Services quality in emergency department of Nemazee Hospital: Using SERVQUAL model

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ABSTRACT

Introduction: Patient satisfaction is crucial to the long-run success in health care center. With regard to the highest patients' referral to the emergency department and the existing challenges due to the patient's need to urgent care, we aimed to evaluate health care services quality in this unit to find out whether the patients have different expectations from health care providers and if they perceive some dimensions of care more important than others.

Method: The SERVQUAL scale method was used in this cross-sectional study on 100 patients in June 2015. Patient satisfaction questionnaire based on SERVQUAL model was evaluated with high content validity and the reliability was 0.97 and 0.81. The data collected were analyzed using SPSS, version 20.0 (IBM, USA). Statistical analyses included descriptive statistics, paired and independence sample t-test and ANOVA at the significance level 0.05.

Results: The results showed that the quality gap in all dimensions was significant (P<0.001). The largest quality gap was related to responsiveness (-1.08) and the lowest belonged to assurance (-0.8). Demographic characteristics were analyzed and the number of referrals was significant in tangibility and assurance dimensions (P = 0.04); also, in all cases the patients' expectations (total Mean=4.35) were higher than their perception (total Mean = 3.295).

Conclusion: In order to improve emergency services, it is recommended that the hospital management should provide appropriate facilities, reduce waiting time, increase in attention to ordering system based on the patients' condition, and improve the behavior of health care personnel to patient is placed on the agenda of hospital management.

Keywords: Management, Quality of service, Emergency department, SERQUAL model

Introduction

In the strategic planning process, provision of quality services and improvement of patient satisfaction are becoming a critical objective and patients need more information than before in order not to switch to another health care provider, so patient satisfaction is crucial to the long-run success and profitability of health care providers (1-3).

The success of a healthcare organization depends on the patients' perceptions of health care quality because this factor particularly affects the patient satisfaction and hospital profitability (4, 5). Studies have shown that patients' behaviors are affected by the quality of the healthcare received, such as loyalty (6).

Satisfying the patients and perceptions of service quality not only enables healthcare providers to identify the activities that require improvement, but also can save the hospitals' time and funds on resolving the patients' complaints (7).

So far, there are various definitions of service quality, two of which are mentioned here. Service quality is stable compatibility with costumer expectations and understanding of costumer expectations of special service, and also service quality judge all aspects of the costumer about the nature of service beyond similar services with its outstanding advantages (8).

Nowadays, patient satisfaction, as one of the most important indicators of the quality of service, is widely discussed in health care industry (9-12). Scottie et al. (2007) investigated the high-performance work system, customer influence, patient perceptions of service quality and patient satisfaction in ambulatory care centers. Their research shows that perceived service quality is one of the

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important determinants of patient satisfaction (13).

Wellstood et al. (2005) also identified perceived and actual waiting time as determinants of patient satisfaction. Dansky and Miles (1997) reported that the total time waiting for physicians is the most significant predictor of satisfaction in the ambulatory care industry; patients expect to be informed about how long their waiting time should be.

Urgent care provides a wide range of medical services for a large number of patients. However, the current health care research indicates that there is a paucity of research on urgent care providers. With the growing presence of urgent care centers in the health care marketplace and the increasing demand for such care, it is essential to understand the patients' perceptions of urgent care providers and what factors influence the patient satisfaction and retention (14).

In hospital centers, most of the patients (about 78%) refer to the emergency department of the hospital for fast and high quality healthcare services in this sector, while the goal of the Ministry of Health indicates providing such services in the whole hospital (14-16), and because patients need special care and treatment immediately, perception of the problems of patients in the emergency department in order is essential to create their satisfaction. But compared to other parts of hospital, emergency departments have challenges which may lead to a decrease in patient satisfaction (17, 18).

