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Gap analysis between expectation-perception of service quality–patients' viewpoint

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ABSTRACT

Introduction: Service quality is the judgment of patients based on their perception of the services they have received. The perception will be compared with patients' expectations in order to have a judgment about services quality. The aim of this study was to determine the gap analysis between expectation-perception of service quality from the patients' viewpoint.

Material and methods: This is a descriptive survey study involving 550 outpatients in Ahvaz University of Medical Sciences teaching hospitals during 2015. SERVQUAL questionnaire was used to data gathering (α expectation = 0.88 and α perception = 0.85). Descriptive statistics as well as Friedman test and *t*-test were performed using SPSS16 for data analysis.

Results: A significant difference was observed between the perception and expectation of patients based on aspects of the service quality questionnaire ($P \leq 0.004$). The smallest gap between perception and expectation was for the component of confidence (*P*-Value = 0.004) and the biggest gap was for the immediate and timely attention (*P*-Value = 0.0001). Finally, Persian language patients had perceived better quality than other patients in the mentioned dimensions of the selection the service providers, communication and interaction, continuity of service, quality of facilities and basic amenities, respect, immediate and timely attention, safety, prevention and the total quality (*P*-Value ≤ 0.037).

Conclusions: In general, service quality was lower than the expectations of the patients in the studied hospitals. Identifying the gaps in service quality dimensions and employing proper policies will lead an improvement and patient's satisfaction.

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Introduction

The growing advances in medicine and increased awareness and expectation of customers have caused the healthcare providers to be more customer-oriented [1]. Service quality is a distinctive factor and competitive advantage that most of the organizations have at their disposal. Today, delivering superior services through maintaining high levels of quality is considered as a prerequisite of success in organizations [2,3]. As the perception, measurement and improvement of the service quality are major challenges for all the organizations providing healthcare services [4]. Quality has three dimensions: technical quality (accuracy in diagnoses and medical procedures), customer quality (patients' literacy) and the service quality (through giving service to the patients). Since most patients lack the knowledge of evaluating the technical quality, service quality has been evaluated [5]. Most of the organizations are interested to assess their service quality strategies to improve the customer satisfaction and as a result, their survival.

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For this reason, they consider the customer as a key indicator in this assessment in the process of the evaluation [6]. Quality of services is a function of the differences between expectations and performance (perceptions) through quality dimensions [7]. If expectations were more than perceptions, then the quality of received services, from the perspective of customer, is low and the result is dissatisfaction of customer [8]. It is true that perceptions about the quality of service have multiple dimensions, but no consensus is available on the nature of these dimensions and thus its assessment is very difficult [7]. Therefore, it can be argued that the quality of service is a judgment that customers do based on their perception of the process of receiving health services. In fact, the judgment is a comparison between the customers' perceptions about service quality and their expectations [9]. Expectation means the wants of customers, i.e., what they feel that the service provider should supply to them "what there should be" and perception is customers' evaluation of the services "what it is" [10,11].

One of the approaches that are often used in determination and evaluation of the quality of health services is the SERVQUAL tool. The SERVQUAL is a tool to evaluate ten measures of service quality including: reliability, responsiveness, empathy, polite and kindness, assurance, security, access, communications, understanding or recognition of customer and tangibles. In fact, this tool measures the gap between the expectations and the experience of customers. In early nineteenth century, Parasuraman and Zeithaml [1] decreased the above ten factors to five factors and named the new model RATER, which stand for five dimensions of reliability, assurance, tangibles, empathy, and responsiveness. This model is used in many organizations and industries as well as in hospital environments to assess the quality of services so as its reliability is confirmed through different studies [12–14]. In a research, the most important aspects of quality of medical services in hospitals were introduced to be communications, costs, facilities, skills and behavior [15]. In another study in Thailand, the most important aspects of the quality of medical services were introduced as communications, responsiveness, honesty and cleanliness of the environment [16]. the process of adoption, medical cares, nursing cares, compassion for the family, cleanliness and neatness of the hospital's environment were introduced as the key dimensions of the quality of hospital services in United States [17].

In their study using SERVQUAL questionnaire to examine ICU patients comments has showed a positive significant gap between the perception and expectations of the patients in all aspects of quality, with the greatest gap for the tangibles dimension [18]. In another study, Anderson [19] in cancer clinics of Texas University showed that among the components of quality, the most important component from the patient's perspective was reliability. In a case study by in Isfahan University of Medical Sciences teaching hospitals, the greatest and the smallest gaps were for responsiveness and tangibles, respectively [20]. A study has showed that women had disagreement in all the five dimensions of service quality in relation with the healthcare service. The lowest and the greatest average differences were associated to assurance and empathy, respectively [21]. Significant difference was found between expectations and perceptions of outpatients about five dimensions of service quality in Tehran hospitals. Also patients ranked the ensuring and responsiveness of employees as the most and least important dimensions, respectively [22].

