

How Do Patients Perceive and Expect Quality of Surgery, Diagnostics, and Emergency Services in Tertiary Care Hospitals? An Evidence of Gap Analysis From Pakistan

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ABSTRACT

Objectives: Service quality is one of the important gears to appraise services and determine the gray areas that need improvement. In countries with a resource-poor health system, the first step of measuring quality is yet to be taken. This study seeks to inform policy makers in developing contextual service quality models by identifying service quality gaps in tertiary care teaching hospitals using patients' perspective. **Methods:** A cross-sectional study was performed using multistage cluster sampling, and a modified version of the SERVQUAL (SERV-service, QUAL-quality) instrument was administered to determine patient's expectations and perceptions. A total of 817 completed questionnaires were obtained from patients and/or their attendants using convenience sampling. **Results:** Data analysis revealed statistically significant negative quality gaps between expectations and perceptions of tangibility, reliability, empathy, assurance, responsiveness, and communication. The difference in mean expectation and perception for responsiveness across the sexes was significant ($p < 0.003$; $p < 0.037$, respectively) as well as in perception of communication ($p < 0.026$). Other dimensions and overall hospital expected and perceived quality were independent of sex. Educational status showed significant difference in expectation and perception in responsiveness ($p < 0.005$), but the perception of each dimension was significantly different in different educational categories (assurance: $p < 0.001$; empathy: $p < 0.001$; reliability: $p < 0.001$; tangibility: $p < 0.001$; responsiveness: $p < 0.001$; communication: $p < 0.001$; and for overall service quality: $p < 0.001$). Age and service departments showed no relationship with any of the perceived or expected dimension of service quality of hospitals. **Conclusions:** Tertiary care hospitals failed to meet patients' expectations in all major areas of service quality, posing a question of how hospitals implement and evaluate their quality assurance policy.

Quality management and assessment is one of the pivotal instruments used to satisfy needs of customers within organizations. It can be achieved when there is compatibility between customer's expectations and perceptions especially in service providing organizations where services are intangible, insipirable, perishable, and heterogeneous.¹ However, health care services differ from other services because of vitality and criticality. The customer (patient) has

to surrender his/her confidentiality and cooperation with the health care provider during the encounter and afterward and is essential to make treatment successful.² Therefore, enquiring about patient's opinions give clues for improved service quality that may lead to the growth of an organization.³

Health care quality is an antecedent of consumer's satisfaction but is neglected area, and investigation in this field can effectively minimize the deterioration in health care delivery processes. Improvement in

these processes needs to focus on basic strategic goals for improving the quality of health care.^{4,5} Issues associated with health care quality systems are complex, and so are the solutions. The diversity of processes and procedures within and across each department makes the situation more challenging. Increasing the financial budget is not the only solution to a problem such as staff absenteeism, improper and inadequate patient care, and long waiting times. These are determinants that can be used to predict poor quality.⁶

Health care quality is meant for survival and to bring excellence in hospitals. It is the demand of all stakeholders (i.e., patients, health care providers, governments, regulators, and competitors). Excellent services can be used as a competitive strategic tool. Doctors, nurses, and other social workers agree that excellent quality provision in the hospital is directly linked with the positive signs on the patients' health and achieving desired patients' outcomes.¹ The relationship of total quality management (TQM) implementation with hospital performance is significant. If TQM is implemented in the hospital with commitment, then performance indicators of a hospital will gradually direct towards excellence.^{7,8} Excellence being a goal of every hospital will motivate and help hospitals commit their quality improvement strategies to provide an opportunity to improve hospital service quality, gaining competitive advantage, and satisfying patient needs and requirements.

Hospital service quality has been defined as: "degree and direction of discrepancy between patient's perceptions and expectations".⁹ Considering both expectations and perceptions of patients will provide a meaningful way to measure overall hospital service quality. Service quality of hospitals have been studied in two domains; technical and functional.¹⁰ The technical quality of health care services includes services in diagnosis, treatment, and procedures.¹¹ Functional quality is related to non-clinical aspects like attitude, behavior of staff during service provision, quality of food, and cleanliness, etc.¹² Lack of information about medical services in patients can only tell about the functionality of services rather than assessing technical services. Published evidence suggests measuring patient's perspective to assess hospital's functional quality.