The World Health Organization (WHO) recognizes the following as basic components in health care quality: a high grade in professional excellence, an efficient use of resources, minimal risks to patients, and clients' satisfaction and recovery. Hospitals' emergency services, despite the characteristics that differentiate them from other levels and care services, cannot be left out from evaluation and quality control. Patient's care in an emergency unit is under a continuous scrutiny and evaluation, probably more than other medical units, by patients as well as doctors who take care of the patients, once they are discharged from the emergency unit. This culture of continuous self-evaluation and external evaluation, far from representing a difficulty, constitutes an opportunity to put in place programs of quality evaluation concerning the care delivered in those services (19)

All the professionals in an emergency unit are involved, in a greater or lesser degree, in improving quality; even though the technical quality in care service is essential, there are other conditions, not in a lesser degree, which influence in a very decisive manner the way the patient and companions perceive the quality; such as giving the certainty that the organization is efficient, an adequate attention, and that the information constantly delivered during the process is reliable.

Patients must feel, as part of the health system, that the assistance they receive in a hospital is coordinated, efficient, and guaranteed. Therefore, searching for an efficient operation in the health service and particularly in hospitals leads to finding instruments and quality models more efficiently. In that manner, measuring quality service is a matter of discussion and research by experts in the field; however, most of the authors pointed out that the studies were initiated by Parasuraman, Zenithal, and Berry (1982, 1985, 1988), where Servqual (Service Quality) was validated as the model with the most diffusion and application for measuring quality service (20).

Servqual tool which is widely used was designed based on the gap or difference between perceptions and expectations (Q = P-E) to measure the quality of the service provided to customers. The benefit of quality of services is another factor that encourages the organizations to provide quality service (21) through which customers can compare services offered by various organizations. This tool has been adjusted and used in many industries; it has been studied in many experimental studies in the hospital environment and its validity and reliability have been confirmed (22). For example, Eskardina and Eric have reported that Servqual has the highest level of reliability and validity for quality service in medical care (23).

Servqual tool is invented with regard to the five dimensions of service quality including tangibility, reliability, responsiveness, assurance, empathy and other dimension as accessibility which was later added to the previous questionnaire by Yuseph Fayak to adapt to hospital environment during their studies at hospitals in England. Full description of them is as follows:

Tangibility: Facilities or equipment and communication that the customer will consider for quality assessment like amenities in the physical environment of the organization and the staff appearance.
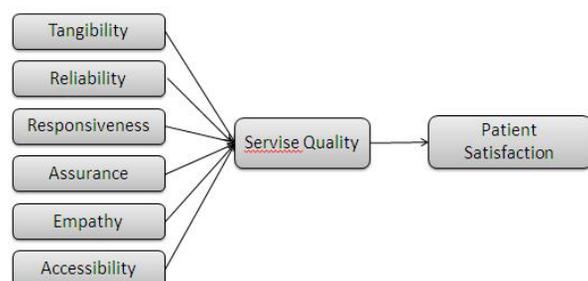
Reliability: The ability to do secure and reliable services so that the customers' expectations are met.

Responsiveness: Willingness to cooperate and assist the customer and provide quick service. This dimension of services quality includes sensitivity and awareness of the requests, questions and complaints of the customers.

Assurance: It represents the competence and ability of employees to induce a sense of trust in the client. This dimension of service quality is important in services that have higher risks.

Empathy: Closeness, empathy and personal attention, especially for all customers, and effort to understand their needs and their provision. (24). Of the five dimensions, reliability and secondly assurance, as the most important predictors of quality, are studied in the service industries (25). Definitions are summarized in Figure & diagram 1.

Figure 1. Service quality model

Source: H.Qin -V R. Prybutok, 2009

This model enables the managers to realize service gap and cause of these gaps (26).

Although there is little research in the field of urgent care, so far SERVQUAL has been used in most research to assess service quality gap in hospitals and health care centers; for example, Nurihekmat (2006) in his evaluation of health care services quality in Rasool Akram hospital showed that the quality of care does not meet the needs and expectation of the patients (27).

