

## Service Quality in Iran's Medical Tourism: Hospitals in Shiraz City

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### Abstract

**Introduction:** Medical tourism is a main source of national income. Thus, evaluating the viewpoints of medical tourists about the quality of service provided by healthcare centers may be useful in planning to develop this industry. The present study aimed to measure the gap between medical tourists' expectations and perceptions of the quality of service offered by the hospitals in Shiraz using the SERVQUAL model.

**Methods:** This cross-sectional study was performed on 200 medical tourists referred to hospitals in the city of Shiraz which is located in the south of Iran. The subjects were selected randomly over the first 6 months of 2013. Data collection tools were a descriptive questionnaire and an adaptation of the SERVQUAL questionnaire.

**Results:** The results showed that the mean age of medical tourists was 49.67 and most of them were from Oman. Overall, the patients' expectations exceeded their perceptions of the provided quality of service, and all gap mean scores were negative. The largest negative gap score pertained to reliability with an overall average of -0.59, followed by responsibility, assurance, tangibility, empathy, and access to care.

**Conclusion:** The research findings can effectively help managers identify problems with the current quality of service and improve performance so as to increase the medical tourists' satisfaction level. Also, highlighting the most important service attributes, which are highly attractive to patients, will help authorities improve their operation performance and develop innovative ideas on both strategic and tactical levels.

**Keywords:** Medical Tourism, Service Quality, Hospitals, Iran

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### 1. Introduction

The travel, tourism, and hospitality industry is one of the main sources of global gross domestic product (GDP) and an important employment generator [1]. Most governments regard it as a guideline for the development of the country [2]. One new form of tourism that has gained huge popularity in recent decades is medical tourism [3], the act of traveling across international borders with the intention of receiving some form of medical treatment [4]. During the past years, patients traveled from developing countries to more developed countries to get medical services unavailable in their own countries. Today, people make international trips to developing countries to receive healthcare. Reasons for this phenomenon include long waiting lists in developed countries, low cost of medical treatment in developing countries, affordable cost of international transportation, development of the Internet, emergence of international communication companies which act as intermediaries between patients and hospital networks and make it easy for patients to access information and prices; and finally, advanced technologies which are new to healthcare services [5].

The low cost and high income possibility of the medical tourism industry has prompted many countries to plan to develop this section of the tourism industry [6]. In the Middle East, Iran is one of the main settings for health tourism due to its potentialities, such as expert physicians, up-to-date medical technology, and natural healing areas [7]. This has recently led to an increase in studies in the field of medical tourism [8-13].

In the south of Iran, Shiraz is a main destination of medical tourists. The reasons for this popularity are that Shiraz University of Medical Sciences is one of the most prestigious

and type one universities in the country and even the world; public and private hospitals in Shiraz are equipped with modern devices and diagnostic and therapeutic equipment and are staffed with professors and experienced doctors. Moreover, this city's proximity to Arab countries in the Persian Gulf makes it a destination for the highest number of admitted medical tourists from these countries, especially Oman, and most of them receive ophthalmology surgical services [14-16].

Over the last three decades, service quality has been a controversial issue for researchers, and most of the research has focused on measuring this factor [17-21]. Researchers have addressed two important issues: (1) Which factors do customers consider in evaluating the quality of a service? and (2) How can one measure the quality of a service from the customer's perspective? [22].

Pre-service and post-service perceptions are two key issues in the customer's perception of the quality of service which depend on a set of factors called "dimensions of service quality." The difference between these two concepts is defined as the service quality gap, and is essential for identifying the aspects of service that need performance improvement, evaluating how much improvement is required, and assessing the impact of improvement efforts [23]. Introduced by Parasuraman, Zeithaml, and Berry, the SERVQUAL model is one of the most frequently used instruments for evaluating the service quality gap. This scale is designed in the form of a survey containing 22 service attributes grouped into five dimensions: reliability, responsiveness, assurance, empathy, and tangibles [20].

