Measurement of Quality of Primary Health Services by Servqual Model: Evidence from Urban Health Centers in West of Iran

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Abstract: Primary health care is the core of the health system of each country and assessing quality of these services is the first step in planning to maintain or promote health status of people. The study aimed to evaluate the quality of health services provided in urban health centers in Kermanshah province, West of Iran, in the year 2015. This was a cross-sectional and descriptive study which the perspective of 400 respondents were assessed about the quality of primary health services provided by health centers in Kermanshah. Samples were selected by multi-cluster sampling. First, among fourteen towns of Kermanshah province, three towns were randomly chosen. Second by random sampling, three health center were chosen in each town, then each health center was included 45 participants. Data was collected by SERVQUAL questionnaire, based on the five dimensions of service quality gap which includes 22 questions. The collected data was statistically analyzed by STATA V.12 Software. The results indicated that there are negative gap in all of five dimensions. The highest and lowest gaps in the mean score were found in the assurance (-1.82) and empathy (-1.02) dimensions. The highest and lowest mean score of perception were associated with assurance and responsiveness, respectively. Also, the highest and lowest mean score of expectation were associated with assurance and empathy, respectively. Based on the study, in all of five dimensions, there was a significant difference gaps between the respondents' perceptions and their expectation. However, it is suggested that the planners and managers of health centers must improve the timeliness of the delivery of care and enhance the communication skills of staff members in order to increase the quality of the services provided.

Key words: Quality of healthcare, perception, expectation, SERVQUAL, assurance

INTRODUCTION

Primary Health Care (PHC) as a core of the health system is the major component of social and economic development of each country and they should be equally accessible and acceptable to all individuals in a society (Rohde *et al.*, 2008). Today, many organizations are seeking ways to gain competitive advantage through their products and services which are different from other organizations. Providing a high quality services is the one of the main strategies to achieve this aim (McLelland *et al.*, 2014). Quality is a complex concept that having many dimensions. Service quality can be defined as the rational difference between customer expectations of service (what is) and their perception (what should be).

If expectations are greater than perception, then perceived quality is less than satisfactory and hence, patient's dissatisfaction occurs (Ajam *et al.*, 2014; Sahney *et al.*, 2008). In compared to other sectors, in the health sector the quality of the health services is more than important because the health sector has a significant effect on the length of people's lives and their wellbeing (Sahney *et al.*, 2008; Sabahi *et al.*, 2011). Despite the great importance services provided in the health sector, quality of these services is not very suitable. The quality of health services provided by health providers is becoming more and more vital and the demands for quality control, management and improvements are increasing in developed as well as developing countries. Patients in health sector as recipients of the health services have

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specific expectations and needs that health service providers have study and understand their needs and expectations. They can with assessing the degree of patients satisfaction of healthcare received, improve the quality of this services. One of the most widely used tools for determining and evaluating of quality of the healthcare services is SERVQUAL (service quality) Model (Bahadori *et al.*, 2013; Abolghasem *et al.*, 2013; Mohammadi *et al.*, 2003; Mohammadnia *et al.*, 2010; Ramanujam *et al.*, 2011; Borie and Damanhouri *et al.*, 2013). In this model, the perception of patients and their expectation of the health services received were assessed in five dimensions, including tangibility, reliability, responsiveness, assurance and empathy. In several countries SERVQUAL Model were used to evaluate the quality of health care that different results were observed. In a study in Ghana, the patient's expectations and their perceptions were evaluated. Results of this study indicated that there are a high gap between patient's expectations and their perception and the greatest gap was related to the tangibility dimension (Peprah *et al.*, 2014). Also in other study conducted in Australia, the quality of the mother and child care centers was examined by SERVQUAL Model and the smallest gap was related to the assurance (Sadiq, 2003). In addition, epidemiological researches are the first step for designing and implementing of preventive intervention programs (Alavijeh *et al.*, 2015, 2016; Jalilian *et al.*, 2016; Hosseini *et al.*, 2016). The analysis of the healthcare services quality enables health planner and manager to do the better financial resources allocating for promoting performance in the areas that have more influential on the patients' perception of service quality. In order to considering the importance of assessing quality of the healthcare services and its main role in health promotion, this study aimed to determine the different dimensions of the quality of the services being provided in Health Centers Kermanshah province in Western Iran in 2015.