Ezzatabadi et al. (2010) in a cross-sectional study entitled "Gap analysis between perceptions and expectations of service recipients through Servqual approach in Yazd, Afshar Hospital", show that there was a gap between the expected and perceived of hospital services for patients (28).

The results of the study by Jenabady et al. (2010) entitled "The gap between expectations and perception of the quality of health care in health care services provided in health care centers of Zahedan using SERVQUAL model" on 200 patients showed that there were differences between the mean scores of perceptions and expectations in all aspects of quality (29).

Moreover, Arjmand (2011) conducted a study entitled "Determination of the gap between expectations and perceptions components of quality of health care of patients in Shiraz University of Medical Sciences of Shiraz". The results showed that the smallest gap in the quality of the services was in empathy in two parts. The highest gaps in ophthalmology department were found in responsiveness dimension and assurance in children department (30).

In Tarahi et al.'s (2010) study entitled "The quality of health care services provided in health care centers of Khorramabad using SERVQUAL model", it was concluded that the quality of services provided that there were negative gaps in all dimensions of quality. The greatest gap in the quality was in empathy dimension and the lowest was related to reliability (31).

In another study by Rajabi Purmeybody (2009) entitled "Evaluation of Remedial Services quality of hospitals by using SERVQUAL scale" in teaching hospitals affiliated with the university of Sadoughi Yazd, it was shown that there were differences between the importance of tangiblity, reliability, responsiveness and empathy in a prestigious hospital in terms of patient satisfaction and the quality of the hospital services was lower than the expected level (28).

Lim and Tang (2000) carried out a study to evaluate the perception and expectation of quality of hospital services in Sangapure. The results showed that the lowest perception rate of quality was related to responsiveness while in terms of their expectation this dimension was in the second order and assurance was in the fourth rank. There was a difference in the 5 dimensions of patients' expectations and perceptions (32).

Also, Karasavyde et al. (2009) in a study on health care quality in the Greek national medical hospital have shown that there is a quality gap between expectations and perceptions of service quality in hospitals so that the patients' expectations of service quality were much more than the quality of services which were provided (33).

Dionne (1999) in a study on patient care centers of mother and child in Australia has proved that there is a gap in the quality of services in these centers and tangibility, empathy and reliability are the most important dimensions that should be considered in this centers (34).

Wang (2002) in another study on patients with bone density in hospitals in Australia has concluded that reliability, assurance and empathy were the most important dimensions causing gap of the quality of services in these sectors (35).

Moreover, Kaha (2007) in a research on "service quality in Turkey private hospitals" concluded that in this country because of individual perception of the quality of services, private hospitals were closer to their expectations. Therefore, they prefer to receive their required services from private hospitals instead of public ones (36).

Emergency department of Nemazee hospital as the most important health centers to provide services for the province has a special place in the whole country, because firstly this section is related with the majority of the people and more importantly, the great mission of health care for the life of society is responsible for this section. Unfortunately, despite the importance given to this sector, the method of the services delivered by this section often follows the community's dissatisfaction. This study was performed to evaluate the quality of health care in emergency department of Shiraz Nemazee hospital from the perspective of patients and tries to fill the gap in the quality of healthcare services by developing a new tool in the quality of services of emergency department. The results of this research will help to improve the management and quality of the emergency care centers and it provides the managers with valuable insight about non-clinical aspect of quality hospital services provided.

Method

A) Sample size calculation:

This is a cross-sectional study and the population of this study included all patients who referred to the hospital in order to receive emergency services in July 2015. The sample size for α=0.05 and β=0.2, d=u1-u2 was obtained 100 number (formula1) and the sampling method was simple random.

$$n = \frac{\left(z_{1-\alpha/2} + z_{1-\beta}\right)^2 \sigma^2}{d^2}$$

Formula1: Calculation of the sample size

B) tools and data collection:

In this study, inclusion criteria were patients older than 18 years old and giving informed consent to participate in the study; also, it should be noted that this project was confirmed by Ethics Committee and also Research Council of Shiraz University of Medical Sciences. And due to some administrative problems, unconscious patients who referred to the emergency department of the hospital and other problems in CCU and also children's ward, we excluded these wards.