In healthcare research, the quality of care services from the patient's viewpoint has increasingly been measured [24-26]. In such studies, a patient is considered an active consumer of

services rather than merely a passive recipient [27]. In their study, Lim et al. determined the expectations and perceptions of Singaporean patients through the use of a SERVQUAL instrument [28]. In another study, a reformed version of this tool was applied to assess patient satisfaction with health services in Bangladesh [29]. Peprah et al. used an adapted and modified SERVQUAL instrument to capture relevant data, and the gap scores were analyzed for individual statements and for each dimension [30].

Since appropriate quality of medical services is one of the most important reasons for medical travel, evaluating the quality of service from the medical tourists' perspective may be useful [31]. In Binti Ahmad et al.'s study, the efficacy of the medical tourists' expectations and perceptions of the service quality and a comprehensive scale, SERVQUAL, were surveyed in Malaysia [32]. Another study in India conducted on medical tourists highlighted the main requirements for delivering high quality service using the SERVQUAL model. It showed that the application of this model enables a hospital engaged in medical tourism to provide superior quality service resulting in customer satisfaction amidst the competition [33]. Moreover, Guiry et al. used the SERVQUAL scale to assess U.S. medical tourists' expectations and perceptions of the quality of service in healthcare facilities located outside the United States [34]. More studies have also focused on patient viewpoints of medical performance using this instrument [24, 34, 35].

The impact of the medical tourism industry on increasing revenues makes evaluating the service quality gap between medical tourists' expectations and perceptions seem helpful. Therefore, this study aimed to identify the service quality gap of medical tourists referred to Shiraz hospitals using the SERVQUAL model.

## 2. Methods

This study was a cross-sectional survey conducted on medical tourists from countries bordering the Persian Gulf who were referred to private hospitals in Shiraz (including Ordibehesht, Doctor Khodadoust, Pars, Madar and Koudak, Markazi [MRI], and Dena hospitals).

This project was confirmed by the Ethics Committee and the Research Council of Isfahan University of Medical Sciences. The only inclusion criteria was the informed consent of medical tourists to participate in the study. Data was collected over the first 6 months of 2013 through simple random sampling. It should be noted that public and other private hospitals in the city were excluded due to their low number (if any) of medical tourists (at least <10 patients each month).

In the present study, two questionnaires were used. The first one contained 14 descriptive questions regarding age, sex, marital status, education level, place of residence of the patients and his companions, nationality, type of travel to Iran and Shiraz, source of information which the patients achieved from the selected hospitals, type of medical treatment demanded by patients, and length of stay in the city and hospital; all this data was collected upon admission.

The second one was a modified version of the SERVQUAL instrument used to determine the gap between medical tourists' expectations and perceptions of the quality of service provided by the selected hospitals. This instrument contained 22 items grouped into the six dimensions of tangibles, reliability, responsiveness, assurance, empathy,

and access to care that were measured on a five-point scale with (1) indicating 'very low' and (5) 'very high'. For ease of completion, both questionnaires were translated into Arabic and English. In English, two separate questionnaires existed for the SERVQUAL model to appraise the patients' expectations and perceptions. As both of them were the same in the content and number of questions, but in Arabic, these questionnaires were the same. The SERVQUAL instrument's validity was confirmed by experts. To evaluate its reliability, the researchers randomly selected 30 medical tourists in a pilot study. After explaining the objectives and purpose of the study, they tried to get valuable feedback from the patients. The reliability was confirmed by Cronbach's Alpha test (92.6%).

The patients' descriptive information and their "expectations" from the hospital service were gathered upon admission using the questionnaires. Then on the day they were discharged from the hospital, the researcher asked their perceptions of the service. Finally, the gathered data was analyzed using SPSS software version 16.0.

## 3. Results

Due to the limited number of medical tourists and a lack of cooperation from a large number of them, only 200 questionnaires were completed by medical tourists who referred to selected hospitals during the 6-month study period; most of those patients (70) referred to Dr. Khodadoost hospital.

