

## Original Article

**Analysis of Service Quality Gap between Perceptions and Expectations of Service Recipients using SERVQUAL Approach in Selected Hospitals in Golestan Province**Fatemeh Hoseini Rostami<sup>1</sup> Mohammad Ali Jahani<sup>2\*</sup> Ghahraman Mahmoudi<sup>3</sup>

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**Abstract**

**Background and purpose:** Services quality is an important factor of satisfaction, as well as a remarkable tool for marketing to achieve the competitive differentiation and promotion of customer's loyalty. The present study was aimed to analyze the quality gap using SERVQUAL approach at selected hospitals in Golestan Province at the year 2015.

**Materials and Methods:** A cross-sectional survey was conducted on 361 patients of selected hospitals of Golestan Province. To determine sample size, Cochran's sample size formula was utilized. Also, to collect the data, SERVQUAL questionnaire was used. The collected data was analyzed through SPSS Software (version 18), and running statistical tests including paired t-test and Pearson correlation. The level of significance was also considered to be  $\leq 0.05$ .

**Results:** The most expectation of hospital services quality was related to reliability dimension ( $31.60 \pm 4.00$ ), while the lowest perception was about responsiveness aspect ( $13.36 \pm 5.74$ ). The greatest gap between perceptions and expectancies was in the reliability dimension ( $-4.54$ ), which was significant ( $P < 0.001$ ). In terms of responsiveness dimension, there was a significant correlation between perceptions and expectancies ( $r = 0.174$ ,  $P \leq 0.001$ ).

**Conclusions:** The largest gap between perceptions and expectancies was about reliability and tangibles dimensions that can likely be reduced by the staff appearance, physical environment, and utilization of suitable equipment and assurance to patients.

**Keywords:** Services Quality; SERVQUAL; Hospital; Gap Analysis

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## 1. Introduction

Services delivering are changing for providers across the globe (1), and hospital is also associated with people life as a provider unit of health and treatment services, therefore attention to its quality seems more necessary (2). Quality service serves as an important factor in productivity of hospitals (3). Quality means ability to produce product or provide service in ways that meet customer needs and satisfy them (4); Thus, any product that meets customer's needs can likely be a high-grade product (5). Improving services quality and patient satisfaction necessitates health institutions to compete (6). The concept of service quality is ambiguous, complex and inexplicable (7, 8). Quality of service is an important indicator of customer satisfaction and verbal advertising (9). It is also a key factor for marketing to achieve the competitive differentiation and customer loyalty promotion (10, 11). Also, the quality of service delivery is important due to increased use of services, observance of treatment and its impact on health outcomes (12). Minor errors in hospitals may cause serious harm, because hospital services are vital (13). Improving the quality of health services in organizations that want to survive in competitive markets, as well as to increase patient satisfaction, is one of the major challenges for the staff (14). In the past, access to health services was one of the main needs of patients, but today, due to increased supply, their needs have changed, and hospitals have to increase the quality of their services in response to this (15). Service provider organizations strive considerably in the health sector, especially in hospitals to meet the growing needs and expectations of their patients (16). Recognizing the quality of services and the importance of its dimensions is the first step

for providing high quality services to customers in order to satisfy them (17). Satisfaction and service quality are mostly considered as a result of perceptions and expectations of customers (18). Dissatisfaction of customers and their negative advertisements may cause disadvantages of organizations (19). Reliable information about customer perceptions and expectations has undeniable impacts on improving the quality of services (20). Quality services aim to meet the needs and expectations of hospital patients (21). Instruments to measure the services quality in hospitals enable health personnel to identify services that require improvement from patient's point of view (6). Serqual Model is one of the most popular methods for measuring the quality of service that has been developed in 1985 by Parasuraman (22). This model measures the services quality using gap analysis between perception and expectation of customer, which tests services quality in five dimensions including tangibles, reliability, responsiveness, assurance, and empathy (23). There are numerous studies conducted on health services quality. Aman et al., survey showed that public hospitals provide low-quality services to patients, and also according to the results of the study, patient satisfaction is achieved only with quality assurance (24). At the same time, Khamis demonstrated that hospital managers should increase the communication skills among out-patient department staff in order to ensure patients' access to essential medications (25). Based on the results of a study conducted to survey patient satisfaction in a private hospital, assurance, reliability, and then empathy, responsiveness, and tangibility were found to be the most important aspects of quality

and the activities of the nursing medical staffs provided the highest level of satisfaction (26).