Various tools are in use to measure functional quality. SERVQUAL (SERV-service, QUAL-

quality) is considered one of the most important and commonly used tool.¹³⁻¹⁵ It has been used in various studies to measure service quality at receiver's end. SERVQUAL has been applied to the health sector, particularly in the USA,¹⁶⁻¹⁸ with a positive response. There is also an evidence of SERVQUAL applied in health care settings in Malaysia, Australia, Hong Kong, and Malta,¹⁹⁻²¹ as well as other parts of Asia.^{13,22,23} Some criticism against SERVQUAL has been based on its instability,¹⁷ the problem of varied factors from sector to sector²⁴ and issues related to constructing validity.²⁵ Thus it has been modified by adding context based dimensions^{24,26} when used for health care services.

Parasuraman et al,²⁷ considered that quality of services is related to consumer's expectations before and during acquiring services and its perceived quality following the service. He defined the service quality gap as the difference between customer expectation and their perceptions. To meet environmental demands, successful organizations use gap-analyzer models or other related tools to understand customer centered needs. They set their activities as per customer preferences and use them as service quality standards. Similarly, researchers like Torabipour et al,²⁸ Aghamolaei et al,¹³ Purcărea et al,¹⁵ Chakravarty,²⁹ Butt and Run,¹⁹ Curry and Sinclair,³⁰ Lim and Tang,³¹ Lam,¹⁷ and Brown and Swartz,³² have used gap model to assess hospital service quality.

In Pakistan, 55.63% of the population are living in Punjab province and are served by numerous hospitals of various sizes with a bed strength of ≥ 2000 to ≤ 50 . The number of tertiary care teaching hospitals with bed strength ≥ 400 is 23, district headquarter hospitals with a bed strength ≤ 400 and ≥ 250 is 34, subdistrict headquarter hospitals with bed strength ≤ 250 is 88. There are also 293 rural health centers, and 2461 basic health units provide primary care services.³³

According to World Health Systems' ranking of World Health Organization, Pakistan's health system is 122nd, which is a grave concern indeed. For development and prosperity of such countries, a healthy population is needed to enhance and achieve sustainable growth in every field of life. Therefore, the focus is on tertiary care teaching hospital's service quality which is most populous and specialized, and need direct involvement and commitment of hospital administrators, managers, and policy makers. In

countries like Pakistan, hospital service quality is a neglected area, and much research is needed to move towards continuous quality improvement. Two other studies in Pakistan have studied service quality in hospitals using SERVQUAL and identified the gap to measure service quality using sector specific dimensions.^{22,23} They identified that private sector hospitals provide better quality services than public sector hospitals. Assessing and measuring quality is the first step towards Continuous Quality Improvement.

We sought to measure the service quality gap using a modified version of the SERVQUAL tool from the consumer (patient)'s perspective in tertiary care teaching hospitals in Pakistan.

METHODS

This cross-sectional study was conducted using patients and/or their attendants attending public and private sector tertiary care general hospitals to receive healthcare services. Hospitals with bed strength ≥ 50 were included in our study. All the tertiary care hospitals were licensed under the Punjab Healthcare Commission (PHC) Act 2010 as a Healthcare Establishment. A multistage cluster sampling was used. At first, all hospitals were listed and 10 were selected randomly using the draw method (five belonging to the private sector and five from the public sector). Since we could not get patients'/attendants' responses from all services in a hospital, three services were selected out of six (emergency, diagnostics, surgical, medical, pediatrics, and obstetrics/gynecology). We selected emergency, surgical, and diagnostics (radiology and laboratory).

Patients were recruited by convenience sampling of the required cluster/service (proportionately), that is the average number of patients admitted to surgery and emergency departments on any day, or the number of patients visiting radiology and laboratory services on any day. The same procedure was done daily with new upcoming/admitted patients until the sample size was complete. Children under the age of 12 years were excluded as respondents. Patients hospitalized for more than 24 hours or who had been visiting the hospital frequently were included after taking their written informed consent. Ethical review was done by the institutional ethical review board and written informed consent was obtained and data confidentiality was maintained as per the principles

of Declaration of Helsinki.³⁴ Ethical approval for the research project was obtained from Institutional Review Board (IRB-No.: 1387-1388) of Shaikh Zayed Medical Complex, Lahore, Pakistan.