A part of the descriptive statistics results are shown in Table 1. As can be seen, 128 (64%) patients were male and 72 (36%) were female. Mean age was  $49.66 \pm 16.04$ , and minimum and maximum ages were 1 year and 97 years, respectively; 154 (77%) patients were married, 20 (10%) were single, 12 (6%) were divorced, and 14 (7%) were widowed. Educational status and type of therapeutic service that patients received are also reported in Table 1. The findings also showed that 160 (80%) patients were from Oman, Kuwait, and Iraq, 101 of whom (50.5%) came from Oman. To access the detailed descriptive information, refer to Jabbari et al.'s study [14].

Table 1. Demographic data (n = 200)

Variable	n (%)
Gender	Male 128 (64)
	Female 72 (36)
Marital status	Married 154 (77)
	Single 20 (10)
	Divorced 12 (6)
	Widowed 14 (7)
Education	Low literate 115 (57.5)
	High school diploma 85 (42.5)
Type of therapeutic service	Eye 132 (66)
	Plastic surgery 28 (14)
	General 29 (14.5)
	Fertility and infertility 11 (5.5)

Paired T-tests were carried out to determine any significant differences between the two means of expectations and perceptions regarding the quality of service offered by the hospitals. Table 2 shows the means, difference scores, T value, and significance obtained through the evaluation of each service quality dimension. In this table, the gap mean score for each dimension was calculated by subtracting the perception mean from the expectation mean. A positive mean score shows good expected service, while a negative one shows poor quality service. Although all resulting mean

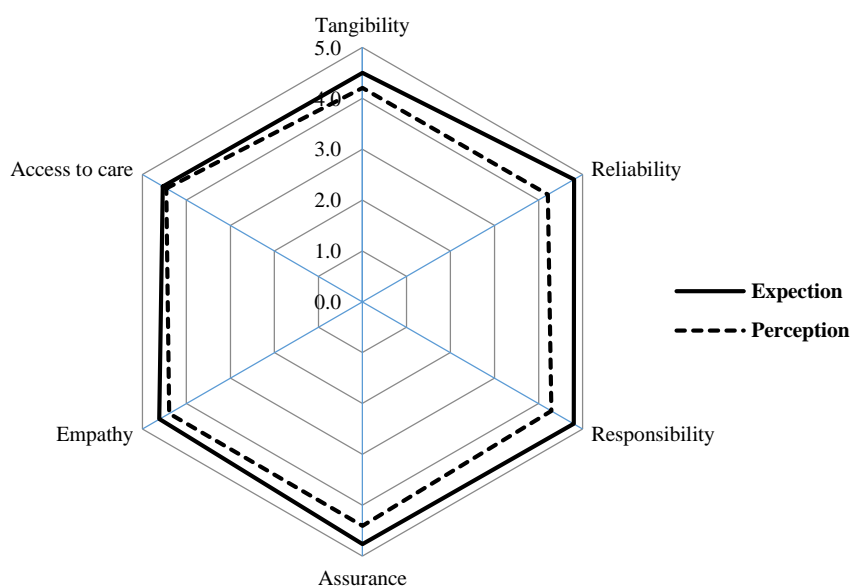
scores for expectation and perception were greater than 4 and this indicates a good quality of service provided for patients, the resulting gap mean values for all dimensions were negative, thus revealing the poor service quality in the patient's viewpoint as compared with their expectations. This difference can be observed easily in Figure 1. This figure is a radar chart generated based on the mean scores of SERVQUAL dimensions. In this chart, hexagonal vertices represent the dimensions, and the distance between the line

and the dash represents the gap between the means of expectations and perceptions.