Data were collected through two questionnaires in

two parts. The first section included questions about consumers' demographic profile and the second part contained questions related to the perceptions (second questionnaire). The patients filled out the questionnaire after they received healthcare services and expectations (pretest questionnaire) of quality of care provided that patients filled out it before they received healthcare services. Both questionnaires were identical in terms of content and the number of questions, but they differed in their wording.

This section of the questionnaire according to SERVQUAL scale contained five dimensions of service quality consisting of 28 questions, the tangibility (questions 1-5), reliability (questions 6-11), responsiveness (questions 12-16), assurance (questions 17-23), and empathy (questions 24-28). Each question had five choices (very good, good, average, bad, and very bad); 5 point Likert scale from 1 (very bad) to 5 (very good) was used.. It is noteworthy that questions related to the reliability of services were not considered by the qualified professionals' perspectives and they were evaluated by lay people's opinion. This questionnaire has been used in several studies in Iran and is reliable and valid. Cronbach's alpha coefficient for perception questioners was 97% and for expectation questionnaire it was 81%

SPSS version 18 was used to analyze the data using descriptive and inferential parametric paired sample t-test, independent sample t-test and analysis of variance.

Results

Descriptive data of the distribution of respondents by demographic characteristics showed that among 100 patients, 65% were women and 58% were aged over 50 years. The mean age of the study group was 54.4 +19/35. 43% of the patients were educated lower than high school and 85% were married. 98% of them were under insurance care and 42% had internal problems (19% digestive). In this study, 24% of patients were hospitalized for 1 to 12 hours and a total of 73 percent of them were more than one day in emergency department and received services (Table 1).

There was a negative quality gap in all 6 dimensions and it means that this center in any of the six components of quality of service has failed to meet the expectations of patients and always perceived quality has been lower than expected. The lowest mean of the quality of gap was related to assurance (-0.8) and the highest mean was related to Responsiveness (-1.08), Empathy and Reliability (-0.94). Actually, the quality gap in reliability and empathy were the same (-0.94). Paired sample T-test results showed that there was a significant difference in all dimensions between perceived and expected service quality ($p<0.001$). (Table 2)

T-test and One Way Anova were used to compare the means between demographics and gap quality. The results showed that there were significant differences between the number of referrals and tangibility ($p = 0.04$). The quality gap in both dimensions for patients who had referred once to the emergency department was more than others. (Table 3)

Table 1. Demographic Information of Emergency Department Participants

Variable	percantage of frequensy	Variable	percantage of frequensy
Age	(%)	Education level	(%)
18-30	43%	Before high school	9%
31-40	20%	complete high school	29%
41-50	13%	Bachelor degree	8%
More than 50	58%	Master degree	20%
Total	100%	total	100%
Marrage statuse(%)		Sex	
Male	35%	Single	15%
Female	65%	Married	85%
Total	100%	Total	100%
Insurance		Number of refer(%)	
Yes	98%	Once	60%
No	2%	More than once	40%
Total	100%	Total	100%
Problem type		Duration of stay	
Internal diseases	42%	1-12h	24%
Cardiovascular	11%	13-24h	3%
Digestive	19%	1d	23%
Respiratory	14%	2d	11%
Special disease	14%	3d	18%
Total	100%	Total(100%)	

Table 2. Mean scores of perception, expectation and differences and paired t-test results on the six dimensions of quality of services