The sample size for patients/attendants was calculated using the results of another study.¹⁴ With a maximum error of 0.03 and confidence level of 95%, the minimum sample size calculated was 850. The required data was collected using modified SERVQUAL tool whose items were being adopted or adapted from studies of published research.^{19,30-32,35} Expecting a 60% response rate (as this was to be self-administered) a total 1500 questionnaires were distributed. Questionnaires were self-administered to the patients and/or their attendants during treatment or preferably prior to discharge. In case of illiterate patients or attendants, a researcher filled their responses. A total of 900 questionnaires were received with a response rate of 60.0%, and 83 were excluded from the study due to incomplete information; 817 questionnaires were used for analysis.

The questionnaire consisted of a section/segment with demographic information and two other parts with 52 questions each related to expectations and perceptions measurement; nine questions related to tangibility, eight questions related to responsiveness, six questions related to reliability, 15 questions related to assurance, seven questions related to empathy, two questions related to *Bakhshesh* (defined as tip, as used by Andleeb⁶ in his study), and five questions related to communication for both expectations and perceptions. The first section covered the perceptions of patients about the quality of services measured and the second section their expectations about the quality of services. These were assessed using a Likert-type scale ranging from strongly disagree (1) to strongly agree (5). The maximum score in one dimension of perception was subtracted from the respective score in expectation dimension. Like in another study,²⁴ in this study questionnaire was also written primarily in English and then translated into Urdu and retranslated by a bilingual expert from Urdu to English to ensure the validity of Urdu version. The reliability of this modified Urdu SERVQUAL questionnaire was assessed (overall Cronbach's $\alpha = 0.979$) as having high internal consistency. Two items (questions) from *Bakhshesh* portion and one item each from empathy and communication were deleted due to

Table 1: Reliability assessment of SERVQUAL questionnaire items.

Dimension	Perception		Expectation	
	items	Alpha value	items	Alpha value
Assurance	q58-q72	0.935	q1-q15	0.947
Empathy	q73-q79	0.900	q16-q21	0.920
Reliability	q80-q85	0.875	q23-q28	0.911
Tangibility	q86-q94	0.902	q29-q37	0.931
Responsiveness	q95-q101	0.913	q38-q45	0.937
<i>bakhsbeesh</i>	q103-q104	0.229	q46-q47	0.130
Communication	q105-q109	0.900	q49-q52	0.923

having a Cronbach's value < 0.600 [Table 1]. Items are abbreviated as "q" extracted from question and numbered subsequently.

Collected data was entered in SPSS Statistics (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). The Wilcoxon test was used to calculate the quality gap of services, and the Kruskal-Wallis test and univariate analysis to determine the significance of a difference between the mean score of expectation and perception in different age, sex, and educational status groups.

RESULTS

The mean age of the respondents was 37.4 ± 16.6 years. The majority of respondents were female ($n = 423, 51.8\%$) while 394 (48.2%) were male. One hundred and thirty-two (16.2%) respondents had less than secondary school education, 185 (22.6%) were secondary school educated, 144 (17.6%) had higher secondary school education, 209 (25.6%) were graduates, and 147 (18.0%) were postgraduates. The majority of respondents ($n = 499; 61.1\%$) used surgical department services, 124 (15.2%) used the accident and emergency department, and 194 (23.7%) used diagnostic services [Table 2].

The mean expectation score for each dimension and overall dimension's score was high. There was a very slight difference among mean expectation values of each dimension as shown in Table 3.

Mean value for expectation varied from 4.68 ± 0.59 (highest) for assurance to 4.61 ± 0.73 (lowest) for responsiveness. The mean values of perception varied from 3.68 ± 1.00 for tangibility (lowest) to 3.96 ± 0.89 for assurance (highest). The overall expectations and perceptions of the

respondents were also calculated. The quality gap (P-E) of the services was measured. The minimum gap was found for the responsiveness with the mean value of -0.04 ± 0.87 while the greatest gap exists with the mean values of -1.00 ± 1.08 for tangibility. Wilcoxon test showed that the difference between the expectation and perception of the patients was statistically significant in all of the dimensions except responsiveness. The overall mean \pm standard deviation expectation value for hospital service quality was found to be 4.68 ± 0.58 while the overall perception value was 3.86 ± 0.85 . The overall quality gap was -0.77 ± 0.83 . Consequently, there exist a negative quality gap between the patient's perceptions and

Table 2: Respondent's demographic information.