Additionally, some studies have been conducted by the Serqual Model in Iranian context. The study of Mohebifar et al. showed a negative gap in all dimensions of service quality, and recommended that managers try to reduce the service gap through planning (27). Also, series of studies on quality of healthcare service showed a gap between the expectations and perceptions of patients from the provided services. According to the results of these studies, for the purpose of reducing the existing gap, the reformation of processes in terms of quality is considered as one of the fundamental principles (28, 29).

The current survey was aimed to assess the gap analysis of services quality between perceptions and expectations of consumers using SERVQUAL Model in the selected hospitals of Golestan University of Medical Sciences to identify weak points, and consider the suitable approaches for providing proper services as well as for planning to improve quality of services.

## 2. Materials and Methods

A cross-sectional study was carried out on patients hospitalized in five selected hospitals of Golestan University of Medical Sciences entitled "5 Azar and Shahid Sayyad Shirazi Hospitals (two educational hospitals in Gorgan city)", "Al-e-Jalil Hospital (a public hospital in Agh-Qala city)", "Falsafi Hospital (a private hospital in Gorgan city)", and "Hakim Jorjani Hospital (a hospital covered by social security organization)".

According to the approximate number of hospitalized patients in 2015, the sample of each hospital was determined, and they were selected using random classified sampling technique.

The study populations were patients who were hospitalized for three days, aged at least 18, and selected randomly.

400 subjects were considered as the research sample, finally, 361 subjects were collected and analyzed. Prior to the time of filling out the questionnaires, the hospitals were informed in all days of the week, and finally, an informed consent form was obtained in the beginning of the study.

After implementing the study, 369 questionnaires were completed and analyzed (Table 1).

**Table 1.** List of selected hospitals based on patient's distribution

	Name of hospital	Ownership	Total number of hospitalized patients	Total of patients
1	5 Azar	Golestan University of Medical Sciences	1537	92
2	Shahid Sayyad Shirazi	Golestan University of Medical Sciences	1797	107
3	Al-e-Jalil	Golestan University of Medical Sciences	460	27
4	Falsafi	Private	1200	72
5	Hakim Jorjani	Social security	1053	63
	<b>Total</b>		<b>6047</b>	<b>361</b>

It should be noted that prior to the study, the research team was allowed by hospitals managers to collect data, and patients were assured that their information will remain confidential. Moreover, a consent form was provided and obtained before conducting the study.

Interviews were conducted by research team using Serqual questionnaire. The research team was adequately aware of the study aim and also authorized before conducting the interviews and completing the questionnaires.

Servqual valid and reliable questionnaire was used to collect the data (25, 28). This questionnaire consists of 22 questions in five dimensions including responsiveness (4 items), assurance (4 items), reliability (5 items), empathy (5 items), and tangibles (4 items) in 7 point-Likert scale (completely disagree= 1 and completely agree= 7) with minimum and maximum scores of 22 and 154, respectively. In addition, the demographic information of patients including age, gender, education status, name of hospital part, duration of

hospitalization, and number of hospitalizations were all collected. The questionnaires were then completed in the self-administered form in the presence of research team.

Descriptive methods (mean and standard deviation) were run to describe demographic characteristics. Kolmogorov-Smirnov test for normality and Pearson correlation were also used to show the relationship between the expectations and perceptions of patients. Also, paired t-test was used to assess the mean score of expectations and perceptions in all dimensions of services quality.