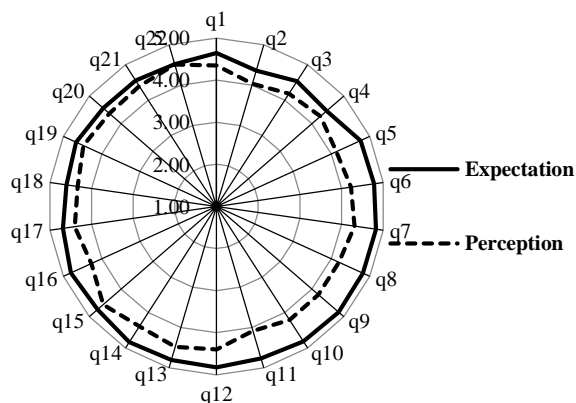
All differences were statistically significant except the value related to the sixth dimension, access to care. The biggest gap was related to reliability, which shows that medical tourists were very dissatisfied with the reliability offered by the hospitals. The second dissatisfaction attribute is related to responsibility.

**Table 2.** The means, difference scores, T value, and significance obtained through the evaluation of each service quality dimension

DIMENSION	Mean (SD) Expectation	Mean (SD) Perception	Mean (SD) Gap	T value	p-value
Tangibility	4.5 (0.41)	4.21 (0.55)	-0.3 (0.51)	-7.321	<0.001
Reliability	4.81 (0.38)	4.21 (0.65)	-0.59 (0.65)	-10.049	<0.001
Responsibility	4.8 (0.38)	4.29 (0.64)	-0.51 (0.62)	-9.489	<0.001
Assurance	4.77 (0.37)	4.41 (0.58)	-0.36 (0.55)	-8.396	<0.001
Empathy	4.61 (0.44)	4.39 (0.54)	-0.22 (0.54)	-6.466	<0.001
Access to Care	4.54 (0.57)	4.46 (0.65)	-0.08 (0.69)	-1.657	0.098



**Figure 1.** Expectation – Perception Gap Analysis (SERVQUAL dimensions)



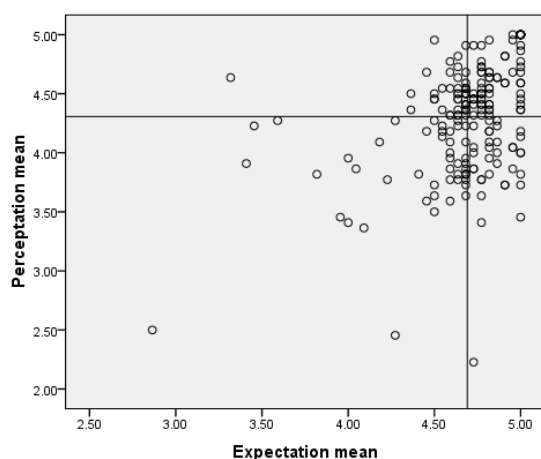
**Figure 2.** Expectation – Perception Gap Analysis (SERVQUAL questions)

Table 3 shows the means, difference scores, T value, and significance obtained through the evaluation of each question related to each dimension. As seen in this table, all expectation and perception means were greater than 4, but the resulting gap means for all questions were negative. Moreover, this table shows that the biggest gap was related to providing prompt service. This difference can be observed easily in Figure 2.

Figure 3 indicates the scatter plot of perception versus expectation means for all subjects under study. Two vertical and horizontal lines were drawn based on overall expectation and perception means, respectively; as shown, the overall mean of expectation was more than that of perception (4.7 vs. 4.3). As also seen in this figure, most case scores were set above 4; this reflects the patients' perspective of high quality of service.