Characteristic	Percentage	n
Age, years		
< 17	5.6	46
17-25	22.5	184
26-35	26.3	215
36-45	16.9	138
> 45	28.6	234
Sex		
Male	48.2	394
Female	51.8	423
Education		
< Secondary school	16.2	132
Secondary school	22.6	185
Higher secondary education	17.6	144
Graduate	25.6	209
Postgraduate	18.0	147
Hospital type		
Public	58.8	480
Private	41.2	337
Hospital department		
Surgical services	61.1	499
Accident and emergency	15.2	124
Diagnostics	23.7	194

Table 3: Mean scores of perception, expectation, and quality gap of services provided by hospitals.

Dimension	Expectation Mean ± SD	Perception Mean ± SD	Quality gap P-E	Z	p-value
Assurance	4.68 ± 0.59	3.96 ± 0.89	-0.72 ± 0.86	-19.94	≤ 0.001
Empathy	4.65 ± 0.67	3.86 ± 0.99	-0.79 ± 1.04	-18.56	≤ 0.001
Reliability	4.65 ± 0.66	3.88 ± 0.96	-0.77 ± 1.00	-18.51	≤ 0.001
Tangibility	4.66 ± 0.64	3.68 ± 1.00	-0.98 ± 1.03	-20.86	≤ 0.001
Responsiveness	4.61 ± 0.73	3.88 ± 0.99	-0.73 ± 1.04	-17.95	0.638
Communication	4.67 ± 0.70	4.03 ± 1.06	-0.64 ± 1.10	-15.63	≤ 0.001
Overall service quality	4.68 ± 0.58	3.86 ± 0.85	-0.77 ± 0.83	-21.61	≤ 0.001

SD: standard deviation.

expectations of the service quality ($p \leq 0.001$). Findings of current study illustrated no significant association with overall service quality gap of age, occupation, and length of stay [Table 3].

Expectations' means of all dimensions were not significantly different in public and private hospitals. Perceptions' mean were significantly different in all dimensions among public and private hospitals [Table 4].

There was a significant difference in the mean expectation and perception between sexes for responsiveness ($H = 8.74, p < 0.003$; $H = 4.36, p < 0.037$, respectively) and perception of communication only ($H = 4.93, p < 0.026$), while other dimensions and overall hospital expected and perceived quality was independent of sex.

When the effect of educational status on each dimension's expectation and perception was calculated, a significant difference of expected responsiveness ($H = 14.71, p < 0.005$) was observed between respondents possessing different educational levels. The expectation of other dimensions

was independent of educational status. But, the perception of each dimension had a significant difference when educational status varied (assurance: $H = 26.31, p < 0.001$; empathy: $H = 23.30, p < 0.001$; reliability: $H = 27.78, p < 0.001$; tangibility: $H = 31.43, p < 0.001$; responsiveness: $H = 20.16, p < 0.001$; communication: $H = 23.81, p < 0.001$ and overall service quality: $H = 30.28, p < 0.001$). We found a significant difference between perceived tangibility ($H = 9.02, p < 0.003$) when ownership varied. There was no relationship between age and hospital department with any of the perceived or expected dimension of service quality of hospitals.

We observed no significant association with overall service quality gap of age, occupation, and length of stay. There was a significant association between sex and hospital ownership with mean gap score of all identified dimensions except communication ($p = 0.241$). On the contrary, there was no association among departments, education and mean gap score of all dimensions except communication ($p = 0.038$) [Table 5].

Table 4: Mean scores of perception and expectation of services in public and private hospitals.

