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Patient Satisfaction and Service Quality of Public Hospitals in Pakistan: An Empirical Assessment

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Abstract: Quality is one of the key parameter in order to measure the performance of a product or service and ultimately it referred to organizational performance. Customers are the key player, who played a significant role to measure the quality of the product or services. However, to measure the quality of services is quite difficult as compare to the product quality due to its intangible nature. This study is intended to investigate the level of quality of healthcare services delivered to patients by the public hospitals in Pakistan. Currently, healthcare system in Pakistan is comprised of public hospitals, healthcare units and dispensaries, which are not sufficient to meet the healthcare requirements of 169.9 million people. This study aims to investigate, quality of services delivered to patients by public hospitals in Pakistan. For this purpose, a questionnaire was developed based on modified 'SERVQUAL' using five service quality dimensions, namely; empathy, tangibles, timeliness, responsiveness and assurance. A total of 369 responses were collected from the patients availing services from the public hospitals located in Lahore, Pakistan. Data was analyzed using structural equation modeling technique (SEM) and results of this study indicate that public hospitals are not making visible efforts to deliver quality of services to their patients and are not making any visible efforts to meet patient's needs and wants.

Key words: Service Quality · Public Hospitals · Patient Satisfaction · Pakistan · Structural Equation Modeling (SEM)

INTRODUCTION

Quality has become an icon for both the manufacturer or service providers and the customers. During the last couple of decades, there is a rapid growth in the service sector around the globe. Service organizations like other manufacturing organizations are also focusing to deliver the services that meet customer needs in order to make their customer happy. Earlier studies on service quality provides evidence that there is a significant relationship between service quality and customer satisfaction [1-3] and benefited the firms in terms of retention of customers [4], gain customer loyalty [5], cost reduction[6], boost profitability [7, 8], service guarantees [9], financial performance [10] and competitive advantage.

Healthcares sector is considered to be the major service sector for a country as it plays a vital role to develop and maintain a healthy human capital to achieve national goals. In many countries around the globe, healthcare sector has also become a highly competitive and fast growing service industry [11]. Customers are the key evaluator that plays a significant role in measuring the quality of services or product. In healthcare sector customers are the patients and their perceptions are considered be the main indicator while assessing the service quality [12, 13]. Patient satisfactions are depending on their perceptions during the utilization of healthcare services [14-16]. On the other hand, it is also evident that hospitals are providing same type of services to their patients but are not able to deliver same quality of services [17]. Similarly andaleeb [18] expressed that patient's perception about the service quality of a healthcare organization helps to shape up their confidence and behavior for selecting a healthcare facility either from public or private hospital and patients avail this facility only as a measure of last alternative. To get relief, sometimes patients had to travel long distances within the country or sometimes to other countries to avail best healthcare services to such hospitals that provide them assurance, comforts and relief from sickness and injuries [11, 18].

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In developing countries, majority of the population is deprived of fundamental right, especially the un-availability of the basic healthcare facilities. Lack of government commitment towards the development of healthcare facilities could place adverse effects on other sectors of economy 'mean an ailing nation equates to an ailing economy' [19]. Therefore, to assure the quality of healthcare services delivered to the people requires strong government commitment and positive efforts by allocating sufficient budget for the growth and development of healthcare institutions.

According to statistics division of Pakistan (2010), the population of the country is 169.6 billion and Pakistan is the 6th largest populated country of the world and having highest growth rate. Therefore, to provide the healthcare facilities to this fastest growing population, it requires concurrent planning, developing strategies and allocation of sufficient budget by the government agencies to promote the healthcare system. In Pakistan, majority of the population is living in rural areas whereas a small proportion of the people are living in urban areas. In Pakistan, majority of the public hospitals are located in the urban areas and mostly are situated in big cities.

People living in the rural areas are unable to avail facilities from the hospitals and they are bound to avail facilities from the basic healthcare units and dispensaries. Due to lack of financial support, infrastructure, doctors, nurses, qualified supporting staff, labs and machinery, these healthcare units are unable to provide even the basic healthcare facilities to patients.

