

AN INCLUSIVE MODEL FOR ASSESSING THE QUALITY OF SERVICE IN PUBLIC SECTOR TERTIARY HOSPITALS

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***Abstract.** Quality has taken central stage in contemporary organizations and is one of the key areas of competition. Healthcare organizations, in particular, strive to provide better quality services to their patients in order to gain competitive advantage. Researchers and academicians have yet to agree on how to define and measure quality of service. Attempts have been made to develop standards and measurements to determine the degree of quality of services. However, the literature does not contain a model or standards to measure the quality of health care services. The paper in question presents an inclusive model to measure the quality of service of healthcare organizations. In addition to healthcare services (cure and care) the model encompasses teaching aspect of hospitals as well. This model was developed on the basis of an in-depth and careful study of a large (2400 bedded) public sector teaching hospital spread over a period of two years. Data was collected from 400 patients, 250 employees, 200 general public, and 250 students through questionnaire followed by in-depth interviews. In addition to all this, various processes and interactions among individuals in the hospital were closely observed. Hospital records were studied. Anything that possibly could contribute to the quality of service in hospital was placed under one of the three dimensions of the model. Since the model has been inductively developed through data triangulation, it can safely be used to measure the quality of health care services with a good deal of accuracy*

Keywords: Quality of Service, Inclusive Model, Healthcare

Introduction

Since 1990s many service companies have specifically focused on quality as a differentiation strategy to enhance effectiveness and have achieved competitive advantage in the market. Quality of services has been found a significant research over the previous three decades. Literature is significant

with research concentrating on assessing the quality of service and quality in general (Cronin & Taylor, 1992; Squires, Chilcott, Akehurst, Burr, & Kelly, 2016; Habek & Wolnaik, 2016; Zeithaml, Parasuraman, & Berry, 1990). The two main issues taken up by most researchers include: a) what are the aspects of quality that customers focus on in assessing the quality of service, and (b) how is quality of service as perceived by customers, measured? (Abnori, Ghani, Yadav, Daher, & Su, 2010).

However, in present times, scholars have pointed out that the present day customers live in an “experience economy” (Pine & Gilmore, 1998) and what matter to customer are their long-term general experience with a service. Though researchers have tried to conceptualize the “total experience” of customers with respect to quality of service, the exact dimension that customers value are still lacking. There are two major streams of thoughts on assessing service quality (Kang, James, & Alexandris, 2002): European perspective and US perspective. The researchers usually adopt one of the two conceptualizations in their research (Brady & Cronin, 2001). The emphasis on functional quality attributes is mentioned as the American perspective of quality of service while additional aspects other than the process of service delivery are considered as the European perspective. Grönroos, for instance, the quality of a service as in the eyes of customers comprises of three dimensions: technical (the outcomes produced by the service), functional (how the service is delivered to customers), and image (the reputation of the service delivery organization.) (Gronroos, 1984). Considering these aspects, the service quality is contingent upon two factors: “the expected service and the perceived service”.

The quality of service from the Functional aspect is generally measured through customer surveys. The process of identifying customers’ attitude towards quality begins with defining quality dimensions (Hayes, 1997). In a seminal study, Parasuraman et al. (1985) identified ten aspects of quality with the help of focus group discussions. From this study, the researchers concluded that the customers use the same standards to measure service quality independent of the type of service.

The model designed in this study covers all the processes created by teaching hospitals which are aimed at meeting patients’ demands. This model comprises of three dimensions—teaching, caring and curing. The model in hand has three distinct characteristics. Firstly, the model presents curing and caring as two different dimensions of healthcare services. After careful observation and interviews it has become clear that curing is primarily addressing patient’s disorder to bring the patient back to the normal conditions.

Thus curing is the central and primary activity produced by healthcare organizations. While caring involves enabling patients feel comfortable through the process of curing. Secondly, the study identifies some cure/care elements such as accuracy of diagnostic services, preventable medical errors, medical advice, medicines quality, providing care by relatives or attendants, satisfaction of attendants, free of cost provision of meal and medicines that profoundly affect quality of services produced by healthcare organizations. These factors have not been highlighted in previous studies as such. Thirdly, these three dimensions, curing, caring and teaching, are operationalized on the basis of how patients, attendants, and students make perception of various aspects of quality. Therefore, the model in hand can readily be used to assess the quality of services teaching hospitals.

