distinctive service is needed.” Once again, there is the recurring theme: customer service is not just the surgery or the clinical care, but also the other elements that “surround and complement the clinical care.”

These elements—compassion, caring, and interpersonal skills—may be intangible but they are measureable, teachable, and improvable. Methodology for these assessment and improvement processes will be discussed in a future article.

**CONCLUSIONS**

The total perceived quality of a service is made up of both TQ and FQ components. Surgeons value the TQ of the procedure itself, while patients instead tend to make judgments based on the FQ of the service—their experience with the people and systems in the health care setting associated with the performance of the procedure. Thus, surgeons and patients rate quality in different ways. FQ is measureable and a number of useful survey instruments exist for this purpose. Overwhelmingly, these show that patients highly value empathy, compassionate care, and communication. TQ, surprisingly, is not always the sole or most important determinant of patient satisfaction. By understanding the issues that patients value highly, surgeons can improve the FQ of their services. This is relevant since patients use their assessment of FQ to infer a judgment about the surgeon’s TQ. Improved FQ has been shown to lead to patient satisfaction, willingness to recommend, positive word of mouth, and increased likelihood to return for future services. Improved patient satisfaction also secondarily leads to improved physician job-satisfaction ratings.

Elective surgery patients should be considered as consumers with choices. A specific service strategy to optimally serve these consumers should be carefully considered and implemented in each practice or health care setting. Plastic surgeons can use the concepts of FQ and TQ to understand what patients want and succeed in an increasingly crowded marketplace.

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