MATERIALS AND METHODS

Study design and setting: This was a cross-sectional was conducted during the spring of 2015 in Urban Health Center (UHC) in Kermanshah province in Western Iran. Our study population consisted of the population covered by nine urban healthcare centers.

Sampling: Our study units consisted of 400 individuals who received primary healthcare services in urban Healthcare centers. Samples were selected by multi-cluster random sampling. First, three out fourteen of the towns of

Kermanshah province were chosen. Second by random sampling, three health center were chosen in the each town, then in each health center 45 individuals were selected from these UHC.

Survey instrument: Data was collected by a questionnaire that has two parts. The first part consists 6 questions about socio-demographic characteristics of respondents, i.e., age, gender, marital status, educational status, occupation and reasons for seeking primary health care) and the second part includes SERVQUAL standard questionnaire, contains 22 questions in five dimensions i.e., tangibility (4 questions), reliability (4 questions), responsiveness (4 questions), assurance (5 questions) and empathy (5 questions). A seven-score Likert scale (1 = least important to 7 = very important in expectation section and 1= very poor to 7 = excellent in the perception item) was used to measure the level of respondents' expectation and perception of service quality.

Data analysis: The quality gap was defined as the difference between the expectation and perception scores. The Wilcoxon test was used for comparing the mean score of the expectations of respondents and their perceptions. The reliability and validity of the questionnaire were confirmed by previous studies conducted in Iran (4 and 11). The $p<0.05$ was considered to be statistically significant. The data analysis was done by Stata V.12.

Research ethics: This study was approved by the ethics committee of the Deputy of Research, Kermanshah University of Medical Sciences (code: KUMS. REC.1394.296).

RESULTS AND DISCUSSION

Four hundred respondents were included in the study of which 96.8% (387) were females and 3.2% were males. The results showed the average age of the male's respondents was 40.1±14 years, while it was 30.6±7 years for females. The descriptive characteristics of the study population are shown in Table 1.

Table 2 presents the mean scores of the patients' expectations, their perceptions and quality gap in the five dimensions and 22 items of service quality based on the SERVQUAL Model. Based on our findings, the mean scores of expectations were high and ranged from 6.4 for (item: clean and comfortable environment of the UHC) to 2.7 for (item: employees of UHC do know what your needs are). The total means score of respondents' expectation was 5.46. Among the five dimensions, the highest expectation related to the assurance dimension (dimension's mean score = 5.9) and the lowest expectation

related to the empathy dimension (dimension's mean score = 5). The mean scores of perceptions ranged from

Table 1: Socio-demographic characteristics of the population study, Kermanshah, western Iran, 2015

Socio-demographic characteristics	n	%
Gender		
Male	387	96.8
Female	13	3.2
Age (years)		
<20	31	7.8
21-30	187	46.8
31-40	135	33.7
>41	47	11.7
Marital status		
Married	380	95.0
Single	20	5.0
Educational level		
Illiterate	22	5.5
Lower secondary	136	34.0
upper secondary	161	40.3
Academic degree	81	20.2
Reasons for seeking primary health care		
Family Healthcare	118	29.5
Midwifery care	138	34.5
Vaccination	30	7.5
Laboratory test	89	22.2
Dental care	21	5.3
Environmental care	4	1.0
Occupation		
House wife	326	81.5
Self-employed	41	10.3
Employees	19	4.8
Retirement	14	3.5

related to the empathy dimension (dimension's mean score = 5). The mean scores of perceptions ranged from 4.3 for (item: you can trust employees of UHC) to 3.3 for (item: UHC should have modern and up-to-date equipment). The total means score of respondents' perception was 3.84. Among the five dimensions of quality, the highest perceptions related to the assurance dimension (dimension's mean score = 4.1) and the lowest perceptions related to the responsiveness dimension (dimension's mean score = 3.6).