Healthcare Quality Service

Competition between the service and industrial sectors has also generated a competitive environment among organizations involved in healthcare services. This competitive environment demands that better service quality is the only means of acquiring sustained competitive position (Lim & Tang, 2000). So, service quality has been the only factor that helps customers to distinguish between what services/products are acceptable and what are not. Keeping this in mind, healthcare organizations have also become conscience about competitive advantage by maintaining its service quality and have started efforts to win patient satisfaction which is a determining factor in their success in the market. Previous studies showed that organizations providing high quality of services are successful in achieving customer satisfaction, making organizational image, reducing cost and enhancing their profit (Kang, James, & Alexandris, 2002; Yoon & Suh, 2004).

In healthcare organizations, quality of service and patients satisfaction have continuously being getting much attention and been now part of their strategic planning. Perception of patient about the quality of services provided by a particular healthcare organization also effects the profitability and image of the healthcare organization (Donabedian, 1980; Williams & Calnan, 1991) and it also considerably affects the behavior of a patient in terms of their word-of-mouth and loyalty (Andaleeb, Service quality perceptions and patient satisfaction: A study of hospitals in a developing country, 2001). In addition, increased patients' expectations concerning the service quality have sensitized the healthcare service givers, to pinpoint the key factors that are essential to improve healthcare services that lead to patient satisfaction. This concern helps healthcare service givers to reduce resources involved in managing patient's complaints (Pakdil & Harwood, 2005).

To measure the quality of healthcare services, the SERVQUAL instrument designed by Parasuraman et al. consisted of 22-items signifying five dimensions had been extensively used in healthcare (Parasuraman, Zeithaml, & Berry, A conceptual model of services quality and its implication for future research, 1985). In the extant literature 'SERVQUAL' is considered as the most reliable and valid measurement of perceived quality of service (Kilbourne, Duffy, Duffy, & Giarchi, 2004; Wong, 2002). Customer's (patient) perception and the key factors that reflect the service quality parameters play an important role in patient's choice of choosing a healthcare service or availing services in terms of clinical treatment (Lim & Tang, 2000). The customer described experience concept is formative by nature because it takes into account various factors of perceived quality of healthcare services like clinicians and nursing service, information, examination, organization, hospital, and equipment (Bjertnaes, Sjetne, & Iversen, 2012). Patient doctor relationship is positively linked with quality of healthcare services (Raposo, Alves, & Durate, 2009). To attain excellence in service delivery, hospitals have to struggle for zero detection and retain each patient to gain profitability. However, this needs continuous struggles for service quality enhancement (Lim & Tang, 2000). Anbori et al. developed a six dimensional instrument to assess perceived quality of healthcare services in Yemen (Abnori, Ghani, Yadav, Daher, & Su, 2010). The outsourcing of healthcare services mainly primary healthcare services has resulted significantly improved certain aspects of quality and this approach is likely to achieve an efficient and equitable healthcare provision in developing countries (Tanzil, Zahidie, Ahsan, Kazi, & Shaikh, 2014).

Initially, it was found difficult to define and implement any theory about quality in healthcare system (Ilia, Panagiotis, & Pandelis, 2007). Academic suggestions are favoring the development of standards which could be measured and could be instrumental in improving the outcome. At the same time affecting quality systems in large organizations like hospitals is considered a multifaceted networks (Blanas, 2003). This has made the task very daunting for the service providers. However, there are special technical principles and rules of TQM which can be implemented in the sector of healthcare services. For example, patient satisfaction cannot be measured by how much times he/she will return in hospital, but it is likely to be measured by how much times he/she will return for reasons that are related with a medical problem that he/she has faced in the past.

