What attributes determine quality and satisfaction with health care delivery?

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Patient-based determinants of quality and satisfaction play an important role in choosing a health care provider. This study identifies five attributes of health care delivery that define patients' perceptions of quality and satisfaction. Managerial implications for diagnosing quality concerns of patients are discussed.

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As the United States moves toward a restructuring of its health care system, issues of quality have become increasingly important and consumer perceptions of quality will be a significant determinant of providers' survival and success. Satisfaction or dissatisfaction with quality on the part of employees or members of insurance pools will influence the decisions made by purchasers of health care services. In addition, quality concerns will shape other important decisions including which health care organizations will be invited to join health system networks and which health system networks will be chosen to serve members of employee or insurance pools.

While consumers and purchasers of health care are making decisions based on their perceptions of the quality of and satisfaction with providers, health care managers need to understand how consumers evaluate health services. If health care providers understand what attributes consumers use to judge health care quality, steps may be taken to monitor and enhance the performance on those attributes. The results will be higher levels of perceived quality and satisfaction on the part of the consumer.[1]

The contribution of this article is an investigation of what attributes determine patient evaluation of hospital services' quality and satisfaction. Two research streams on evaluative attributes have emerged. The first tradition, pioneered by Ware, Snyder, and Wright,[2] focused on the discovery of the attributes that determine patient satisfaction. The patient satisfaction research stream has served as the foundation for a large set of studies reviewed by Nelson.[3] Nelson studied the use of patient satisfaction surveys in quality improvement efforts in a sample of hospitals and health maintenance organizations (HMOs). His main conclusion was that in practice, some of the attributes that research suggests determine satisfaction have received insufficient attention and health care managers

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need to know what attributes patients use in evaluating health care providers.

The second stream of research is more recent and it has attempted to identify attributes employed by service users in the evaluation of services in terms of service quality and satisfaction.[4-6] A major objective of Parasuraman, Zeithaml, and Berry's[4-6] original effort was to discover attributes that were generic and would be relevant to services in general. This effort has become known as the SERVQUAL, "services quality," research stream, the acronym for the instrument that was developed to measure service quality dimensions that were posited to be antecedents of satisfaction.

A number of empirical tests of the SERVQUAL model in health care have been reported, however none have tested the fundamental question of whether the set of attributes that were originally developed for services outside of health care are sufficient for health care applications. The SERVQUAL dimensions do not include some attributes that have received considerable empirical support in the older "patient satisfaction" research stream. It is possible that as health care managers and researchers have embraced the SERVQUAL dimensions, some attributes that are important in determining patient evaluation of health services have been omitted. The major contribution of our effort was to test whether or not the dimensions used in SERVQUAL and the earlier patient satisfaction work comprehensively define patient evaluation of health care services or whether additional dimensions are also important.

BACKGROUND

The attributes that define service quality and satisfaction identified in the SERVQUAL effort included five attributes of quality: (1) Tangibles, (2) Reliability, (3) Responsiveness, (4) Assurance, and (5) Empathy. These five SERVQUAL attributes were statistically distilled from a list of 10 generic quality attributes from focus group interviews. The 10 attributes are (1) Tangibles, (2) Reliability, (3) Responsiveness, (4) Competency, (5) Courtesy, (6) Communication, (7) Credibility, (8) Security, (9) Access, and (10) Understanding. The five SERVQUAL attributes are thought to capture all of the original quality dimensions. The box entitled "Service Quality Dimensions" provides a detailed description of the quality attributes.

SERVQUAL has been tested in health care settings and the findings have been mixed.[1] Babakus and Mangold[7] reported that SERVQUAL demonstrated adequate reliability and validity. In another study, Babakus and Mangold determined that SERVQUAL "is reliable and valid in the hospital environment."[8(p.780)] O'Connor, Shewchuk, and Bowers[9] reported difficulties in translating the generic service quality dimensions into health care. They reported inadequate reliability with the Tangibles scale and found that the Reliability quality dimension was not a significant predictor of consumer satisfaction. Tests of SERVQUAL in other industries have also raised questions about its generalizability.[10,11]

A major drawback of the studies noted above is that only the determinants of service quality identified by Parasuraman, Zeithaml and Berry[4-6] were used to define patient-perceived service quality in health care settings. As a result, no evidence was obtained to learn if patients used additional or different dimensions of service quality.

RATIONALE FOR THIS STUDY

Carman[10] has argued that service-specific dimensions other than those in SERVQUAL may need to be added to completely capture the consumer's definition of service quality. The question becomes what dimensions of service quality are important for consumers of health care?