Hospitals are the most important organizations in a health care system, which in terms of resources are associated with 50% of the health care costs so evaluating the quality of services seems to be necessary [23]. Providing sufficient information on the content of customer's perception about the quality of service could help organizations to identify their weaknesses that affect the organization's competitive advantage and preventing the waste of resources. The aim of this study was to examine the services quality of services provided in teaching hospitals of Ahvaz from the patients' viewpoint.

Research Methodology

This is a cross-sectional study that was carried out in 2015. The study population included outpatients who had visited clinics in teaching hospitals of Ahvaz university of Medical Sciences (from 09 April to 20 May).

To determine the sample size, Cochran sampling formula with values $p = 0.5$, $q = 0.5$, $z = 1.96$, and $d = 0.2$ was used. The sample size (n) was calculated as 550 including 25 patients for each of 22 specialties in clinic.

To collect the required data, we used the SERVQUAL questionnaire, which measured the quality of services from the perspective of patients. The SERVQUAL questionnaire is composed of two

parts. The first part includes 36 questions related to items of patients' expectations (examining the ideal situation) and the second part includes 36 questions relating to questions about the patients' perception (examining the status quo). Each of these sections is consisted of eleven dimensions: choosing the service provider, communication and interaction, having authority, continuity of service, quality of facilities and basic amenities, respect, immediate and timely attention, safety, prevention, access and reliability. To determine the questionnaire's reliability, Cronbach's alpha was calculated as 0.88 for the expectations and 0.85 for the perception (Table 2). In addition, to determine the questionnaire's validity, the comments of scholars and professors were used (content validity ratio = 0.75). For the scoring, a five-point Likert scale was used (with very poor: 1 and excellent: 5 for the performance; and unimportant: 1 and essential: 5 for the importance), which the resultant gap showed the difference between the expectations and perceptions of the patients. The interpretation of the results for perceived quality average scores was as (1–2: weak, 2–3: relatively weak, 3–4: relatively good, more than 4: good). Similarly, the interpretation of the results for patients' expectations average scores was as follows: (1–2: weak, 2–3: relatively weak, 3–4: relatively good, more than 4: good).

Consecutive sampling method was used to select the patients. Questionnaires were taken to the outpatients by the researchers. First, the researchers have introduced themselves to the outpatients and then explain the patients about the study. If they were satisfied to participate in the study, they were requested to fill the first part of the questionnaire (expectations) before the entrance of the physician room. When the same patient was to leave the room, he/she was requested to fill the second part of the questionnaire (perception).

Data were analyzed using SPSS 16. Data analyzing was done through descriptive statistics, t-test, paired t-test (for testing the significance of the gap between the expectations and perceptions of the patients), Friedman test (to rank each of the relevant factors of the service quality).

Results

In this study, 550 patients participated that their demographic characteristics are presented in Table 1.

Generally, the smallest gap resulting from differences in perceptions and expectations was associated to the item of having the right of choosing between the clinics (−0.05). On the other hand, the greatest gap between the perception and expectation of the patients was for the item of "waiting less than 15 minutes in the waiting area" with the value of −1.84. The mean and standard deviation of the scores of perception, expectation and quality gap for each dimension of the service quality and items relating to it from the patients' viewpoint are presented in Table 2.

Table 1. Demographic characteristics of the patients (n = 550).

Variable		Number	Percent
Sex	Male	205	37.3
	Female	345	62.7
College education	Yes	162	29.5
	No	388	70.5
Marital status	Married	350	63.6
	Single	200	36.4
Age (years)	<20	116	21.1
	20–40	177	32.2
	>40	257	46.7
City	Ahvaz	341	62
	Other	209	38
Language	Arabic	287	52.2
	Farsi	90	16.4
	Other	173	31.5

In the following, Table 3 presents the ranking of the quality of services. The highest rank is for the component of confidence (P-Value = 0.004) with the smallest gap and the lowest rank was for the immediate and timely attention (P-Value = 0.0001) with the biggest gap. Results indicate a significant gap between the perception and expectation of patients for all the dimensions of service quality. The patient's expectation in dimensions including "immediate and timely attention", and "communication and interaction" and "quality of facilities and basic amenities" was ranked as high and in other dimensions was ranked as relatively high. The patients' perception of "immediate and timely attention", "safety", "prevention", "selecting the service provider", and "having authority" was relatively low and for other dimensions was ranked as relatively good.