A Critical View of the Existing Models

Different models have been designed to assess service quality. Some of the general quality models, with focus on their key features, are summarized in the tables (1 and 2) below:

Table 1 *Models for Assessing Quality of Services (Countrywide)*

Studies	Countries	Dimensions of quality of service
Parasuraman et al. (1985)	USA	Reliability, Courtesy, Communication, Security, Credibility, Tangibility, Understanding, Access, Responsiveness.
Reidenbach and Smallwood (1990)	USA	Empathy, Physical presence, Patient confidence, Waiting times, Support services, Business aspect
Tomes and Ng (1995)	UK	Understanding of illness, Physical environment, Religious needs, Empathy, Food, Dignity.
Andaleeb(1998)	USA	Cost, Facilities, Communication, Customer satisfaction, Managerial model. Customer satisfaction.
Gross & Nirel (1998)	Ireland	Structure, Interpersonal relations, Accessibility, Food, Responsiveness
Ovretveit(2000)	Sweden	Professionalism, Client quality, Management quality
Carman (2000)	USA	Nursing care, Accommodation, Food, Noise, Room Temperature, Physician Care, Cleanliness, Privacy, Parking
Hasin et al. (2001)	Thailand	Courtesy, Responsiveness, Communication, Cleanliness, Cost
Camilleri and O'Callaghan (1998)	Malta	Technical care, professionalism, service personalization, environment, price, patient amenities, catering
Walters and Jones (2001)	New Zealand	Performance, Security, Convenience, Economy, Aesthetics, Reliability,
Cunningham (1991)	USA	Patient driven cure, Economy drive quality, Clinical quality

Some of the models, specifically dealing with quality assessment in healthcare service, are given below:

Table 2 *Models for Assessing Quality of Services (Quality Dimension)*

Study	Quality Dimension
Cho et al. (2004)	Physician concern, Convenience, Staff concern, Tangibles
Alden et al. (2004)	Access to service, Staff expertise, Tangibles, Personal care
McCarthy et al. (2005)	Effectiveness, Information, Assurance, Post-care advice, Clear diagnosis,
Kilbourne et al. (2004)	Reliability, Empathy, Tangibles, Response.
Gabbott and Hogg (1995)	Credibility of physician, Empathy, Range of services, Responsiveness, Situational factors, Access
Lee et al. (2000)	Empathy, Responsiveness, Core medical care, Reliability, Professional skill
Jun et al. (1998)	Courtesy, Communication, Tangibles, Reliability, Competences, Access, Understanding, Clinical outcome, Responsiveness, Collaboration
Wisniewski and Wisniewski (2005)	Responsiveness, Assurances, Reliability, Tangibles, Empathy
Taylor (1994)	Post-service perception
Dean (1999)	Tangibles, Responsiveness, Assurance, Reliability
U.S. Department of Health and Human Services (2009)	Waiting times, Information, Courtesy and respect, Communication, Care

From the tables (1 and 2), it is clear that quality takes on different meaning depending on the nature of service being provided. Attempts have been made to design mechanisms to measure quality of service meaningfully and with a considerable level of validity. However, theories and models designed to assess the service quality in the service industries are imported to the field of healthcare. For instance, SERVQUAL model developed by Parasuraman et al. (1985 & 1988) that is a generic model to measure quality of service based on the perception of consumer, is used to measure the quality of service in healthcare systems by various researchers (Andaleeb, Service quality perceptions and patient satisfaction: A study of hospitals in a developing country, 2001; Hassin, Seeluangwawar, & Shareef, 2001). Other studies, for example, Gross and Nirel, Walter and Jones assessed quality of service in hospitals on more or less similar dimensions (Gross & Nirel, Quality of care and patient satisfaction in budget-holding clinics, 1998; Walters & Jones, 2001). These researches mainly focused on subjective and humanistic aspects of service quality taking patients' perception as the dominant indicator to assess the quality. On the other hand, researchers like Carman and Ovreteit

included clinical, professional and technical dimensions to encompass the objective or mechanistic aspect of the service along with subjective or caring aspect (Carman, 2000; Ovretveit, 2000). As many as 19 models are significant in the literature while SERVQUAL model developed by Parasuraman et al. being dominant. Each of the models has been criticized on different grounds and even SERVQUAL model has been subjected to critical analysis.