Dimension	Expectations				Perceptions			
	Public hospital Mean ± SD	Private hospital Mean ± SD	F-value	p-value	Public hospital Mean ± SD	Private hospital Mean ± SD	F-value	p-value
Assurance	4.68 ± 0.61	4.67 ± 0.54	0.220	0.640	3.89 ± 0.98	4.05 ± 0.74	31.110	0.001
Empathy	4.66 ± 0.69	4.64 ± 0.64	0.090	0.760	3.86 ± 1.06	3.86 ± 0.89	12.510	0.001
Reliability	4.64 ± 0.71	4.68 ± 0.58	2.250	0.130	3.85 ± 1.03	3.92 ± 0.85	16.360	0.001
Tangibility	4.67 ± 0.67	4.65 ± 0.61	0.065	0.799	3.58 ± 1.07	3.83 ± 0.86	23.460	0.001
Responsiveness	4.58 ± 0.80	4.65 ± 0.62	6.250	0.013	3.81 ± 1.07	3.98 ± 0.86	22.210	0.001
Communication	4.67 ± 0.74	4.69 ± 0.63	1.630	0.202	4.05 ± 1.09	4.00 ± 1.00	5.070	0.025
Overall service quality	4.65 ± 0.62	4.66 ± 0.52	0.324	0.569	3.84 ± 0.92	3.95 ± 0.04	17.760	0.001

SD: standard deviation.

Table 5: Patient's demographics and gap score of service quality dimensions using multivariate analysis.

Characteristics	Assurance	Empathy	Reliability	Tangibility	Responsiveness	Communication
Age, years						
≤ 17	-0.61 ± 0.82	-0.64 ± 0.76	-0.58 ± 0.84	-0.92 ± 1.11	-0.53 ± 0.85	-0.53 ± 0.92
17–25	-0.71 ± 0.82	-0.79 ± 1.06	-0.76 ± 1.06	-0.88 ± 0.99	-0.66 ± 1.12	-0.54 ± 1.11
26–35	-0.75 ± 0.86	-0.80 ± 1.02	-0.77 ± 0.94	-0.96 ± 1.05	-0.76 ± 1.01	-0.76 ± 1.14
36–45	-0.73 ± 0.88	-0.84 ± 1.14	-0.75 ± 1.05	-1.04 ± 1.04	-0.81 ± 0.97	-0.74 ± 1.12
≥ 45	-0.74 ± 0.88	-0.78 ± 1.05	-0.83 ± 1.01	-1.03 ± 1.02	-0.74 ± 1.09	-0.58 ± 1.07
F-value	0.259	0.345	0.686	0.761	0.872	1.532
p-value	0.900	0.850	0.600	0.550	0.480	0.190
Sex						
Male	-0.74 ± 0.98	-0.78 ± 1.15	-0.75 ± 1.09	-1.01 ± 1.14	-0.79 ± 1.14	-0.64 ± 1.12
Female	-0.71 ± 0.78	-0.80 ± 0.98	-0.78 ± 0.95	-0.96 ± 0.96	-0.69 ± 0.98	-0.65 ± 1.09
F-value	16.600	11.460	5.000	15.130	7.430	0.624
p-value	0.001	0.001	0.026	0.001	0.007	0.241
Hospital type						
Public	-0.79 ± 0.96	-0.79 ± 1.12	-0.78 ± 1.08	-1.09 ± 1.106	-0.78 ± 1.128	-0.61 ± 1.14
Private	-0.62 ± 0.72	-0.78 ± 0.92	-0.75 ± 0.87	-0.82 ± 0.894	-0.66 ± 0.904	-0.69 ± 1.04
F-value	18.870	9.650	9.880	20.510	12.080	1.632
p-value	0.001	0.002	0.002	0.001	0.001	0.202