By subtracting the expectation score from the perception score the gap quality for each item and dimension was computed. The Wilcoxon test results show that the differences between perception and expectation for 21 items (the quality gap in item: employees of UHC do know what your needs are was positive) and five dimension are statically significant ($p<0.001$). The difference between the total mean score of perceptions of the respondents and their expectations was significant and so, there was a negative gap between the individuals' perception and their expectation of the service quality of Kermanshah UHC (Table 2). Our empirical analysis among five dimensions showed that the highest and lowest negative gap of quality of the healthcare services in the

Table 2: Mean scores of expectation, perception of the patients and quality gap of services provided by UHC in Kermanshah in 2015

Dimensions and items	Perception±SD	Expectation± SD	Gap	p-values
Tangibility				
UHC should have modern and up-to-date equipment	3.3±0.9	5±1.7	-1.7	0.001
Clean and comfortable environment of the UHC	3.9±0.4	6.4±1	-2.5	
UHC employees should be well dressed and appear neat	4.1±0.8	5.7±1.4	-1.6	
UHC physical facilities should be visually appealing	4±0.8	5±1.7	-1.0	
Total	3.8±0.5	5.5±1.1	-1.7	
Empathy				
UHC does give you individual attention	4.1±0.9	5.4±1.5	-1.3	
0.001Employees of UHC do give your personal attention	3.8±0.9	5.4±1.7	-1.6	
Employees of UHC do know what your needs are	3.8±0.9	2.7±2.3	+1.1	
UHC does have your best interests at heart	4±1	5.7±1.3	-1.7	
UHC does have operating hours convenient to all their customers	4.2±1.1	5.8±3.8	-1.6	
Total	4±0.6	5±0.8	-1.02	
Assurance				
You can trust employees of UHC	4.3±1.1	5.9±3.5	-1.6	0.001
You feel safe in your transactions with UHC 's employees	4.1±1	6.3±2.7	-2.2	
Employees of UHC arc polite	4.1±1.1	5.8±1.7	-1.7	
Employees get adequate support from UHC to do their jobs well	4±1	5.8±1.2	-1.8	
Total	4.1±0.8	5.9±1.1	-1.82	
Reliability				
When UHC promises to do something by a certain time, it does so	4.1±1.1	5.8±1.7	-1.7	0.001
When you have problems, UHC is empathy etic and reassuring	3.9±1	5.8±1.1	-1.9	
Providing services at appointed time by UHC	3.7±1	5.6±1.4	-.19	
UHC provides its services at the time it promises to do so	3.6±1	4.7±1.7	-1.1	
UHC keeps its records accurately	3.7±1	5.8±1.2	-1.1	
Total	3.7±0.7	5.5±0.9	-1.2	
Responsiveness				
UHC does tell customers exactly when services will be performed	3.7±1	5.7±1.3	-2	0.001
You do receive prompt service from UHC's employees	3.7±0.9	5±2	-1.3	
Employees of UHC are always willing to help patients	3.6±1	5.4±1.5	-1.8	
Employees of UHC are too busy to respond to patients requests promptly	3.6±0.9	5.4±1.7	-1.8	
Total	3.6±1.3	5.4±1.3	-1.72	

UHC relates to the assurance (-1.82) and empathy (-1.02), respectively. Among 21 items with negative gap, the highest gap was -2.5 (item: Clean and comfortable environment of the UHC) and the lowest gap was -1 (item: UHC physical facilities should be visually appealing).

This study aimed to provide a conceptual and practical clear framework to policy maker and planner in the health sector about the quality gap, as a differences between expectation's respondents and their perception, of the primary healthcare based on SERVQUAL Model in Urban Health Center (UHC) in Kermanshah in Western Iran in 2015. Based on our results only 30% of population study reported that they have appropriate health literacy and health literacy of the respondents in various ways should be increased. Several studies have shown that increasing of the health literacy leads to decline the gap between perception and expectations, identify weaknesses and improve the quality of health care provided (Ajam *et al.*, 2014; Sahney *et al.*, 2006). Also, about 80% of respondents were housewives that this finding is consistence with result of other studies conducted in Iran. These studies have shown that the majority of people referred health centers to receive the primary healthcare were women (Ajam *et al.*, 2014; Safi *et al.*, 2015). The most effective and the best strategies to improve the quality of health services is identifying their strengths and weaknesses in an appropriate and practical method and providing an appropriate solutions to address its weaknesses. This study showed that there are negative gap in five dimensions and 21 items of quality of the urban health centers provided. This implies that the total mean scores of expectations of respondents is greater that their perceptions. This findings are in line with the studies conducted by Gorji in hospitals in Tehran, Iran (Abolghasem *et al.*, 2013), the study by Ajam *et al.* (2014) in hospitals in Zabol, Iran in 2014, the study by Rezaei *et al.* (2016) in hospitals in Kermanshah, Iran in the study of Cheng and Tang (2000) in Singapore hospitals the study of Arasli *et al.* (2008) in hospitals in Greece and the study by Brahmbhatt *et al.* (2001) in hospitals in India.