In order to make sure that quality models reflect the true state of affairs with respect to various aspects of quality, it is necessary to have respondents who fulfill certain conditions. A customer must possess the following characteristics to provide reliable and valid data for constructing quality assessment model in healthcare:

- a) A customer must have complete information about the service and about the available substitute in the market. Majority of the patients do not know the process of treatment or the efforts and knowhow put in by the care givers or the technology and the equipment used in the course of his/her treatment.
- b) A customer should be mentally sane to understand and differentiate what is good and what is bad, what is useful and what is harmful etc. There are mental hospitals or psychiatry units in hospitals where mentally retarded patients are treated. They cannot understand the nature of the service provided to them.
- c) A customer should not be a minor and must have achieved the age of majority. Children constitute large portion of the customers of a healthcare organization. Children units are highly vigilant units of a hospital. Children and neonatal are provided intensive care while they do not know how they are treated and what quality the service possesses that is provided to them.
- d) A customer must be in a normal condition and should not experience anxiety or depression while receiving the service. Patients enter into a hospital in a state of anxiety and depression need not to be included in quality studies because under such conditions patients and their caretakers demand prompt treatment and immediate recovery when treatment and recovery require longer time. Thus under such conditions patients demonstrate their undue dissatisfaction.
- e) A customer should be in complete senses while receiving the service. Surgery is one of the major acts of treatment. It is observed that 70% indoor patients undergo surgery. Surgery is a complex and highly sophisticated performance carried out by the highly knowledgeable personnel of a hospital. A patient is made completely senseless under anesthesia prior to provision of the services. When the surgery is completed from all respects thereafter the patients is brought back to

his/her senses. On the other hand Operation Theater is the place where no one except surgeons and technical staffs is allowed to enter.

- f) A customer must have realistic expectations. Sometimes customers place unreasonable expectations on service organization. Generally patients and their caretakers come to the hospital with great expectations which are not usually realized during the course of treatment. It is experienced that a number of patients left hospital against medical advice on the basis that their caretakers were not provided accommodation or they were exposed to long queues and they had to wait for their turn for a long period.
- g) A customer should be competent enough to understand the technical aspects of the services. Patients are mostly illiterate or have no knowledge of hospital and treatment procedures.

Based on the above mentioned observed facts a patient cannot be the sole judge of the quality. Majority of the patients may not fulfill the conditions required to be a good judge of the quality of a given service. Although all the services provided in a hospital are meant for patients and it is reasonable to seek the opinion of patient about the quality of the services, however, to leave the entire decision on patient will be misleading. Thus collection of data from other stakeholders is also required to arrive at correct findings.

The aim of attaining customer satisfaction is to attract more and more patients to earn more and more revenue. This will be true in case of private sector healthcare organizations and profit seeking hospitals. The aim of public sector hospitals is not to attract more and more customers but it is their social responsibility to provide healthcare services with acceptable quality. In public sectors hospitals particularly in developing countries there has always been heavy load of patients and public hospitals are always under heaving workload. The work overload sometimes jeopardizes level of quality of the service they provide. Due to huge quantity of patients and heavy workload patients have to wait for their turn for treatment for considerably longer time and the late delivery of service causes dissatisfaction in the minds of patients.

Most of the models are developed to measure service quality across service sector uniformly. These models are being applied to assess quality of healthcare services without amending them. A healthcare system, by nature, is not same as other service industries. Healthcare services are basic needs and cannot be compromised as such. These services are mostly used inside the hospitals in the presence of healthcare service providers. The patients come to hospitals to avail healthcare services in a condition of high anxiety. Each patient demands different kind of service from the hospital. Different units of a

hospital provide different kind of healthcare services to different patients. That is why the structure of each unit or department, technology, training of employees and other materials used are different from each other. Therefore, the operational definition of service quality and selection of service quality indicators diverge from department to department even inside a particular hospital. For instance, death rates in oncology and cardiology departments are high as compared to orthopedic and eye department. We cannot conclude, on the basis of this indicator, that the service quality of cardiology and oncology departments is inferior as compared to eye and orthopedic departments.

The available models have no provision to accommodate teaching services and its quality along with treatment services. These models are mostly used to assess quality of services in non-teaching hospital. Teaching hospital, apart from providing tertiary level treatment, it teaches medical students at different levels including undergraduates and postgraduates. Therefore, the principal concern of a teaching hospital is to teach medical students, which is totally different from medical treatment. Teaching activities happen almost in all the departments of a teaching hospital where patients are treated for their ailments. These models do not explain how teaching and training activities are performed at different units, how it complements curing and caring aspects and address student requirements.