Dimensions	*Perceptions (Pre-test)	*expectations (post-test)	*Gap quality	Paired - sample T test	
				t	p-value
Tangibility	3.45 + 0.86	4.31 + 0.62	-0.859 ± 0.98	8.76	<0.001
Reliability	3.42 + 0.86	4.36 + 0.61	-0.94 ± 0.91	10.31	<0.001
Responsiveness	3.27 + 0.89	4.35 + 1.02	-1.08 ± 1.35	8.01	<0.001
Assurance	3.55 + 1.04	4.38 + 0.61	-0.8 ± 1.16	7.2	<0.001
Empathy	3.45 + 0.8	4.39 + 1.2	-0.94 ± 1.42	6.65	<0.001
Total quality	3.295 + 0.75	4.35 + 0.62	-0.97 ± 0.92	10.53	<0.001

*= mean ± standard deviation

Table 3. T-test and One Way Anova results to compare the means between demographics and gap quality

Variable		Gap quality	P-Value
		Mean(SD)	
Age	18-30	0.83(1.74)	0.17*
	31-40	0.76(1.78)	
	41-50	0.58(1.72)	
	> 50	1.024(2.15)	
Sex	Male	0.88(0.89)	0.47**
	Female	1.02(0.94)	
Insurance	Yes	0.98(0.9)	0.83**
	No	0.8(0.38)	
Problem type	internal diseases	0.91(1.08)	0.96*
	Cardiovascular	1(0.97)	
	Digestive	1.16(0.68)	
	Respiratory	0.86(0.77)	
	Special disease	0.85(0.76)	
Education	Before high school Education	0.875(0.85)	0.08*
	Complete high school	0.91(0.89)	
	Bachelor degree	1.06(1.15)	
	Master degree	2.06(0.85)	
Marital status	Married	0.94(0.92)	0.4**
	Single	1.15(0.8)	
Number of refer	Once	2.15(1.8)	0.04**
	More than once	0.94(0.94)	
Duration of Stay	1-12h	0.38(0.72)	0.41*
	13-24h	0.431(0.24)	
	1d	1.6(0.31)	
	2d	1.2(0.78)	
	3d	1.7(1.45)	

*: ANOVA Test, **: T-Test

Gap quality between perception and expectation of items related to each of the six dimensions of quality health services showed that the largest gap in the tangibility dimension was related to question "comfortable and clean waiting room" (-1.54) and the lowest gap was related to the question "medical staff are well dressed and appear neat"(-0.36). The greatest gap in reliability was observed in item "They should provide their services on time (-1.14) and the lowest was related to "professional and competent physicians and staff (-0.72) and the greatest gap in responsiveness was in the item "waiting time is less than an hour to get service" (-1.6) and the lowest gap was observed in the item "effect of treatment team and clinicians on creating trust and confidence in patients "(-0.67). The greatest gap in assurance dimension was related to the item "feel safe when they refer to the hospital" (-1.18), and the lowest gap was related to the item "modest and friendly behavior from the staff and doctors with patients" (-0.63). In the empathy dimension, the largest gap was related to the item "get feedback from patients" (-1.5), and the lowest gap was related to the item "availability of services hostelry" (-0.46).

Discussion

Measuring service quality is an essential prerequisite for quality improvement; because it does not specify quality requirements, service quality is not modified. SERVQUAL is a methodology that gives the opportunity to health services to identify a number of areas for potential improvement in service quality. The results can be used to help the center to prioritize the areas where improvements could be applied. A major contribution of SERVQUAL is to identify symptoms and provide a starting point for the examination of underlying problems that are obstacles to the provision of quality. Consequently, these results should be used from the primary health center managers to identify the reasons why these gaps in perceived quality appear. Some possible explanations for the observed gaps in perceived quality may be explained as follows (20, 37)

This study was performed to assess the gap between perceptions and expectations of quality health services in emergency departments of Nemazee hospital by SERVQUAL measure. This tool examines the quality services in five dimensions: tangibility, reliability, responsiveness, assurance and empathy. Statistical analysis of the results (Paired- Sample T-test) showed a significant difference between the perceptions and expectations in all dimensions. Most of the gap was related to responsiveness and the lowest to the assurance. There were gaps in all items between perception and expectation based on the questionnaire, and in all cases expectation levels of the patients were higher than their perception.