Due to this reason the patients have to travel long distances to gain hope, relief and the cheap healthcare facilities from the public hospitals. This also causes to overburden the public hospitals in big cities. In Pakistan, the total expenditures on the healthcare are still lowest as compare to the same income level countries in the region which was 0.54 percent during this year. Current healthcare facilities are given in Table 1.

Therefore, the objective of this study is to investigate the patient perceptions about the service quality of major public sector hospitals in Lahore, city of Pakistan.

Table 1: Healthcare Facilities

Health Manpower	2007-2008	2008-2009	2009-2011
Registered Doctors	128,093	133,984	139,555
Registered Dentists	8,215	9,013	9,822
Registered Nurses	62,651	65,387	69,313
Population per Doctor	1,245	1,212	1,183
Population per Dentist	1,9417	18,010	16,914
Population per Bed	1,544	1,575	1,592

Source: Ministry of Health Pakistan(2010-2011),

Literature Review: Services are intangible in nature and thus it is difficult to assess and measure as compare to the products as it is an elusive and abstract concept [20] and thus same for the service quality. Service quality can be defined as "conformance to customer specification" [21]. According to Gronroos [22], service quality is measured as technical and functional quality. According to Parasuraman, Zeithaml [23], service quality is the difference between customer perceptions and expectations. Whereas Zeithaml [24] believes that service quality is based on customer perception about the services delivered by the service provider and how these services meets or exceed their expectations and it is purely based on customer judgment. Expectations for the high quality of services had increased in the lives of the people due to increase of economic share of service sector in almost all the economies of the world and it has reached to half sum of Gross National Product's (GNP's) [12]. The key strategy for survival and success of any industry or any business is aimed to deliver superior quality of services to their customers [23, 24].

Servqual: Due to intangible in nature service quality is difficult to measure and defining the parameter to evaluate the quality of services delivered to the customer was the major issue in the beginning. The first service quality model was presented by Parasuraman, Zeithaml [23] and authors explored that customer perception about the service quality is influenced by 5 'gaps' and it is also known as 'gap' model. Gap 1 shows the difference between customer expectations and management perception of customer expectations. Gap 2 is the difference between management perceptions about service quality and service quality specifications. Gap 3 is the difference between service quality specifications and service quality delivery. Gap 4 is the difference between service delivery and external communication to customers and gap 5 is the difference between expected and perceived service quality.

SERVQUAL model is based on gap 5 that was influenced by first four gaps. Earlier, service quality was measured by comparing customer expectations with customer perceptions on the basis of ten dimensions which includes; reliability, tangibility, communication, security, credibility, competence, understanding, access, understanding/knowing customers, responsiveness [23]. Further this model was refined by Parasuraman, Berry [25] and service quality can be measured on the basis of five dimensions; reliability, tangible, responsiveness, assurance and empathy and these five dimensions were further assessed by 22 items.

- Empathy is about the individual attention and care provided to the customers by the service provider and its human resource.
- Tangible is about the physical facilities like infrastructure, labs, equipment and human resources involved in delivering the services.
- Assurance is about knowledge, skills and expertise of the employees involved in delivering services and the ability to create trust and confidence among the customers.
- Reliability is the ability to execute the promised services consistently and accurately.
- Responsiveness is the degree of willingness to help and facilitate the customers by providing prompt services to the customers.

A comprehensive literature review about the service quality was done by Seth, Deshmukh [26] and pointed out 20 service quality models to measure the service quality which includes: Gronroos [22] "technical and functional quality model", Cronin Jr and Taylor [12] "performance only model (SERVPERF)" and Parasuraman, Zeithaml [23]"Gap Model" are frequently found in the literature. However, among all these service quality models, SERVQUAL models was the only model that is frequently used in almost all type of service industries; like banks and credit cards companies [27], hospitality industry [28], airline industry [29], libraries [30] and healthcare sector [31-34]. It has been observed from the literature that SERVQUAL is also considered as most adoptable model in order to measure the service quality of healthcare sector [13, 18, 35].

On the basis of above discussion, the following null hypothesis were developed.