Two lines of evidence suggest that SERVQUAL may not completely cover dimensions of health care services that are important to patients. First, the nature of health care services, in terms of a higher and more intensive provider–consumer interaction is different from the services from which SERVQUAL was developed. Second, the patient satisfaction literature suggests additional dimensions beyond those found in SERVQUAL.[5,6] In order to explore the possibility that dimensions beyond those included in SERVQUAL are important in patient satisfaction, data were needed that identified hospital service quality dimensions and could be compared to the dimensions that Parasuraman, Zeithaml, and Berry[4-6] found. The data should also allow service quality dimensions beyond those proposed by Parasuraman,

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Service Quality Dimensions

SERVQUAL Dimensions*

Tangibles: Physical facilities, equipment, and appearance of personnel.

Reliability: Ability to perform the promised service dependably and accurately.

Responsiveness: Willingness to help customers and provide prompt service.

Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence.

Empathy: Caring, individualized attention the firm provides its customers.

Original Dimensions†

Assurance includes the following:

Competence means possession of the required skills and knowledge to perform the service. It involves

- knowledge and skill of the contact personnel;
- knowledge and skill of operational support personnel;
- research capability of the organization (e.g., securities brokerage firm).

Courtesy involves politeness, respect, consideration, and friendliness of contact personnel (including receptionists, telephone operators, etc.). It includes

- consideration for the consumer's property (e.g., no muddy shoes on the carpet);
- clean and neat appearance of public contact personnel.

Communication means keeping customers informed in language they can understand and listening to them. It may mean that the company has to adjust its language for different consumers—increasing the level of sophistication with a well-educated customer and speaking simply and plainly with a novice. It involves

- explaining the service itself;
- explaining how much the service will cost;
- explaining the tradeoffs between service and cost;
- assuring the consumer that a problem will be handled.

Credibility involves trustworthiness, believability, and honesty. It involves having the customer's best interest at heart. Contributing to credibility is

- company name;
- company reputation;
- personal characteristics of the contact personnel;
- the degree of hard sell involved in interactions with the customer.

Security is the freedom from danger, risk, or doubt. It involves

- physical safety (Will I get mugged at the automatic teller machine?);
- financial security (Does the company know where my stock certificate is?);
- confidentiality (Are my dealings with the company private?).

Empathy includes the following:

Access involves approachability and ease of contact. It means

- the service is easily accessible by telephone (lines are not busy and they do not put you on hold);
- waiting time to receive service (e.g., at a bank) is not extensive;
- convenient hours of operation;
- convenient location of service facility.

Understanding/Knowing the customer involves making the effort to understand the customer's needs. It involves

- learning the customer's specific requirements;
- providing individualized attention;
- recognizing the regular customer.

* Adapted from Parasuraman, Zeithaml, and Berry.[6]

† The original 10 dimensions also included Tangibles, Reliability, and Responsiveness.

Zeithaml, and Berry[4-6] to surface if these dimensions were important to consumers of hospital health care. Two data sets were utilized: (1) a qualitative, focus group analysis of hospital patient satisfaction, which made it possible to discover new health care dimensions; and (2) a survey of hospital patient satisfaction using the Ware, Snyder, and Wright (WSW)[2] instrument to see if attributes that are similar to SERVQUAL, as well as additional attributes, are related to satisfaction.

RESULTS AND DISCUSSION OF THE QUALITATIVE RESEARCH

Recall that the purpose of this project was to address two questions: (1) Do the generic dimensions of service quality and satisfaction, identified by Parasuraman, Zeithaml, and Berry, emerge in hospital care? and (2) Does hospital care involve additional dimensions beyond the 10 generic elements or the 5 SERVQUAL dimensions? The essential steps in the qualitative methodology were to conduct focus group interviews in a hospital setting, categorize the content of the interviews in terms of both the generic quality dimensions as well as any additional dimensions that emerged, and test for intercoder reliability.

QUALITY DIMENSIONS FOUND COMPARED TO GENERIC QUALITY DIMENSIONS

Table 1 shows how often patients mentioned sources of satisfaction that correspond with the 10 original dimensions of quality identified by Parasuraman, Zeithaml, and Berry,[4] as well as some additional dimensions. Each of the 10 dimensions was found in the patients' discussion of their hospital care.

The additional dimensions represent aspects of service quality that did not appear to be captured by the generic quality dimensions and two major categories emerged: (1) caring on the part of physicians and nurses, and (2) patient outcomes. The items placed in the Caring category went beyond conceptions of courtesy, communication, responsiveness, or understanding the customer. The dimension of Caring implies a personal, human involvement in the service situation, with emotions approaching love for the patient. The dimension of Outcomes reflected relief from pain, saving of life, or anger or disappointment with life after medical intervention. In summary, the quality dimensions found in a teaching hospital include the 10 generic quality dimensions as well as two additional elements.