### 3. Results

More than half of the patients who participated in this study were female (52.2 %), and majority of the subjects (39.1 %) were in the age range of 30-49 years. With regard to the type of insurance, 42% were covered by social security insurance (utmost), and just 1 % were uninsured (least) (Table 2).

**Table 2.** Demographic characteristics of hospitalized patients in the study hospitals

Variables		Number	Percent
Gender	Male	180	48.8
	Female	189	52.2
	Total	369	100
Age range	18-29	73	19.7
	30-49	144	39.1
	50-69	109	29.6
	70 and <	43	11.6
	Total	369	100
Education status	Illiterate	69	18.7
	Diploma and less	256	69.4
	Associate degree and Bachelor	40	10.8
	Senior and higher	4	1.1
Type of insurance	Total	369	100
	Social security	159	43.1
	Health services	116	31.4
	Armed forces	29	7.9
	Other	61	16.5
	None	4	1.1
	Total	369	100

Based on K-S test, the research data distribution was normal ( $p= 0.07$ ).

Pearson correlation test revealed that the relationship between the patients' expectations and perceptions of services quality was statistically significant ( $p < 0.001$ ). Also, there was found a remarkable association between expectations and perceptions (reliability,

assurance, tangibles, and empathy) with a moderate correlation coefficient. In this field, responsiveness dimension in expectations and perceptions was statistically significant with a low correlation coefficient ( $r = 0.174$ ,  $p < 0.001$ ) (Table 3).

**Table 3.** Correlation coefficient between expectations and perceptions in study hospitals

Dimensions of expectations and perceptions	Correlation coefficient	P-value
Tangibles	0.278	<0.001
Reliability	0.332	<0.001
Responsiveness	0.174	<0.001
Assurance	0.416	<0.001
Empathy	0.259	<0.001

Table 4 shows the gap of services quality in the study hospitals. The greatest gap was observed to be between perception and expectations in the field of reliability ( $t = -16.47$ ) that was also meaningful

( $p < 0.001$ ), and in the responsiveness dimension, the perceptions of patients were documented to be higher than expectations ( $p < 0.001$ ).

**Table 4.** Gap mean of services quality in study hospitals

Dimensions of services quality	Mean of expectations	Mean of perceptions	Mean of services quality gap	Confidence interval (CI)		t	df	P-value
				minimum	maximum			
Tangibles	25.48±3.11	22.40±3.49	-3.073	-3.48	-2.67	-14.83	368	0.001
Reliability	31.60±4.00	27.06±5.05	-4.54	-5.09	-4.00	-16.47	368	0.001
Responsiveness	9.26±5.49	13.36±5.74	4.10	3.36	4.84	10.92	368	0.001
Assurance	24.19±3.66	21.63±3.59	-2.56	-2.96	-2.15	-12.53	368	0.001
Empathy	15.39±7.64	17.16±6.51	1.76	0.88	2.66	3.94	368	0.001

Tangibles, assurance and reliability of expectations were higher than perceptions, which means that their expectations were not met, while regarding responsiveness

and empathy dimensions, services quality was higher than expected quality by patients (Fig.1).