In terms of reliability, responsiveness, assurance and empathy, it could be assumed that given the time pressure, staff members may have little time to offer sympathy and reassurance or have limited resources to handle emergency situations. The results should be taken into consideration by both managers and health professional to identify the reasons that cause this gap.

Brady and Cronin suggested that service quality is a performance-based construct, and therefore, it is more appropriately measured with perceptions, rather than expectations as a point of reference. Cronin and Taylor suggested that the gap between expectation's and perception's measurement framework can be potentially a misleading indicator of service quality perceptions because people interpret the ambiguous meaning of expectations differently. Parasuraman et al. defended their framework by arguing that expectations should be included in the assessment of service quality because perception values alone do not outperform the gap scores in terms of prediction of overall evaluations of service quality (37)

In regard to the relation that exists between each dimension evaluated, it can be concluded that each one of them is a determinant as well as the gaps presented between the perceptions and expectations evaluated, so patients were not satisfied in all dimensions of service quality. It would seem that fundamental changes are needed in emergency department in order to reduce the gap quality of services in this ward.

It emphasizes the distinction between quality perception and patient' satisfaction According to the results of this investigation, Servqual adapted version became appropriate to evaluate the quality service of the emergency care unite in the Nemazee hospital and sharing the conclusion of S. Nurihekmat who showed that the quality of care does not meet the needs and expectation of the patients in Rasool Akram hospital. Furthermore, .Ezzat Abadi et al. showed that there was a gap between the expected and perceived hospital services for patients in Yazd; also, Jenabady et al. showed that there were differences between mean scores of perceptions and expectations in all aspects of quality of Zahedan. Arjmand's study showed the highest gaps in ophthalmology department in responsiveness dimension of the gap between expectations and perceptions of quality of health care of patients in Shiraz University of Medical Sciences. In Rajabi Purmeybody's study, it was shown that there were differences between the importance of tangibility, reliability, responsiveness and empathy in a prestigious hospital; in terms of patient satisfaction, the quality of the hospital services was lower than the expected level. In Lim and Tong's study, the results showed that the lowest perception rate of quality was related to responsiveness and there was a significant difference in the 5 dimensions of patients' expectations and perceptions in quality of hospital services in Sangapure. Moreover, Karasavyd in a study on health care quality in the Greek hospital showed that the patients' expectations of service quality were much more than the quality of services which were provided and in terms of existence of quality gap between expectations and perceptions of service quality in all dimensions in hospital, the result was similar to our study findings.

Conclusion

SERVQUAL is a powerful tool for assessing the quality of health care services. However, it needs to be viewed critically as to its strength, i.e. the results showed that SERVQUAL is a valid, reliable and flexible tool to monitor and measure service quality in emergency unit and allows administrators or management personnel to identify the opportunity areas that require an improvement from patient's perspective. Results could be used in a planning process to enhance the quality in emergency department.

In order to improve the quality of emergency services and reduce quality gap in all dimensions especially in responsiveness, empathy and reliability, it is recommended that appropriate facilities should be provided for patients' companions and also handling of health coworkers with patients and their companions should be improved. The medical staff should always take into consideration the fact that patients expect kindness, empathy, compassion, confidence, respect, interest and pay attention to them as well as have the sense of responsibility. Another item is reducing the waiting time for receiving services in due time by increasing the staff as well as increasing attention to ordering system based on the patients' condition; improving services related to the changing the bed sheet, towels, serum and medicine ; and Improving the behavior of health care staff towards the patients. Because the process is being done on a human in health care sector and every human has its own personality, so special attention

should be paid to each of them. And to reduce the quality gap in assurance, telling the truth not only provides the necessary information for clinical decision of patients but also provides correct and timely information about disease, duration of treatment in all aspects of health, health care and other aspects of life.

Conflict of Interest
None declared.

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