**Table 3.** The means, difference scores, T value and significance obtained through the evaluation of each question

Dimension	Variables	Mean(SD) Expectation	Mean(SD) Perception	Mean (SD) Gap	t value	p-value
Tangibility	Up-to-date medical equipment	4.65(0.59)	4.35(0.82)	-0.3(0.85)	-4.98	<0.001
	Visually appealing physical facilities	4.37(0.57)	4.04(0.8)	-0.33(0.76)	-6.16	<0.001
	Doctors and staffs are neat in appearance	4.54(0.62)	4.18(0.81)	-0.36(0.81)	-6.21	<0.001
	Visually appealing facilities associated with hospital service	4.47(0.55)	4.27(0.77)	-0.2(0.79)	-3.47	0.001
<b>Tangibility Score</b>		<b>4.5(0.41)</b>	<b>4.21(0.55)</b>	<b>-0.38(0.44)</b>	<b>-7.321</b>	<b>&lt;0.001</b>
Reliability	Proper and on time services	4.76 (0.57)	4.13(0.97)	-0.63(0.96)	-9.25	<0.001
	Sympathy and reassurance to patients when they face problems	4.78 (0.48)	4.23(0.91)	-0.56(0.85)	-9.18	<0.001
	Building trust and giving correct information about the process and services to patients by staffs	4.83 (0.46)	4.32(0.82)	-0.51(0.8)	-9.065	<0.001
	Provision of services at the time they promise to do so	4.82 (0.48)	4.2(1.02)	-0.63(0.99)	-8.932	<0.001
	Keeping the patient records accurately	4.84 (0.42)	4.2(0.91)	-0.64(0.95)	-9.515	<0.001
<b>Reliability Score</b>		<b>4.81(0.38)</b>	<b>4.21(0.65)</b>	<b>-0.3(0.51)</b>	<b>-10.049</b>	<b>&lt;0.001</b>
Responsibility	Telling the patients exactly when services will be performed	4.81(0.52)	4.21(0.91)	-0.61(0.96)	-8.903	<0.001
	Giving prompt service to patients	4.77(0.52)	4.08(0.94)	-0.69(0.85)	-11.422	<0.001
	Continuous willingness to help patients by staff members	4.83(0.42)	4.4(0.8)	-0.43(0.82)	-7.438	<0.001
	Providing the patient with requested services promptly	4.81(0.48)	4.48(0.76)	-0.33(0.8)	-5.86	<0.001
<b>Responsibility Score</b>		<b>4.8(0.38)</b>	<b>4.29(0.64)</b>	<b>-0.59(0.65)</b>	<b>-9.489</b>	<b>&lt;0.001</b>
Assurance	The effect of doctor and staff behavior on patients' confidence	4.84(0.46)	4.39(0.88)	-0.45(0.91)	-6.978	<0.001
	Feeling safe in the payment to the hospital by patient	4.74(0.51)	4.57(0.68)	-0.18(0.67)	-3.703	<0.001
	Polite behavior with patients	4.8(0.45)	4.27(0.81)	-0.53(0.79)	-9.502	<0.001
	Knowledge and expertise of personnel in response to patient questions	4.69(0.63)	4.4(0.76)	-0.29(0.83)	-4.862	<0.001
<b>Assurance Score</b>		<b>4.77(0.37)</b>	<b>4.41(0.58)</b>	<b>-0.51(0.62)</b>	<b>-8.396</b>	<b>&lt;0.001</b>
Empathy	Giving individual attention to the patient	4.6(0.62)	4.34(0.76)	-0.27(0.76)	-4.931	<0.001
	Giving personal attention to patients' real needs and showing interest to them	4.67(0.57)	4.48(0.71)	-0.19(0.62)	-4.326	<0.001
	Listening to the opinions of patients and keeping them apprised	4.57(0.6)	4.37(0.67)	-0.2(0.71)	-3.99	<0.001
<b>Empathy Score</b>		<b>4.61(0.44)</b>	<b>4.39(0.54)</b>	<b>-0.36(0.55)</b>	<b>-6.466</b>	<b>&lt;0.001</b>
Access to care	Providing appropriate facilities for patient companion	4.55(0.59)	4.4(0.74)	-0.16(0.78)	-2.821	0.005
	Availability of hospital and payable treatment costs	4.52(0.68)	4.52(0.71)	-0.0(0.54)	-0.091	0.925
<b>Access to Care Score</b>		<b>4.54(0.57)</b>	<b>4.46(0.65)</b>	<b>-0.22(0.54)</b>	<b>-1.657</b>	<b>0.098</b>

**Figure 3.** Scatter plot for perception mean vs. expectation mean for all cases

#### 4. Discussion

The medical tourism industry provides new additional financial resources to the healthcare system of every country. One important factor in attracting medical tourists is increasing the level of service quality in hospitals. Studies which research the gap between patients' expectations and perceptions can aid managers in identifying the sources of problems in quality and ways to promote satisfaction levels. In the present study, 200 medical tourists were evaluated. The mean age of the patients was nearly 50 years, and most of them were married. The findings showed that most of

them were from Oman, and the top reason for their referral was professional ophthalmology services.