Quality dimensions from the patients' perspective were different so that patients ranked the respect and prevention as the most important (6.96) and the least important (4.98) dimensions, respectively. Friedman test results are presented in Table 4.

Finally, to examine the significance of the relationship between demographic variables and each dimension of the perceived quality by patients,

Table 2. Mean and standard deviation of the scores of perception, expectation and quality gap for each dimensions of the outpatients' visit service quality in hospitals affiliated to Ahvaz University of Medical Sciences.

Dimensions of service quality	Items	Mean and standard deviation		Gap
		Perception	Expectation	
Selecting service provider	Having a choice between hospitals	2.52 ± 1.00	0.78 ± 3.57	–1.05
	Having a choice between clinics	3.14 ± 1.10	3.19 ± 0.90	–0.05
	Having a choice between specialists	3.23 ± 1.02	3.91 ± 0.88	–0.68
Communication and interaction	Possibility of asking questions from doctor about your disease	3.28 ± 1.19	4.61 ± 0.74	–1.33
	Listening doctor to your concerns and answer the questions friendly	3.12 ± 125	3.82 ± 1.23	–0.70
	Receiving adequate information from doctor about your disease	3.01 ± 1.18	4.33 ± 0.93	–1.32
	Transparency of received information from doctor about your disease	2.87 ± 0.98	4.45 ± 0.87	–1.58
Authority	Participation of patient in care making-decision	2.89 ± 1.13	3.10 ± 0.91	–0.21
	Having the power to choose or refuse prescribed care by patient	2.72 ± 1.04	2.93 ± 1.03	–0.21
	Getting consent from patient before starting test or care	2.99 ± 0.86	3.36 ± 1.01	–0.37
Services continuity	Possibility of introducing a doctor Near the residence of the patient to avoid referring again for routine visit	2.22 ± 1.00	3.18 ± 0.85	–0.96
	Possibility of visiting previous doctor	3.81 ± 1.33	4.21 ± 0.89	–0.40
	Possibility of using patient's previous medical information by other doctors if visit another doctor	3.06 ± 1.33	3.65 ± 0.83	–0.59
Quality of facilities and basic amenities	The appropriateness of hospital staff's personal hygiene	3.78 ± 1.12	4.12 ± 0.93	–0.34
	Cleanliness hospital environment	3.20 ± 1.08	4.47 ± 0.74	–1.27
	Enough lounge chairs	2.66 ± 1.15	4.30 ± 0.90	–1.64
	Cleanliness bathroom and toilet of hospital	3.27 ± 1.13	3.70 ± 1.03	–0.43
Respect	Behaving courteous by doctor	3.18 ± 1.47	3.86 ± 1.01	–0.68
	Respecting doctor to the patient's beliefs and values	3.35 ± 1.13	3.68 ± 1.06	–0.33
	Doctors encourage patients to express feelings and concerns about their disease	3.00 ± 1.11	3.54 ± 1.02	–0.54
	Respecting patient privacy during testing and caring	3.21 ± 0.99	3.70 ± 1.03	–0.49
	Offering information to the patient's family or his/her relatives to help caring	3.49 ± 1.28	3.93 ± 1.07	–0.44
Immediate and timely attention	Waiting less than 15 minutes in the waiting lounge	2.43 ± 1.02	4.27 ± 0.99	–1.84
	Easy turn making for doctor's visit	3.13 ± 0.99	4.29 ± 0.93	–1.16
Safety	Explanation the purpose of administration of testing, caring and prescribing	2.87 ± 0.70	3.78 ± 1.02	–0.91
	Explain to patients or his/him family about side effects of drugs	2.37 ± 0.80	3.84 ± 1.31	–1.47
	Avoid to damage patients (physical and mental) during service provision	3.35 ± 1.02	3.95 ± 1.03	–0.60
Prevention	Doctor Explain symptoms and recovery of disease	2.65 ± 0.91	3.24 ± 1.14	–0.59
	Doctor Explain prevention of the disease to avoid getting worse	2.94 ± 1.56	3.34 ± 1.27	–0.40
	Educating patient on self-care proceedings	2.44 ± 0.90	3.44 ± 1.19	–1.00
access	Patient's residence be near to hospital	2.72 ± 1.13	4.23 ± 1.08	–1.51
	Affordability of caring cost	3.75 ± 1.41	4.29 ± 1.09	–0.54
	Adjusting Healthcare service and testing with patient's beliefs	2.56 ± 1.26	3.29 ± 1.30	–0.73
Confidence	Ensuring from information confidentiality that give to doctor	3.31 ± 1.08	3.47 ± 1.01	–0.16
	Ensuring from information confidentiality of available in the medical record	3.06 ± 1.33	3.13 ± 0.89	–0.07
	The reliability of the hospital	2.71 ± 1.05	2.97 ± 0.91	–0.26