Hospital department						
Surgical	-0.74 ± 0.89	-0.76 ± 1.07	-0.74 ± 1.03	-1.02 ± 1.07	-0.73 ± 1.08	-0.56 ± 1.09
Accident and emergency	-0.63 ± 0.89	-0.74 ± 1.02	-0.77 ± 0.98	-0.85 ± 1.01	-0.63 ± 0.99	-0.75 ± 1.19
Diagnostics	-0.75 ± 0.73	-0.90 ± 0.96	-0.84 ± 0.94	-0.93 ± 0.94	-0.79 ± 0.98	-0.77 ± 1.05
F-value	0.823	1.580	0.689	1.715	1.002	3.295
p-value	0.439	0.207	0.503	0.181	0.368	0.038
Education						
≤ Secondary school	-0.87 ± 0.98	-0.85 ± 1.15	-0.82 ± 1.09	-1.01 ± 0.99	-0.73 ± 1.02	-0.73 ± 1.15
Secondary school	-0.67 ± 0.79	-0.69 ± 0.91	-0.58 ± 0.93	-0.87 ± 0.94	-0.60 ± 0.99	-0.52 ± 0.90
Higher secondary education	-0.79 ± 0.94	-0.88 ± 1.11	-0.91 ± 1.12	-1.08 ± 1.16	-0.81 ± 1.23	-0.86 ± 1.31
Graduate	-0.66 ± 0.81	-0.76 ± 1.01	-0.85 ± 0.92	-1.04 ± 1.04	-0.78 ± 0.96	-0.57 ± 1.05
Other	-0.68 ± 0.79	-0.80 ± 1.06	-0.71 ± 0.98	-0.89 ± 1.01	-0.72 ± 1.03	-0.59 ± 1.11
F-value	1.810	0.910	2.740	1.350	1.030	2.590
p-value	0.125	0.458	0.028	0.250	0.391	0.035
Occupation						
Business owner	-0.78 ± 1.058	-0.85 ± 1.26	-0.70 ± 1.20	-0.94 ± 1.14	-0.71 ± 1.14	-0.67 ± 1.27
Housewife	-0.74 ± 0.795	-0.80 ± 1.01	-0.79 ± 0.98	-0.94 ± 0.98	-0.69 ± 1.03	-0.65 ± 1.08
Civil servant	-0.85 ± 0.850	-1.06 ± 0.93	-1.15 ± 0.95	-1.29 ± 1.08	-1.10 ± 0.88	-0.84 ± 1.07
Employee	-0.55 ± 0.797	-0.63 ± 0.92	-0.66 ± 0.88	-0.93 ± 1.02	-0.69 ± 0.95	-0.57 ± 0.90
Other	-0.78 ± 0.899	-0.82 ± 1.08	-0.79 ± 0.99	1.09 ± 1.06	-0.76 ± 1.04	-0.62 ± 1.19
F-value	1.950	1.640	2.050	1.540	1.410	0.491
p-value	0.100	0.163	0.085	0.187	0.230	0.742
Length of hospital stay						
1–3 h	-0.67 ± 0.73	-0.79 ± 0.97	-0.82 ± 0.94	-0.80 ± 0.96	-0.72 ± 0.97	-0.68 ± 1.13
5–7 h	-0.63 ± 0.74	-0.84 ± 0.92	-0.74 ± 0.93	-0.90 ± 0.84	-0.71 ± 1.02	-0.72 ± 0.91
24 h	-0.65 ± 0.92	-0.68 ± 1.03	-0.69 ± 1.00	-1.02 ± 1.07	-0.65 ± 1.07	-0.63 ± 0.98
2–5 days	-0.75 ± 0.93	-0.77 ± 1.13	-0.78 ± 1.05	-1.07 ± 1.06	-0.73 ± 1.06	-0.57 ± 1.11
Others	-0.81 ± 0.88	-0.84 ± 1.05	-0.78 ± 1.04	-1.02 ± 1.09	-0.79 ± 1.06	-0.66 ± 1.17
F-value	1.078	0.461	0.234	1.910	0.317	0.523
p-value	0.366	0.765	0.919	0.107	0.866	0.719