H_{11}: There is an association between empathy and patient satisfaction

H_{01}: There is a no association between empathy and patient satisfaction

H_{12}: There is a an association between assurance and patient satisfaction

H_{02}: There is a no association between assurance and patient satisfaction

H_{13}: There is a an association among responsiveness and patient satisfaction

H_{03}: There is a no association among responsiveness and patient satisfaction

H_{14}: There is an association among tangibles and patient satisfaction

H_{04}: There is a no association among tangibles and patient satisfaction

H_{15}: There is an association among timeliness and patient satisfaction

H_{05}: There is a no association among timeliness and patient satisfaction

Methodology: This study is aimed to measure the service quality of public hospitals based on patient's perceptions. Although SERVQUAL is one of the most popular instrument used to measure the service quality, however, this instrument was criticized from both the operational and conceptual perspectives [10]. Major criticism on this instrument was the usage of gap analysis; the difference between expectations and perceptions while measuring the service quality [13]. According to Cronin Jr and Taylor [13], comparison of expectation and perceptions gaps should be measured based only on customer perceptions and they named it SERVPERF. Cronin Jr and Taylor [13] stated that measuring the service quality based on perception is quite enough.

Therefore, a questionnaire was developed using modified SERVQUAL instrument in order to measure the quality of healthcare services delivered to patients by public hospitals in Pakistan solely on patient perceptions. This study includes five service quality dimensions; empathy, tangible, assurance, timeliness and responsiveness. A total of 22 items representing the five dimensions of service quality and are considered as constructs in order to obtained results through most advance data analysis technique structure equation modeling (SEM). This study was conducted in 2nd largest city, Lahore of Pakistan. The participant of this study was the patients who are availing services from these public hospitals and they are supported by their respective government originations. These respondents were working at officer's level and availing services from these public hospitals either for general consultation or inpatient. A total 500 questionnaire were distributed among the respondent and 369 questionnaires were received back and thus representing a very good response rate of 73.8%. Responses were evaluated on five point Likert scale from strongly agree [5] to strongly disagree [1]. Tables 2 and 3 provides the descriptive statistics of the study.

Table 2 shows the frequency distribution of the gender comprised of male and female. There were 369 participants in this study and 293 participants were male representing 79.4% of the total population and 76 participants were female representing 20.6% of the total population.

Table 2: Frequency Distribution of Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	293	79.4	79.4	79.4
	Female	76	20.6	20.6	100.0
	Total	369	100.0	100.0	

Table 3: Frequency Distribution of Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduate	80	21.7	21.7	21.7
	Master	289	78.3	78.3	100.0
	Total	369	100.0	100.0	

Table 3 shows the frequency distribution of qualification of the respondent. Out of 369 respondents, 21.7% of the respondents were graduates and the remaining 78.3% were having masters' degree.

RESULTS

Most frequently used statistical software SPSS 16.0 and Amos 16.0 for windows was used in order to evaluate the level of quality services delivered to patients. The five dimensions are considered as constructs. To measure the reliability of the SERVQUAL instrument used in this study, Cronbach Alpha was calculated. In empirical studies reliability and validity of the instrument plays a significant role while performing statistical analysis and it also helps to provides consistency in the results [36] and the Cronbach alpha helps to measure the reliability of the data[37] and acceptable values of Cronbach Alpha should be greater than 0.70 [38].

Cronbach Alpha for this study is 0.892 provides an acceptable values. Similarly, the values of measurement coefficient Cronbach Alpha of each of five constructs provide acceptable values which are greater than 0.80 in all cases. Cronbach Alpha for the construct empathy is (0.81), tangible (0.90), assurance (0.83), timeliness (0.79) and responsiveness also provides an acceptable value of Cronbach Alpha (0.87).

Table 4 provides the list of 22 variables used in this study representing five service quality constructs and the descriptive statistics of the each of these variables.

