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Original Article

The Quality of Maternity Services in Mashhad Educational Hospitals, Using SERVUSE Model

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Abstract

Introduction: Reducing maternal and neonatal mortality requires improved care quality; the aim of this study was to determine various dimensions of the quality of services in maternity wards in Iran from the patient's perspective.

Methods: In this cross-sectional study which was conducted from April to October 2017, 363 patients were selected from maternity wards of five hospitals affiliated to Mashhad University of Medical Sciences by convenience sampling method. Data collection tools consisted of the SERVUSE (Service Usability questionnaire), including 51 items in 6 dimensions of services quality; its validity and reliability were determined in previous studies. Data analysis was performed using SPSS, version 20. The analysis was performed using descriptive and inferential statistical methods including Wilcoxon, Kruskal Wallis and Mann-Whitney tests. The significance level in all the tests was considered 5%.

Results: The total mean scores of the patients' expectation and perception were 19.10±2.14 and 15.11±4.25, respectively. The highest expectation and perception were related to the usability dimension, and the lowest expectation and perception were related to reliability dimension. The differences between the median score of perception and expectation for all dimensions and total median score of perceptions and expectations were statistically significant (P<0.05, using Wilcoxon test). There were no statistically significant differences in the median score of the gap between the patient's expectations and perceptions at the levels of demographic variables (P>0.05, using Mann-Whitney and Kruskal Wallis tests).

Conclusion: It seems that the service quality of maternity ward of hospitals was approximately unsatisfactory from the patients' perspective, and they had high expectations in maternity wards of hospitals. Since maternity service quality is critically important, improvement of quality requires management, concordant participation, and efforts of the hospital and staff at all levels of the medical facilities and convenience.

Keywords: Hospital, Maternity, SERVUSE model, Quality, Iran

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Introduction

It is estimated that between 350,000 and 500,000 women die from pregnancy complications in the world, and 99% of them take place in developing countries (1). More than 80% of these deaths can be avoided through effective and affordable measures (2). Ensuring access to essential, effective and good quality pregnancy care is a key strategy to help reduce maternal and infant mortality and morbidity rate (3). Quality Improvement is one of the five major global strategies for promoting reproductive health programs in 2004 (4). Understanding the principles of quality in the health sector can improve the service process and effectively evaluate customer satisfaction in order to ensure the quality of health services (5). Recently, the role of patients has been highlighted in determining the quality of services and efforts in health promotion (6). Also, perceptions and expectations of patients have been accepted as important factors in improving the quality of health services delivery and efforts have been increased in evaluating it (7). The service sector is the swiftly enhancing area of the world economy, and the health services institutions play an important role in such enhancement (8). Quality is a key factor in the differentiation, competitiveness and superiority

of services; therefore, understanding, measuring and improving it are important challenges for all healthcare organizations (9, 10).

Wilson et al. (2008) noted that it was important to understand customer feedback about the quality of service for any service provider who is interested in ensuring customer responsiveness (11). Further, Musalem and Joshi (2009) stated that "any business entity interested in being competitive in a market place must be responsive to its customers" (12). In Iran, many studies, including those of Hekmatpour (5), Ayoubian (13), Bahadori (14) and Sina (15) on assessment of the quality of hospital services and satisfaction of patients from hospital care, reflect the fact that there are many challenges in this regard. There are various models for measuring service quality. One of these that has been used to measure the services quality from the perspective of patients, especially in the healthcare sector, is the SERVUSE model. This questionnaire is a modified form of SERVQUAL that measures customer perceptions in five dimensions, but SERVUSE measures the usability in addition to those 5 dimensions. SERVUSE is a more powerful tool for measuring service quality than SERVQUAL (18). In a study conducted by Kubeck and Stroudmoreman (2006), SERVUSE was identified as a useful model for measuring the quality of services; they found a gap of -0.357, indicating that service recipients have not attained their expectations (16). HSEP (Health Sector Evolution Plan) is a stepwise national plan which includes multiple interventions in the health sector during two phases. Since maternity care quality is important for patient satisfaction, the two main parts of HSEP are as follows: 1- improving quality of care in the hospitals, promoting hotelling services and standardizing them according to the needs and expectations of the recipients in the first phase; 2- promoting natural vaginal delivery, maternal and neonatal health, and increasing the satisfaction of pregnant mothers hospitalized in maternity wards in the second phase (17). This study aimed to evaluate the quality of maternity services in Mashhad educational hospitals, using SERVUSE model.

Methods

This is a cross-sectional study conducted from April to October 2017 in Mashhad, Iran. The study population includes patients in the maternity ward of hospitals affiliated to Mashhad University of Medical Sciences. The sample size was obtained to be 340 individuals considering the standard deviation of 0.47 (with regard to the study by Haghshenas et al., 2017), error limit of d = 0.03, and type I error of 0.05,

using the following formula:

$$n = \frac{z^2_{1-\frac{a}{2}} * s^2}{d^2}$$

Considering the possibility of the sample's attrition, the sample size increased to 400 individuals.