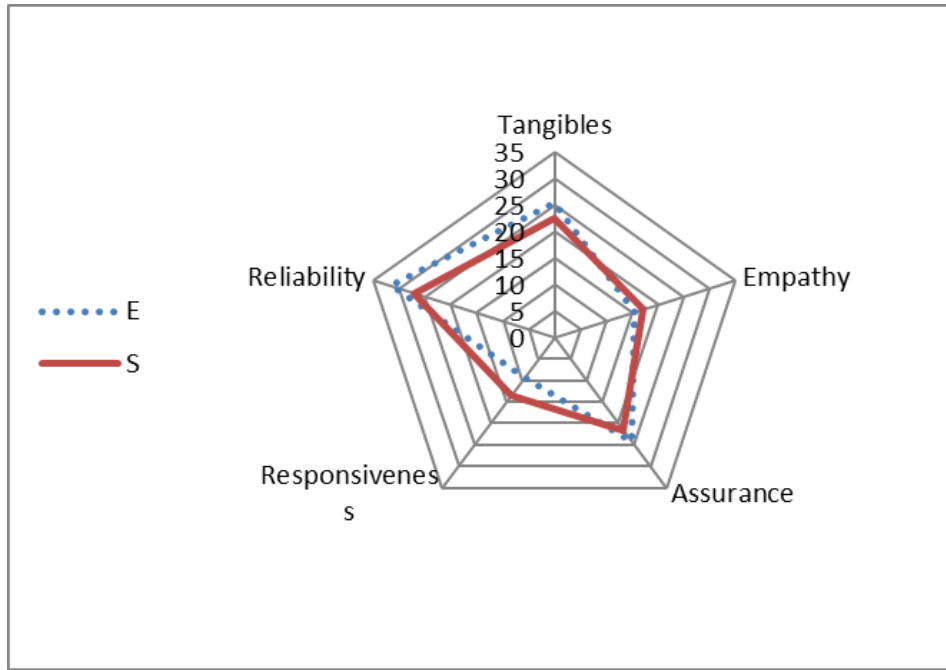


Figure 1. Services quality in study hospitals

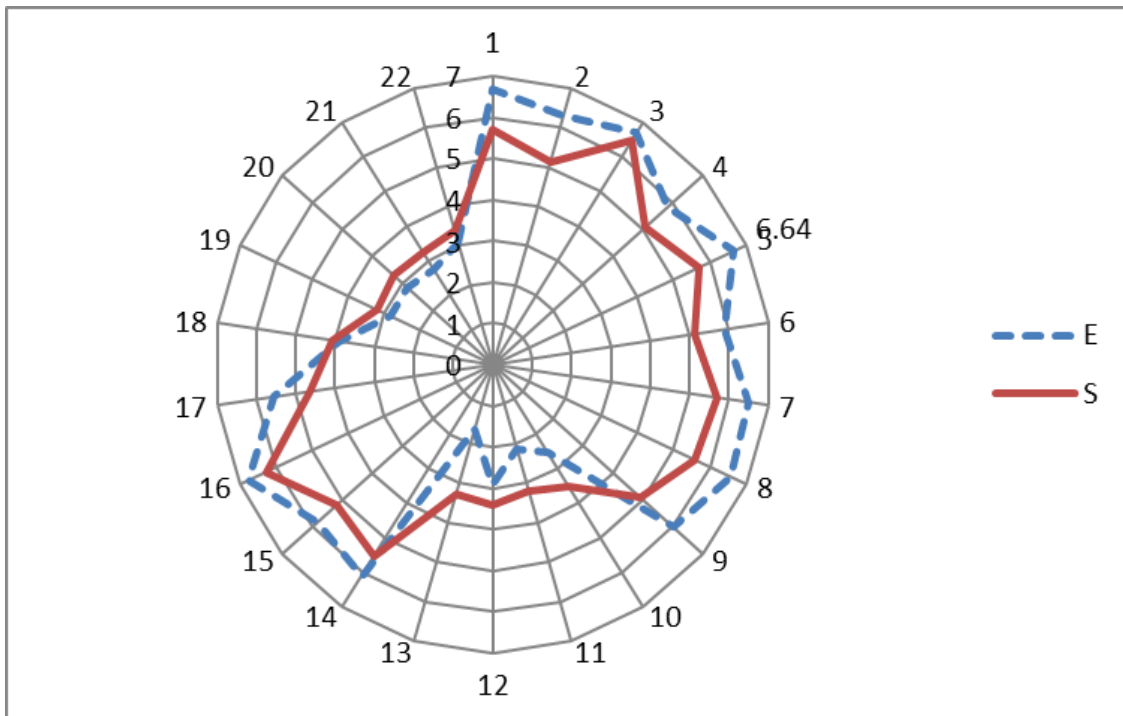


figure2. Difference of patient's perceptions and expectations in study hospitals based on questions