TABLE 1

THE FREQUENCY OF PATIENT-DETERMINED SOURCES OF SATISFACTION RELATED TO THE 10 DIMENSIONS OF SERVICE QUALITY

Dimension of service quality	Number of times cited by patients
Tangibles	44
Communication	33
Competence	32
Access	23
Courtesy	18
Understanding or knowing the customer	19
Responsiveness	14
Reliability	11
Security	7
Credibility	3
Items not allocated to the 10 dimensions	23

QUANTITATIVE ANALYSIS OF PATIENT SATISFACTION AND QUALITY DIMENSIONS

The basic finding of the focus group research was that patient satisfaction was related to 12 dimensions, Outcomes and Caring plus the original 10 dimensions identified by Parasuraman, Zeithaml, and Berry[4] (see Table 2). The WSW[2] instrument provided a measure of the 12 dimensions of interest and one of the authors had conducted a survey of hospital patients that included WSW and a measure of global satisfaction. The survey made it possible to compare the various sets of dimensions as predictors of global satisfaction.

Sample and instrument

The data were gathered from patients attending an Army hospital in the Southeast. Patients were recruited for the study at the main entrance of the hospital. The participating patients were recruited from all patients arriving at the hospital on two separate occasions. Six hundred and forty-four questionnaires were mailed to the patients who had agreed to participate. Three hundred and eight questionnaires were returned. Ten questionnaires were not usable. Therefore, the study sample was composed of 298 respondents, a 46.3 percent response rate.

The instrument used to collect patients' perceptions of quality was an adaptation of the WSW[2] questionnaire. This instrument has undergone various tests of

TABLE 2

PATIENT SERVICE QUALITY DIMENSIONS

	FOCUS GROUPS	
This study	**SERVQUAL**	**Nelson[3] or Ware, et al.[2]**
Tangibles	Tangibles	Ambiance, amenities*
Communication	Omitted	Doctor, patient communication†
Competence	Omitted	Physician competence†
Access	Empathy	Access*
Courtesy	Assurance	Physician courtesy†
Understanding or knowing customer	Empathy	Interpersonal skills†,‡
Responsiveness	Responsiveness of nursing staff†,§	
Reliability	Reliability	Payment*
Security	Obscured	Doctors are careful‖
Credibility	Assurance	Doctors honor patient interest‖
Outcomes	Omitted	Outcomes†
Caring	Omitted	Bedside manner†,‡

* Nelson appendix.
† Nelson text.
‡ Warmth, friendliness, bedside manner.
§ Prompt answers to call buttons, support.
‖ Ware, Snyder, and Wright.[2] Questions on doctors taking notes, being careful.

validity and reliability and is widely used in health care.[3] Questions in the WSW Scale address the same dimensions as found in the original 10 dimensions underlying the SERVQUAL research, as well as the 2 additional dimensions of Caring and Outcomes (Table 2). Correlations among the predictor variables were below .65, which suggest that multicolinearity did not create a problem in the analysis.[12]

Results

Some interesting results emerged from a regression of the 12 dimensions of health care quality on a global measure of satisfaction (see Table 3). Caring, a specific health care quality dimension found in the qualitative research, is found to be a significant predictor of patient satisfaction ($b = .12$, $p = .03$), while Tangibles, a SERVQUAL dimension, is not ($b = .06$, $p = .17$).

Several items that should be captured in the SERVQUAL dimension of Assurance are not significant predictors: Competence ($b = .04$, $p = .45$), Courtesy ($b = .05$, $p = .37$), Credence ($b = .09$, $p = .13$), and Security ($b = .02$, $p = .61$). Communication, a dimension we found omitted from SERVQUAL in the qualitative research, was a significant predictor of patient satisfaction ($b = .16$, $p = .00$).

The SERVQUAL dimension of Reliability was a significant predictor of patient satisfaction ($b = .08$, $p = .05$), as were the underlying dimensions of the SERVQUAL variable Empathy, (Accessibility, $b = .15$, $p = .00$; Knowing the Patient, $b = .11$, $p = .04$). Responsiveness, also a SERVQUAL dimension, was a significant predictor ($b = .11$, $p = .02$). The specific health care quality dimension, Outcome, identified in the qualitative research, was not a significant predictor ($b = .07$, $p = .22$)

A second regression was run on the global measure of satisfaction, using only those variables found to be significant in the first regression (Table 4). The variance explained in the two regression models are not significantly different (Table 4, 1st Regression, $R^2 = .54$; Table 4, 2nd Regression, $R^2 = .52$). The five variables used in the second regression are all significant predictors of patient satisfaction (with $p = >.01$).