Figure 1 provides a comparison of mean value of the five constructs. Majority of the respondents believe that assurance level in the public hospitals is high as the public hospitals have employed most capable and expert

Table 4: Descriptive Statistics of the Service Quality Constructs

	Variables and Constructs	Mean	S.D
	Empathy (a =0.81)	2.5812	.70686
PBEMP1	Doctors have genuine concern about patients	2.6625	1.00243
PBEMP2	Doctor care their patients	2.6187	1.00234
PBEMP3	Staff and nurses care the patient	3.7125	1.00559
PBEMP4	provide comfort to patients	2.1812	1.05730
	Tangible ($\alpha=0.90$)	2.0094	.54729
PBTNG1	Hygienic conditions at hospital	3.7500	1.66519
PBTNG2	Waiting facilities for attendants and patients	2.4312	1.06766
PBTNG3	Healthy environment at hospital	2.4312	1.02560
PBTNG4	Cleanliness of toilets/bathrooms	2.9000	1.08853
PBTNG5	Cleanliness in wards/rooms (sheets, floor)	3.1938	1.12433
PBTNG6	Lab and pharmacy facilities within the hospital	3.1812	0.96345
	Assurance ($\alpha=0.83$)	3.1781	.67374
PBASS1	Doctor's expertise and skills	2.5062	0.98413
PBASS2	Thorough investigations of the patient	3.2250	1.01529
PBASS3	Doctors almost make right diagnoses	2.2750	1.03371
PBASS4	Doctors go for expert opinion in critical cases	2.8562	1.05119
PBASS5	Accuracy in lab reports	1.8250	0.90804
PBASS6	Special attention to emergency patients	2.2625	0.955488
	Timeliness ($\alpha=0.79$)	2.6146	.75286
PBTIM1	Patients are observed according to appointment	2.9062	1.00812
PBTIM2	In time delivery of reports/services	2.4375	1.07976
PBTIM3	Doctors/Staff observe the promised time	2.2375	0.87945
	Responsiveness (α =0.87)	2.3583	.68685
PBRES1	Doctors/staff efficiently respond to the patients	2.4062	0.92006
PBRES2	Doctors/Staff are willing to help/facilitate the patients	2.5312	0.97724
PBRES3	Feedback mechanism	2.5125	0.99044