Patients who were admitted to the maternity ward and subsisted at least 24 hours in selected hospitals and were willing to participate in the study were included in the research after obtaining the informed consent, and they were excluded from the study in case they were not willing to continue their participation. The patients were selected from maternity wards of five hospitals affiliated to Mashhad University of Medical Sciences by convenience sampling method. SERVUSE questionnaire was the data-gathering instrument for assessing the quality of services in this research, and its validity and reliability were measured in the study of Hooshmand and colleagues (18). This instrument consists of 6 parts and 51 questions. The first part of the questionnaire contains six questions on the demographic characteristics of participants. The second part consists of 18 questions which specify the patients' expectations of the services offered by the hospital. The third part has six questions about weighting, the forth part specifies the patients' perceptions of the services consisting of 18 questions, and the fifth part contains three questions about quality, satisfaction, and behavioral concepts. A seven-point Likert scale was used, ranging from absolutely disagree (with score=1), disagree (with score=2), partly disagree (with score=3), neutral (with score=4), partly agree (with score=5), agree (with score=6) and absolutely agree (with score=7) to assess the level of the patients' expectation and perception of service quality. Therefore, each part of the expectations and perceptions includes six dimensions: Tangibles (Questions 1-3, score between 3-21), Reliability (Questions 4-5, score between 2-14), Responsiveness (Questions 6-8, score between 3-21), Assurance (Questions 9-11, score between 3-21), Empathy (Questions 12-14, score between 3-21), Usability (Questions 15-18, score between 4-28), and total expectations and perceptions (Questions 1-18, score between 18-126).

These measurements were used as the dependent variables for analysis. Quantitative variables were reported as mean (standard deviation), and qualitative variables were also reported as frequency (percent). Wilcoxon and Kruskal Wallis tests were used to compare the median of quantitative variables in two dependent groups and median of

quantitative variables in more than two independent groups, respectively. To test the relationship between qualitative variables, we used Mann-Whitney test. Data analysis was performed using SPSS version 20. P<0.05 was considered statistically significant. In this research, after obtaining the approval of Mashhad University's research deputy (code: 960527), we firstly informed the patients about the study subject and its goals; then, they were included in the study if they met the inclusion criteria. The data were collected in two steps and in two different times: the first time before admission (expectations from the quality of services) and the second time before discharge (perception). Thus, the quality gap was achieved. The negative quality gap indicated that the services were provided less than what the patients expected.

Results

A total of 363 questionnaires from all 400 distributed questionnaires from April to May 2017 were completed in this cross-sectional study (response rate=90%). Demographic characteristics are shown in Table 1.

According to the findings, the total mean score of the patients' expectation was 19.10 (SD=2.14, Range=22.50). Among the six dimensions, the highest expectation was related to the Usability dimension (Mean±SD score= 25.24±3.42, Range=18) and the lowest to the Reliability dimension (Mean±SD score= 13.06±1.40, Range=6). Also, the total mean score of the patients' perception was 15.11 (SD=4.25, Range=21.67). Among the six dimensions, the highest perception was related to the Usability dimension (Mean±SD score=19.31±6.53, Range=24) and the lowest to the Reliability dimension (Mean±SD score= 10.41±3.28, Range=12).

The gap score was calculated for each dimension by subtracting the perception score from the expectation score. The Wilcoxon test results showed that the differences between the median score of perception and expectation for all dimensions and total

Table 1: Demographic characteristics of all patients

Variables	Patients
Age(mean±SD)	31.20±9.50
Education level (N/%)	
Illiterate	1(0.30%)
Primary and secondary school	326(89.80%)
Academic Degree	36(9.90%)
Residence (N/%)	
Urban	243(67.10%)
Rural	119(32.90%)
Visit times (N/%)	
1	244(67.20%)
2-5	105(28.90%)
>5	14(3.90%)
Waiting time for admission(mean±SD)	123.70±110.15 (minutes)

median score of perceptions and expectations were statistically significant (P<0.05) (Table 2). Therefore, there was a gap between the patients' perception and their expectation of the maternity services quality in Mashhad University hospitals (Table 3).

Table 3: The gap score between the patients' perception and their expectation

Dimensions	Gap
	Mean±SD
Tangibles	-3.04±4.94
Reliability	-2.65±3.38
Responsiveness	-4.26±6.71
Assurance	-4.11±5.72
Empathy	-3.90±5.01
Usability	-5.92±6.92
Overall Quality	-3.98±4.51

In our study, there was no significant difference in the median score of the gap between the patient's expectations and perceptions at the levels of demographic variables (P>0.05).