DISCUSSION OF THE QUANTITATIVE RESEARCH RESULTS

The results from the quantitative analysis lend support to the qualitative conclusions. Caring, a quality dimension specific to health care, was found to be sig-

TABLE 3

REGRESSION OF 12 INDICATORS OF HEALTH CARE QUALITY ON A GLOBAL SATISFACTION MEASURE*

Adjusted $R^2 = .54$ $F = 29.54$ $p = .00$
Standard error = .67

Variable	Beta	Sig. T
Caring	.14	.00
Security	.02	.61
Reliability	.08	.05
Accessibility	.15	.00
Responsiveness	.11	.02
Tangibles	.06	.17
Credence	.09	.13
Competence	.04	.45
Communication	.16	.00
Knowing patient	.11	.04
Courtesy	.05	.37
Outcomes	.07	.22

*The 10 original dimensions of SERVQUAL and the 2 additional dimensions of health care quality.

TABLE 4

REGRESSION OF FIVE INDICATORS OF HEALTH CARE QUALITY ON A GLOBAL SATISFACTION MEASURE*

Adjusted $R^2 = .52$ $F = 66.40$ $p = .00$
Standard error = .68

Variable	Beta	Sig. T
Empathy	.31	.00
Reliability	.10	.01
Responsiveness	.15	.00
Communication	.25	.00
Caring	.17	.00

*The five quality dimensions significant in the first regression.

nificant. Communication, a quality dimension omitted from the final version of SERVQUAL, was also found to be significant. Three of the generic SERVQUAL dimensions were found to relate significantly to patient satisfaction [(1) Empathy, (2) Responsiveness, and (3) Reliability].

The purpose of this study was to determine the attributes that consumers use to evaluate health care services. Elements of the generic SERVQUAL dimensions are found in health care, but they do not completely define the construct of health care quality. Other dimensions such as Caring must be included as well. Communication between patient and caregiver is important in determining satisfaction with health care, but it is not captured in SERVQUAL.

CONCLUSION AND IMPLICATIONS

Recent research suggests that "increases in patient ratings of quality will, in the long run, lead to increased financial returns."[13(p.12)] Other factors such as patients' membership in HMOs/PPOs certainly influence the acquisition of health care. Still, patient satisfaction with quality is an important, managerially controllable variable affecting financial performance.

The importance and personal nature of health care encourages patients to seek the highest possible quality. Consumers and purchasers of health services are typically not capable of assessing the technical quality of care they receive. Because of this lack of ability to assess technical quality, consumers and purchasers utilize quality attributes associated with the delivery of health care. Results from this study suggest that patients define health care quality in terms of empathy, reliability, responsiveness, communication, and caring. These are human dimensions related to how the health care service was delivered, not the technical competence of the provider.

In order to manage consumer perceptions of quality in health care, administrators should focus on the human components of delivery. Steps should include:

- Determining the specific attributes of quality employed by each institution's customers to judge quality and attempt to prioritize these attributes.[14] The attributes contained in the WSW instrument have been found in a number of other hospital settings.[3] These

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attributes provide a valid and reliable base from which an investigation into quality dimensions for a specific organization might begin. In our study of the Army hospital, five of the attributes were most salient. Health care administrators are advised to determine which attributes are most important for their institutions. The methods of qualitative and quantitative research employed in this article to identify relevant attributes may serve as a model.

- Establishing a means by which these attributes may be measured. This includes developing instruments to tap the opinions of the customer. Modification of the SERVQUAL or WSW would provide a valid starting point for scale development.
- Developing operational definitions and specifying levels of appropriate performance. As an example, an operational definition of responsiveness might include answering the phone with an appropriate level of response defined as the phone call being answered within five rings.
- Incorporating the delivery of quality dimensions into job descriptions, evaluations, and compensation structures.
- Managing customer expectations concerning level of performance. High expectations may be the precursors to poor quality judgments. Lowering customer expectations to realistically providable levels should raise quality perceptions. Remember, communication is an important determinant of health care quality.

As demonstrated in this study, the measurement of these patient-based quality dimensions is relatively straightforward. Consistent monitoring of these dimensions should allow administrators to learn of current quality perceptions and identify specific problem areas.

Technical competence will always provide the baseline standard of quality, but it is important to recognize the patients' and the purchasers' perspective. Strict attention to the provision of technical quality will result in consumer complaints of tardy, unresponsive, and uncaring service. The result will be a decline in volume and difficulty in attracting new patient groups. Providers who satisfy consumer quality perceptions will secure an important competitive advantage.

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