F- Functional analysis of variance test. $p < 0.050$ indicates significance level.

DISCUSSION

This study was designed to determine the quality gap of services according to the perception and expectations of patients to facilitate health care policymakers to pay more attention to weaker/neglected areas of hospital services. Distribution of tertiary care teaching hospitals in our country is uneven with neglected remote areas. A huge number

of patients from densely populated areas visit hospitals with a limited number of medical workers, space, and infrastructure. Consequently, their level of expectation and perception varies.

The highest expectation and lowest perception were related to the tangibility (i.e., up to date and modern equipment, visually appealing hospital facilities, pleasant waiting area for medication and

doctor's office, feeling of well-being, neat and well-dressed employees, clean and hygienic ablution facilities, and availability of tasty and hygienic meal). These findings are in parallel to the results of Al Fraihi and Latif¹⁰ in Saudi Arabia, Chakravarty²⁹ in Pune, and Yesilada and Direktör³⁶ in Cyprus. Bahadori et al,³⁷ reported the smallest gap in tangibility in contrast to our results.

The expectations were equally shared in the assurance, empathy, and communication dimensions; however, amongst all dimensions, there was the highest perception of assurance, followed by communication and empathy. Assurance was found to be related to the availability of competent, skilled, trained and professional doctors, nurses, and support staff at the facility. Employees were knowledgeable enough to answer patient's questions, were courteous, polite, friendly and supportive towards patients, maintained confidentiality, and had adequate support from employers to do their jobs well. Patients felt secure and trusted hospital employees (based on the answers from patients under the assurance dimension).

Communication was a new dimension identified (suggested by Parasuraman et al,⁹). It was related to employee's willingness to answer any question related to patients, provision of adequate information regarding tests that the patient needed to undergo, and about his health and treatment. Empathy included the understanding of patient's needs by hospital staff, giving adequate time to understand patient's needs, and treatment of patients by considering them as an individual rather than just a number. Doctors, nurses, and support staff have best interests in their hearts. These findings are in line with the study of Andaleeb⁶ and suggest that patients want medical professionals to not only listen to complaints, but also show an interest in finding other alternative treatment options associated with their disease.

Reliability comprised of provision of services by the hospital within the promised time frame, instilling patient's confidence, making a diagnosis after careful examination, accurate billing, error free and fast retrieval of documents, and sympathetic and reassuring employees when patients have problems. The significant gap in this dimension signifies lesser confidence among the patients on the timely access, reassurance, and accuracy of services being provided.

There was no significant difference between

expectation and perceptions of patients when measuring the responsiveness of hospitals. This included the responsiveness of doctors, nurses, and support staff towards patient's needs and their willingness to help patients. The provision of prompt services by hospital employees and telling patients when services will be performed and other related information was an important aspect highlighted.

Researchers in Turkey,³⁸ Iran,^{13,39} and Cyprus³⁶ have tried to assess the gap between expectations and perception of patients regarding services reporting negative gaps. Patients' expectations of hospital services provided were higher than their perceptions, and the gaps between patients' perceptions and their expectations were negative. The highest negative gap was found in tangibility dimension as reported by Al Fraihi and Latif¹⁰ and Zarei et al.⁴⁰ This gap should be considered a wake-up call for hospital management to drastically improve the physical environment of hospital services. In our study, the lowest negative gap was in the responsiveness dimension that was in contrary to Hekmatpo et al,³⁹ where the highest negative gap was found in responsiveness dimension. Findings of current study illustrated no significant association with overall service quality gap of age, occupation and length of stay as also found by Kavitha.⁴¹ There is significant association between sex and hospital ownership with a mean gap score of all identified dimensions except communication ($p = 0.241$). There was no association between hospital department, education level and mean gap score of all dimensions except communication ($p = 0.038$). Similarly, Bahadori et al,³⁷ showed no such association.

Managerial efforts are needed to combat the negative quality gap stressed by patients. Focusing on the dimensions with the highest gap should be considered more critical than those where a gap is lowest. The scope of services should be according to patient's expectations, if not, they will undervalue the hospital or try to avoid it. Hospital management need to consider patient's views and respond effectively.

Current research suggests a need to change the rules and guidelines that facilitate the release of funds for purchase of equipment/machinery in all tertiary care hospitals. The facilities should be patient centered and easily approachable. Medical workers need to be trained to communicate with

patients and mitigate behavioral issues effectively. More attention should be paid to distribute tertiary care hospitals evenly across districts/divisions based on either population size or disease burden. This can only be achieved by intersectoral collaborations fully coordinated with district/divisional health officers. To improve this intimidating scenario, health systems in general and, specifically, hospitals should respond to patient's expectations and minimize the performance gap. Hospitals must strive to understand what patients need or want to meet or exceed their service expectations.

The study was limited to tertiary care hospitals only, hence cannot be generalized to secondary and primary health care services. In-depth qualitative studies can be conceptualized to get more information about hospital service quality. This study is focused on patient's perspective only. Therefore, more studies are needed to determine employee's perspectives, too.

CONCLUSION

There exists a service quality gap in tertiary care teaching hospitals in Pakistan's metropolitan city, based on patients' perspective. Gaps existed in all dimensions between expectations and perceptions about service quality. Assurance, reliability, empathy, and responsiveness of service quality were associated with differences in sex and hospital types, but communication is not associated. Expectations in all dimensions were not significantly different while perceptions were different in all dimensions among public and private hospitals. Healthcare organizations can achieve patient satisfaction by doing things right for quality care with the objective to exceed customer expectations.

Disclosure

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