The main objective of this research was to measure the difference between expectations and perceptions of medical tourists referred to Shiraz hospitals by using the SERVQUAL gap score introduced by Parasuraman et al. [18, 19] to identify problems and evaluate the level of service quality.

According to the results, all gap mean scores were negative, indicating that the patients expected a better quality of service than what the hospitals offered. The dimension with the largest negative gap score was reliability with an overall average of -0.59, followed by the dimensions of responsibility, assurance, tangibility, empathy, and access to care.

A study of U.S. consumers who traveled abroad for medical care showed that reliability had the largest service quality gap between U.S. medical tourists' perceived level of service provided and their expectations, which is inconsistent with the results of the present study [34].

Karassavidou et al. evaluated patient perceptions and expectations of service quality in NHS hospitals located in North Greece. This empirical research revealed that patients' expectations exceeded their perceptions of the provided service quality, which is consistent with the findings of the current study. The researchers concluded that SERVQUAL can be considered a flexible tool, because it allows them to incorporate the idiosyncrasies of a specific industry and/or national context [36].

Wong *et al.* used the SERVQUAL instrument to study the quality of service provided for ambulatory clients at the Bone Densitometry Unit in Royal Brisbane Hospital. According to their results, the dimensions of responsiveness, assurance and empathy were more important predictors of overall service satisfaction. Perception scores better predicted overall satisfaction than gap scores [37].

In another study, the SERVQUAL instrument was used to compare the service quality provided in public and private hospitals in Northern Cyprus. Based on analysis, private hospitals had smaller gaps than public hospitals in all service quality dimensions. In addition, reliability, empathy and tangibles were influential factors on patient satisfaction [38]. Still other studies have indicated that quality of service, from the patient's perspective, requires that the medical staff show respect, empathy, and concern in addition to having some traditional items like professional skill. Observing these factors makes patients trust and rely on a hospital more and continue to refer there for future medical treatments [39-41].

## 5. Conclusion

Using perceived service quality provides healthcare businesses with a deep understanding of their service quality levels from their patients' perspective. Highlighting the most important service attributes, which are highly attractive for patients, helps management improve their operational performance and develop innovative ideas on both strategic and tactical levels.

The results of the current study suggest that the managers of the studied hospitals should re-evaluate their strategies on giving more reliability and responsibility to their patients, because these two dimensions can significantly affect the satisfaction levels of medical tourists. Promoting these two attributes can lead to improvement in other attributes as well, because a defect and gap in a dimension causes a drop in quality in other aspects of service from the patients' perspective.

Data analysis suggested that, to reduce the gap in reliability, hospital management can instigate policies giving medical tourists further information about the knowledge, skills, and abilities of doctors and nurses. This strategy would make patients more confident in the hospital staff. In addition to increasing staff responsibility, authorities should encourage their staff to respect patient requests and deliver prompt service while showing interest.

This study had some limitations. First, the process of completing questionnaires at two different times caused some patients to refuse to answer the questions on admission or discharge. Moreover, to complete the questionnaires, it was necessary to get permission from all relevant authorities in the healthcare centers. The medical tourism industry was new in the city and some managers were unfamiliar with it. Lack of appropriate cooperation from some managers was another limitation.

This research can be extended into a study to evaluate the quality of service in all public and private hospitals in the country that provide services to medical tourists. Moreover, a study which compares the quality of services in the view of internal patients and medical tourists may be useful.

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## Authors' Contributions

All authors contributed equally in the preparation of this paper.

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