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Measuring and improving the quality of health care services based on patient satisfaction with the provided services (improved SERVQUAL model)

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ABSTRACT

Introduction: Focus on the needs of patients with means considering service quality provided to the patients. The purpose of this study is to assess and improve the quality of health care based on improved SERVQUAL model that examines patient satisfaction.

Materials and Methods: In this descriptive and analytical study, 361 patients were examined from different hospital wards. To collect data a questionnaire was used that included demographic information and questions related to the improved SERVQUAL model. In order to analyze the data, descriptive and inferential statistical methods were used. Significance level of five per cent was considered for the tests.

Results:59.6 percent (215) of patients were female and 40.4 percent (146) were male. The education level of patients is: 61.8 percent (223) bachelor's degree, 21.9 percent (79 cases), associate's degree, 11.9 percent (49) master's degree, and 4.4% (16 patients) had high school diploma or less. The 93.9 percent (339) of patients attended their first visit to the hospital, while 4.4% (16 patients) attended their second and 1.7 percent (6 patients) attended their third and more visits. There was a negative quality gap between expectations and perceptions scores in all aspects. The highest negative gap is related to responsiveness (-0.99) and the lowest was related to the tangible factors (-0.58).

Discussion and conclusion: The client expectations in all aspects of service quality was higher than their perceptions and it is required that service quality at all aspects, especially responsiveness should be improved. This requires training for medical staff and employees for the patient-centered behavior and facilitating the admission and discharge processes as well as access to insurance and social work agents.

KEYWORDS: service quality, improved SERVQUAL model, patients, hospitals

1. INTRODUCTION

Service quality is a central issue in the healthcare sector, so that highest quality health care service is the first priority of the health sector in the 20 years vision document (1).In the health sector, due to dealing with life of people, improve the quality of services has special importance. Therefore, measurement and management of service quality is essential for healthcare organizations. Satisfaction of service recipients is an important indicator for assessing the quality of health care, so that on the needs of patients with means considering service quality provided to the patients (2-4). In addition, a measure of the effectiveness of health care organizations is patient satisfaction (5). The new theories of management define quality according to client needs, and the client has a central role in directing the activities of the organization (6). Some of the benefits of increased client satisfaction is reducing sales and distribution costs, minimizing support costs and attracting new clients and creating long-term relationship with them (7).However, patient satisfaction is a complex concept and difficult to measure, so that many hospitals that wish to implement new strategies based on the patient's desired service have found that the process to identify the preferences of medical service from patients' perspective would be very difficult.

Management scholars have proposed different models for client satisfaction. All of these models serve to better understanding the needs of clients. The improved SERVQUAL model is a model indicating major activities of the organization which affect their perception of the quality and identifies service gaps and the causes of these gaps (8, 9).Since the patients often evaluate the quality of the services by comparing the received services (client perceptions) with expected services (ideal expectations and minimum services expected), this model the measures patients satisfaction in seven areas including assurance, empathy, reliability, responsiveness, tangible factors, ease of access, and comfort (10-12).

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This study was conducted in new hospital established in Semnan named Kowsar hospital that has an appropriate environment with advanced features. Therefore, this study was conducted with the aim of assessing the quality of health care in terms of patient satisfaction based on improved SERVQUAL model.

2. MATERIALS AND METHODS

For sampling in this study, the total number of patients admitted to hospital in September to March 2013 were considered, and then the sampling was performed. Finally, 361 patients were examined. The total number of patients and samples taken from each ward of the hospital are shown in table 1.Sampling method in each ward was based on random sampling. The Kowsar hospital, established in 2013, is a 200-bed hospital with specialized wards for internal medicine, surgical ward for women and men, cardiac, respiratory and dialysis ICU as well as psychiatric ward.

A questionnaire designed based on the tutors' and counselors' views was used for data collection. The questionnaire consisted of two parts. The first part consisted of demographic information including age, gender, education level, and frequency of refer to hospital, and the second part consisted of questions related to the improved SERVQUAL model. The SERVQUAL or Rutter model was invented by Parasuraman and his colleagues in 1980 in five dimensions of reliability, responsiveness, tangible factors, assurance and empathy. Robert Kavena and his colleagues ease added dimensions of access and comfort to it in their subsequent studies (11, 13).Each of these dimensions has several components measured using a 7-grade scale from strongly agree (grade seven) to strongly disagree (grade one).This model includes a total of 32 components and consists of two parts. The first part reflects the clients' expectations from service providers, and the second part shows the clients' perception of the services provided. The overall quality is obtained based on the difference between scores on expectations and perceptions of the respondents.