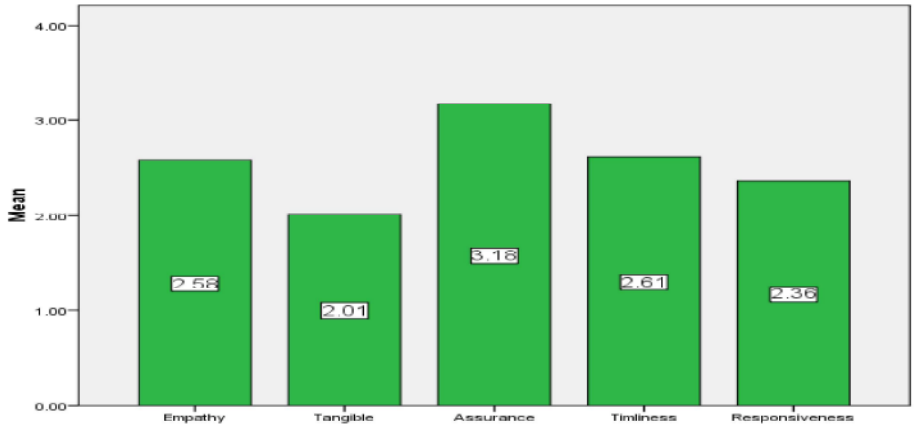

Fig. 1: Comparison of Mean

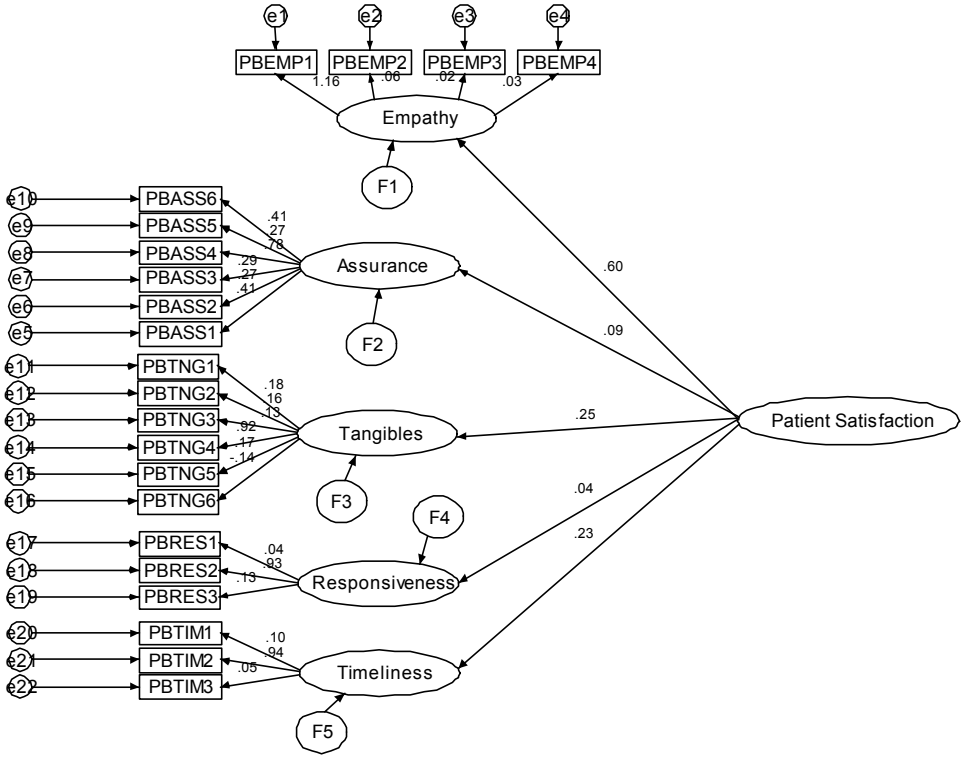

Fig. 2: Path Diagram for the Proposed Service Quality

in the field of medicines and surgery. These doctors are also serving in the teaching hospitals associated with these public hospitals. Patients are assured that they are availing best healthcare services from best doctors. Lowest mean value is 2.01 provides insights that majority of the respondent experienced that hygienic conditions, cleanliness both in the wards and toilets are not meeting the patient expectations.

The estimated path diagram for the proposed service quality of public hospitals and patient satisfaction is presented in the Figure 2. Boxes in the proposed service quality model represent the endogenous observed variables and the ovals in the model represent the related latent variables. The goodness of fit indexes of this model confirmed the validity of the proposed operational model. Value of the Chi-square is 594.79, degree of freedom is 209, p-value is 0.000, Normed-Chi-Square is 2.846, Goodness-of-Fit index (GFI) is 0.886, Comparative-Fit-index is 0.86, Root-Mean-Square-Error of Approximation (RMSEA) is 0.06 and all these parameters having values within the suitable range.

Table 5: Correlations among Service Quality Constructs

		Empathy	Tangible	Assurance	Timeliness	Responsiveness
Empathy	Pearson Correlation	1	.640**	.590**	.583**	.591**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	369	369	369	369	369
Tangible	Pearson Correlation	.640**	1	.557**	.624**	.517**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	369	369	369	369	369
Assurance	Pearson Correlation	.590**	.557**	1	.527**	.372**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	369	369	369	369	369
Timeliness	Pearson Correlation	.583**	.624**	.527**	1	.540**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	369	369	369	369	369
Responsiveness	Pearson Correlation	.591**	.517**	.372**	.540**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	369	369	369	369	369

**. Correlation is significant at the 0.01 level (2-tailed).

The above path diagram represented in Figure 2 shows that the entire service quality construct (latent variables) had a standardized regression weights less than 0.5 except empathy. First construct empathy shows that employees involved in hospital operation including doctors, nurses and management staff do not provide individual concern to the patient as the p-value for (empathy-patient satisfaction) is 0.3071 which is greater than 0.05. Therefore, our null hypothesis H_{01} is accepted. Similarly, the relationship among, tangibles and patient satisfaction has p-value 0.563 and thus accepting our null hypothesis H_{04}. Timeliness and patient satisfaction also has insignificant p-value 0.222 which also shows that our null hypothesis H_{05} is accepted. Only, assurance has a significant impact on patient satisfaction as the p-value is 0.02 shows that our hypothesis H_{12} is accepted and null hypothesis H_{02} is rejected. Major reason is that majority of the studied public hospital are associated with the medical college and highly qualified and well known professors are associated with these hospitals, so the patient hopes that they will be treated by best doctors.