#### 4. Discussion

Based on the findings of the present study, the maximum and minimum mean scores in expectations and perceptions were found to be for reliability and responsiveness dimensions, respectively. In a study conducted by Mohammadnia et al. in a social security hospital in Tehran, the lowest mean score was about responsiveness dimension (30). In Tarrahi et al. survey in health centers of Khoram Abad city in Iran, in expectations part, assurance and responsiveness had the maximum and minimum mean scores that were in line with the results of the present study. In the current investigation, regarding the patients' perceptions, reliability and responsiveness had the highest and lowest mean, respectively (31). In another study conducted by Bahadori et al. in army hospitals, assurance and tangible dimensions were found to have the maximum and minimum mean score, which was not in line with the findings of the present study (32). On the other hand, in a survey performed in Peru by Miranda et al. (31) on people who suffered from traffic accident, assurance dimension was revealed to have the lowest mean. Moreover, despite the poor correlation in responsiveness dimension, the results showed correlations between five dimensions of service quality in the perceptions and expectations parts.

The findings of the current study indicated a gap between expected and perceived services quality in some dimensions; while, there was observed no gap between responsiveness and empathy dimensions. The greatest gap was seen to be between reliability and tangible dimensions, which means that their expectations were not met. Mashhadi et al. in a survey done in Mofid Hospital in Tehran reported that the service

quality perceived by patients was more than average and was also lower than their expectations in all aspects (21). Aghamolaei et al. in a survey implemented in Bandar Abbas city showed that quality of services was moderate, and also there was a negative gap between expectations and perceptions of patients in all dimensions (33). The greatest gap was documented to be in the responsiveness aspect and the lowest one was observed to be in the assurance dimension, which was not in accordance with the findings of this study. In Khandan et al. exploration conducted in Kerman city, there was a negative gap in all aspects of services quality with the responsiveness and tangible experiencing the greatest negative gap (34). The results of Zare et al. survey in Yazd city showed a gap between the expected and perceived services quality by patients (29). The greatest gap was in terms of tangible and assurance and the smallest gap was about assurance and empathy. In a study by Gorji, negative gaps were observed in quality of health services between customers' perceptions and expectations (35), which was not in accordance with the findings of this study. Inconsistent with the current survey, Nadi et al. found that the greatest and lowest gaps were accordingly associated with assurance and reliability dimensions (36).

In this survey, there was observed no gap between responsiveness and empathy dimensions. This may be caused by the fact that similar ethnicities or the establishment of hospitals in small towns and consequently the familiarity of personnel with each other, can improve the responsiveness and empathy of services providers. In addition, identifying dimensions with the greatest gap not only

facilitate the priorities and sources providences but also decrease the gap of services quality.

On the whole, based on the results of the study, the greatest gap in terms of services quality was documented to be between the patient's expectations and perceptions about services quality in reliability and tangibles dimensions. It seems that personnel adornment, physical environment decoration, operation of modern equipment, promotion of organizational commitment, and commitment to promised service, and assurance of the patients by doctors, hospital officials and staff can likely reduce the existing gap and increase the patient's satisfaction of services.

**Limitation:** Given the type of hospital ward, busy time in the hospital, holidays, services quality might be decreased due to the lack of patient's access to some of physicians, authorities, and health personnel that may likely affect patients' perceptions; thus, the data required for this study were collected in different days of the week.

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#### **Conflict of interest**

Authors declare no conflict of interest.

#### **Authors' contributions**

All authors have had equal involvement in the writing of the proposal, designing the study, collecting the data, as well as interpreting the results and writing the report and article.

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