To determine the validity of the improved SERVQUAL model, opinions of experts and professional individuals were used. In addition, since the questionnaire is in a standardized form, it enjoys appropriate validity.

Using SPSS software and performing necessary calculations, alpha coefficient was higher than 0.7, which indicates the validity of the questionnaire was acceptable and desirable. To analyze the data, descriptive and inferential statistics were used. In order to assess the normality of the data, and Smirnov-Kolmogorov test was used. To test the hypothesis, paired mean T-TEST was used in normalized data and Wilcoxon test was used in non-normalized data. In both tests, the significance level was set at five percent.

3. RESULTS

59.6 percent (215) of patients were female and 40.4 percent (146) were male. The education level of patients is: 61.8 percent (223) bachelor's degree, 21.9 percent (79 cases), associate's degree, 11.9 percent (49) master's degree, and 4.4% (16 patients) had high school diploma or less. The 93.9 percent (339) of patients attended their first visit to the hospital, while 4.4% (16 patients) attended their second and 1.7 percent (6 patients) attended their third and more visits.

Data analysis showed that the patients 'expectations in seven aspects were higher than their perceptions. The highest average score on the expectations was related to responsiveness and the lowest score was related to reliability. Also terms of perceptions, the highest average score was related to tangible factors and the lowest was related to responsiveness.

There was a negative quality gap between expectations and perceptions scores in all aspects. The highest negative gap is related to responsiveness and the lowest was related to the tangible factors. Kolmogorov-Smirnov test showed that the data for each of the seven sections of the SERVQUAL model were normal. Therefore, paired T-TEST test was used to evaluate them. This test indicated that the expectations of patients in every seven aspects were beyond their perceptions and provided services are not acceptable at Kowsar hospital.

The mean expectation, perception, negative gap, and the p-value of patients studied at Kowsar hospital in Semnan are shown in Table 2.

Ward	Total number of patients	Portion of the population	Sample size		
Internal medicine	4578	80.01	350		
psychiatry	662	11.57	51		
ICU	114	1.99	9		
CCU	368	6.43	28		
Total	5722	100	361		

Table 1. the statistical population and sample distribution in 2013-2014

Items	Average perception	Average expectation	Quality gap	p-value
Assurance	3.5276	4.2957	-0.7681	0.00
Empathy	3.4437	4.1776	-0.7339	0.00
Reliability	3.6593	4.0537	-0.8777	0.00
Responsiveness	3.3213	4.3193	-0.9980	0.00
Tangible factors	3.5956	4.1813	-0.5857	0.00
Comfort	3.3783	4.2355	-0.8572	0.00

Table 2. average perception, expectation, and quality gap in 7 aspects of the improved SERVQUAL method

4. **DISCUSSION**

The results showed that the patients' expectations in all aspects were higher than their perceptions. Negative gap indicates the need to pay attention and plan to remove problems. In the present study, the largest gap was in the responsiveness. In other words, employees and medical staff did not meet the patients 'needs, and staff, including social workers and insurance agents did not have the necessary guidance, and the staff did not respond immediately when they were called.

The quality of hospital services had not been studied based on improved SERVQUAL model before our research, and studies are conducted based on the five-aspect SERVQUAL model. In a study by Kebriaei et al., conducted at health centers in Kashan, the responsiveness aspect has the highest gap (14). In Tang et al. research studied the expectations and perceptions of patients in hospitals in Singapore and Caridis et al. research studied the expectations and perceptions of patients referred to dental health center in Greece, the highest gap was related to responsiveness (7, 15). However, the empathy had the highest negative gap in studies by Rouhi et al. on health centers in Gorgan, by Aghamolaei on health centers in Bandar Abbas, and by Tarrahi ET al.on health centers in Khorramabad (16-18). In study conducted by Mohammadion the health centers in Zanjan, the highest negative gap was related to Reliability (19).

In this study, the lowest gap was related to tangible factors, which represents the appropriate physical environment, good appearance of physicians and nurses, and updated facilities. In a study by Kebriaei et al., the tangible factors had the lowest gap (14, 19, 20) suggests that public hospitals and health centers are careful about infrastructure and physical aspects of care. The tangible factors also had the lowest negative gap in Tang's study (7). The lowest negative gap in study by Tarrahi et al. was the reliability and by Aghamolaei et al. was assurance (17, 18).

The difference in the gap of dimension can reflect differences in the perceptions of individuals and social and population groups. Therefore, it is necessary for managers to carry out research for improved quality plans at the first step. Thus, based on these results that indicates the largest gap is related to responsiveness, the most important issue facing the center is this dimension. The negative gap in the responsiveness can be caused by several reasons including poor management, lack of proper planning, ignoring the expectations and demands of recipients of services, the high expectation of the people, and others. Due to the difference in quality observed in all seven dimensions, hospitals must be committed to provide the service at the time promised and in the shortest period of time to clients, and become familiar with the knowledge and skills of the day to meet the needs of visitors.