These models mainly emphasize on caring aspect while assigning less emphasis on curing aspect of the service. Patient's need (cure) is the fundamental issue while the comfort (care) which patients' want is secondary to cure. Patients enter into a healthcare system to get rid of illness, to be rehabilitated, to control pain, and to come back to normal life. The provision of accurate and timely cure is the fundamental objective of a healthcare system and treating them in a pleasant and friendly manner in a cordial environment should come later. Therefore, it would be unjust to give more importance to caring aspect rather than curing aspect.

The given models, generic and universal in nature, are used and can be useful for profit oriented hospitals. They seem to be insensitive to their context. The configuration of hospitals differs from culture to culture, place to place, and country to country. For instance, in many advanced countries the main purpose of hospitals is to enhance their revenue by attracting more and more patients. Since hospitals are paid for each patient they serve, the higher the level of income the better quality of healthcare services will a hospital be able to deliver. Therefore, hospitals have been struggling to attract more and more patients. On the other hand in many countries like Pakistan, healthcare activities are financed from public resources and patients are provided almost free treatment. Public sector hospitals remain overloaded due to high inflow of

patients. Under such circumstances quality of treatment services is usually compromised. The work overload do not allow healthcare service providers to have enough time to focus on patients' illness, sufficient provision of drugs, least waiting time etc. resulting in lower quality of medical service. The absence of these services becomes a reason of patient dissatisfaction and sometimes it leads a patient to leave the hospital against medical advice. Patients demand free medicine and free meal as part of treatment, which majority of the public sector hospitals provide.

Methodology

The study in hand comes up with a holistic model that encompasses all the services that a teaching hospital provides. This model attempts to fill the lacunas which previous models could not address. The model does include patients in survey but does not depend entirely on the data collected from patients. The model is based on data collected from other stakeholders as well including healthcare givers, medical students and management personnel. The model includes the dimensions which are particular to healthcare sector services. It is a “grounded model” as it stems from real world data. An inductive approach has been employed with qualitative-cum-quantitative data collection mechanism. The design consisted of survey, observation and study of hospital records.

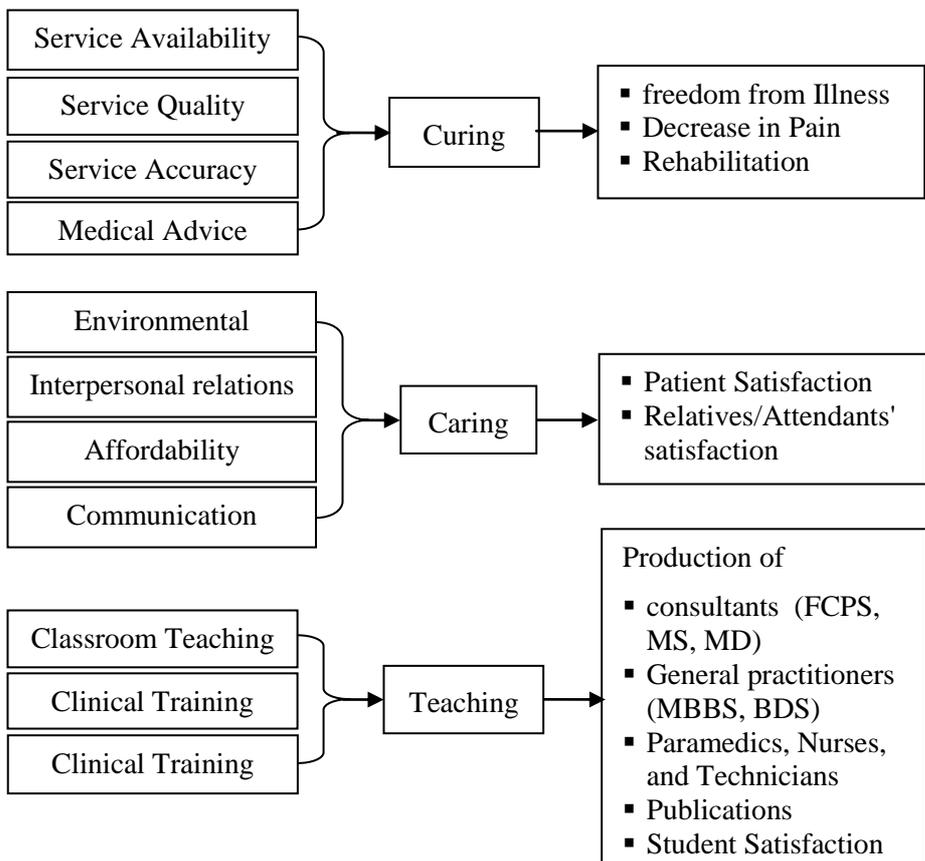
A large public sector tertiary hospital (2400 bedded) affiliated with a medical university was chosen for data collection. The hospital had 36 specialized departments and provides clinical and surgical facilities to graduate, postgraduate and doctoral medical students of the affiliated university. Data was collected through close ended questionnaire and interviews. In addition to this, data has also been collected through observation and of hospital records. 400 patients, 250 employees, 200 general public and 250 medical students were served with questionnaires followed by in-depth interviews. Data collected from different sources were matched to authenticate each other. Data gathered from all the sources about an activity were put to gather to verify their authenticity. Questionnaires were exposed to descriptive statistical analysis and qualitative data was narrated with along with the quantitative information. Three broad categories—cure, care and teaching—were made and all that contributed to the quality of healthcare were grouped into one of the three categories.