independent t-test was used, which confirmed the significant differences between the patients city in service provider selection (*P*-Value = 0.001). Therefore, patients living in Ahvaz had perceived better service quality in the dimension of "selecting the service provider". In addition, a significant relationship was observed between the variety of patients language and dimensions of the selection the service providers, communication and interaction, continuity of service, quality of facilities and basic amenities, respect, immediate and timely attention, safety, prevention and the total quality (*P*-Value ≤ 0.037). Persian language patients had perceived better quality than other patients in the mentioned dimension of service quality.

Discussion

Results revealed that the difference between perception and expectation for all components of

Table 3. Mean and standard deviation of the scores of perception, expectation and quality gap for each items of the outpatients' visit service quality in hospitals affiliated to Ahvaz University of Medical Sciences.

Dimensions of service quality	Mean and standard deviation		Gap	*P*-Value
	Perception	Perception		
Immediate and timely attention	2.780 ± 0.93	4.282 ± 0.90	–1.502	0.0001
Communication and interaction	3.069 ± 0.99	4.301 ± 0.83	–1.232	0.0001
Safety	2.862 ± 0.72	3.860 ± 1.03	–0.998	0.0001
access	3.009 ± 1.12	3.934 ± 1.00	–0.926	0.0001
Quality of facilities and basic amenities	3.228 ± 0.98	4.146 ± 0.77	–0.918	0.0001
Prevention	2.677 ± 1.00	3.340 ± 1.11	–0.663	0.0001
Services continuity	3.031 ± 1.07	3.675 ± 0.75	–0.644	0.0001
Selecting service provider	2.963 ± 0.94	3.556 ± 0.75	–0.595	0.0001
Respect	3.246 ± 1.03	3.741 ± 0.96	–0.495	0.0001
Authority	2.866 ± 0.87	3.128 ± 0.84	–0.262	0.0001
Confidence	3.027 ± 1.03	3.198 ± 0.89	–0.159	0.004

Table 4. Ranking the quality dimensions of hospitals affiliated to Ahvaz University of Medical Sciences.

Dimensions of service quality	Score
Respect	6.96
Quality of facilities and basic amenities	6.94
Services continuity	6.35
Communication and interaction	6.32
Confidence	6.14
access	6.04
Selecting service provider	5.95
Authority	5.63
Safety	5.36
Immediate and timely attention	5.33
Prevention	4.98

Table 5. Matching consistent items from our study with some items from the previous studies.

Items from our study	Items from the previous studies
"selecting the service provider," "quality of facilities and basic amenities," and "access"	"tangibles"
"trust"	"reliability"
"communication and interaction", and "immediate and timely attention"	"responsiveness"
"respect," "safety," and "prevention"	"assurance"
"having authority" and "continuity of service"	"empathy"

service quality was negative and the negative score of patients' expectations was higher than their perception. This means that patients visiting hospitals affiliated to Ahvaz University of Medical Sciences had perceived service quality lower than their expectations. In fact, none of the hospitals was able to meet the needs and expectations of the patients. This finding is consistent with previous studies like Anderson [19], Kilbourne [24], Janaabadi et al., Zerei et al., Tarrahi et al., and Bakar et al. [27], which concluded that none of the hospitals was not able to meet patients' expectations [7,19,24–27] and is not consistent with studies like Ajam et al. [28] and Bahadori et al. [29]. Joseph et al. [30] pointed out the gap of service performance, (the gap between "what is expected" and "what is perceived"), could be reduced with better and more education of employees [30].

Comparing the study results with the previous studies has showed some consistency in service quality dimensions and Items that are presented in Table 5.