5. CONCLUSION

This study showed that although it is tried to improve quality service in Kowsar newly constructed hospital with an appropriate environment and advanced facilities, patients 'expectations were beyond their perceptions. This indicates that providing space and facilities is not enough for patients' satisfaction. This requires training for medical staff and employees for the patient-centered behavior and facilitating the admission and discharge processes as well as access to insurance and social work agents.

REFERENCES

- 1. Zali AR. Book Comprehensive: Public Health. 3. 3rd ed2013.
- 2. Kaplan RS, Norton DP. Using the balanced scorecard as a strategic management system. Harvard business review. 1996; 74(1):75-85.
- 3. Kalroozi F., Dadgari F., Zareiyan A. Patients' satisfaction from health care group in patient's bill of right observance. Journal of Military Medicine. 2010; 12(3):143-8.

- 4. Jabraeily M, Rahimi B, Khodayari R, Goli Farhodi G, Mohamadi A. Assessment of inpatient satisfaction with quality services in training centers of Urmia University of Medical Sciences with the servequal model. Journal of Health Information Management Association. 2012; 7(2):19-24.
- 5. Jafari F JZ, Zaeri F, Ramezankhani A, Saiah Iran Z. Investigation of satisfaction and influential factors on it in health centers clients. Daneshvar Medicine. 2006; 66:15-22.
- 6. Mir GHafouri SH, Makki F. Evaluating the quality of services of training library with LibQual approach. Library and Information Science. 2007; 10(1):62-79.
- 7. Lim PC, Tang NK. A study of patients' expectations and satisfaction in Singapore hospitals. International Journal of Health Care Quality Assurance. 2000; 13(7):290-9.
- Ghobadian A, Speller S, Jones M. Service quality: concepts and models. International Journal of Quality & Reliability Management. 1994; 11(9):43-66.
- Bahadori MK, Abdi M, Teimourzadeh E, Ayoubian A, Yaghoubi M. Assessment of quality transportation services at a military medical center based on SERVQUAL model. Journal of Military Medicine. 2013; 15(3):177-83.
- 10. Walker J, Baker J. An exploratory study of a multi-expectation framework for services. Journal of Services Marketing. 2000; 14(5):411-31.
- 11. Nadiri H, Hussain K. Diagnosing the zone of tolerance for hotel services. Managing Service Quality. 2005; 15(3):259-77.
- 12. Cavana RY, Corbett LM, Lo YG. Developing zones of tolerance for managing passenger rail service quality. International Journal of Quality & Reliability Management. 2007; 24(1):7-31.
- 13. Parasuraman A, Zeithaml VA, Berry LL. Servqual. Journal of retailing. 1988; 64(1):12-40.
- 14. Kebriaei A, Akbari F, Hosseini M, Eftekhar, Ardabili, A. P. Survey on quality gap in primary health care in Kashan health centers. J Qazvin Univ Med Sci. 2004; 31:82-8.
- 15. Karydis A, Komboli-Kodovazeniti M, Hatzigeorgiou D, Panis V. Expectations and perceptions of Greek patients regarding the quality of dental health care. International journal for quality in health care: journal of the International Society for Quality in Health Care / ISQua. 2001; 13(5):409-16.
- 16. Rohi GH NH, Hesam M, Mirkarimi F, Asaiesh H. Comparison of Nurses' Job Satisfaction and Organizational Commitment in Intensive Care and General Wards of Golestan University of Medical Sciences. Journal of Research Development in Nursing & Midwifery. 2010; 7(2):23-32.
- 17. Aghamolaei T, Zare SH, Kebriaei A, Podat A. Quality primary health care services from the perspective of women referred to city of Bandar Abbas of he=ealth centers Payesh Journal. 2008; 7(2):121-7.
- 18. Tarrahi mj, Hamouzadeh P, Bijanvand M, Lashgarara B. The quality of health care services provided in health care centers of Khorramabad using SERVQUAL model in 2010. Yafteh. 2012; 14(1):13-21.
- 19. Mohammadi A, Shoghli A. Survey on Quality of Primary Health Cares in Zanjan District Health Centers. ZUMS Journal. 2009; 16(65):89-100.
- 20. Havasbeigi F, B Y, E M, MA. Measuring the Quality of Services Provided For Outpatients In Public Hospitals In Ilam and Kermanshah Cities Based on The SERVQUAL Instrument. Scientific Journal of Ilam University of Medical Sciences. 2013; 21:201-14