Healthcare Service Quality Measurement Model (the New Model)

In this study some additional variables were found that had not been highlighted by previous studies. Firstly, in the process of learning, the

possibility to commit preventable medical errors by the medical students is significant, which was found to be a substantial threat to the quality of hospital services. So the need to develop mechanism to prevent such errors is obvious. Secondly, accuracy of diagnostic reports determines the quality of healthcare service quite significantly. Sometimes clinicians become uncertain about the accuracy of hospital laboratory report and sometimes prefer laboratory reports of private diagnostic centers in terms of authenticity. Thus clinical regimen is based on diagnostic reports and a defective report will lead to inaccurate treatment. Thirdly, admitted patients as well as outpatients are usually cared by attendants. Therefore, provision of adequate information and accommodation to attendants improves the caring of patients.

New Model



Discussion and conclusion

The given model covers quality of service of a teaching hospital from three distinct dimensions. An institute of medical studies cannot achieve its primary objective of producing physicians and surgeons unless rigorous clinical training is provided to them. Patients are used as research and teaching materials by teachers and students. Therefore, a medical college/university needs the attachment of a well-functioning hospital to give clinical exposure to its students. Undergraduate students are exposed to three years clinical training by giving treatment to patients after their first two years theoretical training. The four and five years postgraduate programs are entirely clinical trainings in nature. Medical students are rotated to different units of the hospital and work under the supervision of respective professors of the wards. Thus students become familiar with diverse patients and diverse diseases. All the departments of the hospital are different in nature because of varying nature of patients. Therefore, each student needs to be acquainted with the varying kind of patients and diseases. Psychological therapy and medical ethics are also taught to students as part of their curricula. In this way medical students are taught by practically curing and caring patients coming to hospital for treatment. As a result students get training and patients get treatment.

Patients undergo different processes like outpatient or emergency department, inpatient department, diagnostic processes and surgery process to get rid of their pains. Healthcare service providers including medical university teachers, students, general practitioners, nurses and paramedics provide their services by using required technology to treat the patients. They are responsible to ensure correct diagnosis of the causes of illness, the accuracy of diagnostic services, quality medicines and equipment, and correct treatment decisions to bring the patients back to normal life.

Patients expect quality healthcare services to be available in a friendly and cordial manner, through a comfortable process, in a conducive environment and at an affordable cost. Discrimination in provision of healthcare service on the basis of gender, age and social and economic backgrounds will cost lives of patients. Patients satisfied with the overall response and environment of the hospital are more likely to follow treatment regimens and clinical advices. So patient satisfaction likely leads to early recovery from illness and reuse intention of these services.

So the study concluded that curing, caring and teaching are three distinct aspects of the services of a teaching hospital. These dimensions are closely linked with each other and at the same time complement each other. To improve the overall services of a teaching hospital, all the three dimensions

need to be paid considerable attention. Thus the model proposed by this study will help understand structure, functions and assess quality of service of teaching hospitals.

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