Discussion

The service quality of the maternity ward of hospitals was approximately unsatisfactory from the patients'

Table 2: Dimensions of hospital service quality median scores for patients' expectations and perceptions

Dimensions	Perception score	expectation score	Test result
	Median (QR*)	Median (QR)	
Tangibles	16 (6)	19 (4)	P<0.001
Reliability	11 (5)	14 (2)	P<0.001
Responsiveness	16 (7)	20 (3)	P<0.001
Assurance	16 (8)	21 (2)	P<0.001
Empathy	15 (7)	20 (3)	P<0.001
Usability	20 (8)	26 (4)	P<0.001
Overall Quality	15.66 (6.33)	19.66 (2.83)	P<0.001

*QR=Quartile Range

perspective; in general, they had high expectations in the maternity wards of hospitals. Measuring the quantity and quality of the provided services to identify their weaknesses is one of the most important and effective strategies of healthcare managers to improve the quality of services (18). Since service quality of the maternity ward of hospitals was approximately unsatisfactory from the patients' perspective, there is a need to take some measures for improvement in all dimensions of service quality. These findings are similar to the results of previous studies conducted in Cyprus (19), Turkey (20) and Iran (21). Thus, the studied health centers must pay special attention to the quality of services provided and in general, they should make efforts to reach an optimal level.

In our study, the overall gap calculated in the population was negative; also, there was a negative gap between the patients' perception and their expectation of the maternity services quality in all six dimensions. This means that they have not been able to meet their patients' expectations, and the perceived quality of these dimensions has been less than expected.

The perceived quality of services in maternity wards of the studied hospitals in all quality dimensions was lower than the expectations of patients. The lowest negative gap in this study was related to the reliability dimension. According to Reli, reliability is the ability to perform the promised services dependably and accurately (36). In the present study, the low gap in the reliability dimension revealed that the participants had confidence and feeling of safety to some extent, when they chose the treatment modality. Our findings confirm the results of the study by Lorin et al. (2013), indicating that the lowest gap score was registered by the reliability dimension (22). However, some studies have contradicting results; it seems that in these studies the reason for lack of reliability as a distinct dimension was the fact that the health care providers rarely promised the patients to do something for them either implicitly or explicitly; completion of promises is, therefore, an expectation somewhat removed from the minds of patients (23-25). There was a negative gap between the perception and expectation score of Tangibles dimension. This shows that the physical environment of the maternity sectors was of great importance to the customers and the new structure of the delivery rooms and maternity wards in the studied hospitals has met the patients' expectations in a low degree. Thus, this dimension needs more attention and there is a need to invest in the physical dimension to increase the customer satisfaction. Our findings

confirm several previous results of the studies carried out in India (24), Africa (25), and Iran (14, 15, 26). Several studies have contradicted the results (27-29). The most negative gap in this study was the usability dimension, which included easy access to the services, administrative, medical, educational and physical space of the hospital's various departments. This reveals a weak relationship among the physician, midwives, and the staff with patients and the need to improvement in communication between them to obtain information simply. In other studies using SERVQUAL instruments, this item was merged in the dimension of empathy; in several studies, the results were similar to those of the present study (26, 30, 31), but contradictory to the results of Jabnoun and Chaker (32), Ahuja et al. (24), and Ajam et al. (33). In understanding the service quality, human principles are more important than non-human elements (34) and interpersonal communications are one of the most important factors in service quality perceptions (35). The staff must make the patients informed of their disease and status, respond their questions, pay attention to their emotional and social needs, and be accessible when necessary (26).

Limitations
One of the limitations of the present study was using only patients' perspectives to determine the quality of provided services. It is essential to investigate the viewpoints of other employees on the service quality because most of patients are not fully aware of the treatment processes. Also, because our sampling was based on convenient method, the results cannot be generalized to other populations. Another limitation of the present study was using a questionnaire to determine the patients' perceptions and expectations. Although the SERVUSE questionnaire is valid and reliable, the researchers cannot investigate all dimensions of the service quality using only one questionnaire; in this regard, some qualitative studies are recommended to be performed.

Conclusion
According to the results of present study, it seems that the service qualities of maternity wards of hospitals were approximately unsatisfactory from the patients' perspective and they had high expectations in the maternity wards of hospitals. Since maternity service quality is critically important, the quality of the services should be recovered and this is distinctly an important factor for fulfilling a patient's level of satisfaction. The improvement of quality requires management, concordant participation, and efforts

of the hospital and staff at all levels of the medical facilities and convenience. For example, the healthcare providers and employees should pay more attention to the patients' opinions and comments and use their feedback and suggestions in order to solve the workplace problems and improve the quality of provided services. Moreover, training the health staff to meet the patients' emotional needs and expectations is recommended.

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