Table 5 provides the correlation among the variables and it is observed that highest correlation occurs between the empathy and tangibles and lowest correlations are found among assurance and responsiveness. All the variables are significantly correlated with each other at 0.01 significance levels.

The above results showed that the highest correlation exists among the constructs empathy and tangibles which is 64.0%, showing that with the development of tangibles helps to create a healthy working environment. It helps to create motivation among the doctors and the other people involved in hospital operations and will be willing to provide individual attentions to the patients. This factor also helps to create satisfaction among the patients about the services delivered to them. It is also observed from the above table that the p-value between these two constructs is 0.000, so we can say that at 1% level of significant, the correlation between tangible and empathy is significant and the strongest correlation among these variables. The weakest correlation is responsiveness and assurance which is 37.2%. However, the correlation among all the service quality constructs is positive and the p-value among these variables is 0.000 indicating a significant correlation among them at 1% level of significant.

CONCLUSION

From the above results it shows that patient availing facilities from the public hospitals perceive that public hospitals are not making visible effort in order to deliver better quality of services to their patients. The studied service quality construct does not have a significant impact on patient satisfaction except assurance. It is also observed from this study that patient satisfaction is a latent exogenous variable, which is represented by five observed endogenous variables namely, ‘empathy’, ‘tangible’, ‘assurance’, ‘timeliness’ and ‘responsiveness’. Results of the five factors showed that the measurement model for service quality constructs had a good fit and the model is valid and reliable.

Major reasons for delivering the poor quality of the services to patients is that majority of the public hospitals are in the province Punjab of Pakistan which are located in big cities like, Lahore, Rawalpindi and Multan etc. The people living in the rural areas are lacking from the basic health facilities and whenever they have any health problem they have only opportunity to visit these public hospitals located in these big cities. Public hospitals are the only source for the patients, in Pakistan for availing cheap healthcare facilities. This also makes the public hospitals overcrowded and the management is unable to manage the large number of patients. This is the major reason that doctors and staff are unable to provide individual attentions to patients.

Hygienic conditions, cleanliness in the wards and in the hospital that makes the hospital environment healthy are also very poor in the public hospitals as the lower staff that is associated to maintain cleanliness is always waiting for the *bukhshish* from patient as mentioned by Andaleeb [18], as one dimension of service quality while studying the public hospitals of Bangladesh. The above results indicate that patients perceive that public hospitals in Lahore, the second largest city of Pakistan are not delivering quality of services to their patients. It is evident from the literature that public hospitals in Egypt are delivering poor quality of services to their patients as compare to private hospitals [39]. Similarly, another study conducted on this topic by Andaleeb [19], provides insights that private hospitals in Bangladesh are providing better healthcare services as compare to public hospitals and services of foreign hospitals are far better than public and private hospitals. Another study conducted by Yeşilada and Direktör [40], concluded that public hospitals seems to provide insignificant relationship with the service quality dimensions as compare to private hospitals in Turkey. These results also validate our study, that patients perceive that public hospitals in Pakistan are not delivering quality of healthcare services to the patients.

Major reason of this poor quality is due to lack of implementation of quality management systems in the healthcare sector. Total quality management (TQM) has been widely implemented as a strategic tool to gain competitive edge and Pakistan is still lagging behind to adopt TQM in almost all the sectors but public healthcare sector is among the most ignored sector [41]. Therefore, it is the need of hour that healthcare sector should adopt TQM philosophy to deliver superior quality of service to boost their service quality and gain customer satisfaction.

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