For the dimensions "selecting the service provider", "quality of facilities and basic amenities", and "access", there was a negative gap between perception and expectation of patients, which is consistent with the results of Tarahi et al. [26] and Zerei et al. [25] is not consistent with the result of Bahadori et al. [29]. It was suggested by literature that establishing and strengthening the reservation system through phone and Internet, budget allocation for restoration and modernization of the teaching hospitals, providing financial support by government for outpatients and Increasing the coverage of healthcare services by insurance would be useful to improve patient experience [31–35].

In dimension of "trust" a negative gap between the perception and expectation of patients was seen, which was consistent with results obtained by Tarahi et al., and Bakar et al. [27] and is not consistent with studies like Ajam et al. [28] and Bahadori et al. [29]. The resulting gap was lower in comparison to other dimensions, which is largely due to the low sensitivity of patients about issues such as "privacy" and "assurance", as mentioned in the literature [36, 37].

Also a negative gap of patients' perception and expectation was revealed in dimensions of "communication and interaction" and "immediate and timely attention", which was consistent with results of Anderson [19], Kilbourne et al. [24] and Hu et al. [38]and is not consistent with results of Bahadori et al. [29]. As previous studies had reported this was due to the limited working hours of physicians in the hospitals, the large number of patients, visit of multiple patients together by physicians and the weak queue system of hospitals. Regarding,

setting a proper schedule for physicians in clinics to enhance patients access, making the same tariffs of public and private hospital services and integrating the insurances to make possible the reception of patients by all hospitals could be consequent policies [31,39–41].

Tabibi et al. [22], Zerei et al. [25], and Tarrahi et al. [26] has reported negative gap between patients' perception and expectation, for dimensions of "respect", "safety" and "prevention", which was consistent with our results and results of Bahadori et al. [29] was not consistent with our results [29]. This could be the result of Paternalistic view of physicians, the lack of willingness of physicians to provide appropriate explanations or lack of patient's understanding of their medical explanation, non-native physicians which led to weak communication with patients (Arab patients, Persian Physicians) [32,42,43]. As our results showed most of the patients were Arabian who cannot have an effective communication with the Persian physician. However, patients' language was significantly (P-value < 0.05) related to the perceived quality of services in most of dimensions. Regarding, patient education would be week. Moreover cultural differences appear to be an important issue.

For dimensions of "having authority" and "continuity of service", a negative gap between patients' perception and expectation had revealed, which is consistent with results of Zerei et al., Tarrahi et al., and Bakar et al. [27] and is not consistent with results of Ajam et al. [28] and Bahadori et al. [29]. Electronic health records system is a base for continuity of health services through improving family physician and referral system. Moreover decreasing the information asymmetry between physician and patients would be useful strategy to improve service quality [44,45].

Results revealed that the most important component from the patients' viewpoint was "respect". Grinstead and Timoney in a study had compared patients, staff and managers' viewpoint to the service quality reported that patients and managers had more attention to the performance aspect of quality [42]. Patients expect their physicians to be polite, respect to their beliefs, encourage the patient to express his feelings and concerns about his disease and respect patient's privacy.

Despite the professional skills and knowledge of physicians, their poor communication skills in dealing with patients and not regarding the individual differences, psychological problems and diseases as well as the position of the individual in the socio-cultural system are the major causes of the failure of physicians in the treatment and attracting the satisfaction and trust of patients [46].

However, waiting time of outpatients not only is one of the factors influential on patient's satisfaction, but also it is one measure of evaluating the quality of outpatient services [19,47]. The patients' expectation for being waited less than 15 minutes in the waiting lounge in relation to the dimension of "immediate and timely attention" had the largest gap between expectation and perception of service quality. However, the reasons for it were great number of visiting people and patients who had arrived from nearby cities since the early hours of morning to proceed in the queue of patients as well as the low number of physicians and their working hours in public hospitals. Thus, establishing a queuing system that works well through internet and by phone and proving physicians with more facilities and amenities to increase their motives for working in public hospitals are basic measures that could reduce the mentioned gap [48].

About 38% of patients were non-native that shows their low access to the specialists in their own cities, which in turn leads to spending much time and cost. As a result, non-native patients had perceived significantly low (P-value < 0.05) service quality in access dimension than native people did. Regarding the results, hospital managers should focus their attention and efforts on those aspects of quality that have the highest priority from the patients' viewpoint and to design and improve their services in accordance with patients' expectations [20].

Conclusions

Results revealed that service quality of outpatient services in training hospitals of Ahvaz was relatively good. Negative gap was appeared between patients' perception and expectations of services quality. Considering the fact that poor quality in one aspect of service quality increases negative perception in other quality dimensions, it suggests to employ proper strategies based on the patients' priorities to cover the gaps.

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Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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