In the study, the highest mean score of perception and expectation in five dimensions were associated with assurance and assurance, respectively, while the lowest mean score of perception and expectation were related to responsiveness and empathy dimensions, respectively. In addition, the highest and lowest mean score of quality gap were associated with assurance and empathy dimensions, respectively. These findings are similar with results of previous studies in Hamadan, Iran (Bahadori *et al.*, 2013), Isfahan, Iran (Esteki, 2012) and in

Kermanshah and Ilam, Iran (Havasbeigi *et al.*, 2013). Also, this finding is not consistent with results obtained from studies conducted in Greece (Arasli *et al.*, 2008), Zagreb, capital of Croatia (Skare *et al.*, 2010) and Kashan, Iran. In these studies, the highest gap of quality of the services was associated with empathy dimension (Papanikolaou and Zygiaris, 2014).

Aghamolaei *et al.* (2014) in Shahid Mohammadi hospital in Bandar Abbas, Iran, founded that the highest mean score of expectation was related to the assurance dimension. Also, their study showed that the assurance had the highest negative gap among all of the dimensions. These finding are quite similar to our study. Bahadori *et al.* (2013) in the Armed Forces Hospital of Hamadan reported the assurance (-0.43) and responsiveness (-0.22) had the highest and the lowest gap of quality in all of dimensions, respectively.

The current study also had several limitations. First, the study conducted in the urban health centers in Kermanshah province in Western Iran and other studies must be piloted in other provinces to increase the generalizability of the results of the study. Another limitation was that the majority of the respondents lived in urban areas and were women. Thus, based on the limitations of the study, our findings must be used with caution and generalization of the results was restricted to the actual population of Iran country, especially people who live in the rural areas without insurance coverage and males.

CONCLUSION

Based on the study, in all of five dimensions and its items, there was a statistically significant difference gap between respondents' perceptions and their expectation in the study population. However, it is suggested that the planners and managers of health centers must improve the timeliness of the delivery of care and enhance the communication skills of staff members in order to increase the quality of the services provided in these setting. The authors recommend that future studies be conducted in rural health center, health house and health post as a main centers primary health care in the rural and urban areas that the results be compared to the results of this study.

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REFERENCES

Abolghasem, G.H., S.M. Tabatabaei, A. Akbari, S. Sarkhosh and S. Khorasan, 2013. Using the service quality gaps model (SERVQUAL) in Imam Khomeini Teaching Hospital: 2012. J. Health Admin., 16: 7-18.

Aghamolaei, T., T.E. Eftekhaari, S. Rafati, K. Kahnouji and S. Ahangari et al., 2014. Service quality assessment of a referral hospital in Southern Iran with SERVQUAL technique: Patients perspective. BMC. Health Serv. Res., Vol. 14, 10.1186/1472-6963-14-322.

Ajam, M., J. Sadeghifar, M. Anjomshoa, S. Mahmoudi and H. Honarvar et al., 2014. Assessing quality of healthcare service by the SERVQUAL model: A case study of a field hospital. J. Mil. Med., 15: 273-279.

Alavijeh M.M, M. Mahboubi, F. Jalilian, A. Aghaei and T.A. Jouybari, 2015. Factors related to self-breast examination based on health belief model among Iranian women. Res. J. Med. Sci., 9: 105-108.

Alavijeh, M.M., K.B. Matin, F. Jalilian, B. Hamzeh and M. Haghighi et al., 2016. Relapse preventative intervention among Iranian addicts based on theory of planned behavior results. Res. J. Appl. Sci., 11: 138-143.

Arasli, H., H.E. Ekiz and T.S. Katircioglu, 2008. Gearing service quality into public and private hospitals in small islands: Empirical evidence from Cyprus. Int. J. Health Care Q. Assur., 21: 8-23.

Bahadori, M., R. Zaboli and A. Ghanbari, 2013. Quality of services provided to veterans referred to a branch of the armed forces in Hamadan. Iran. J. War Public Health, 6: 44-50.

Borie, H.M.A. and S.A.M. Damanhouri, 2013. Patients satisfaction of service quality in Saudi Hospitals: A SERVQUAL analysis. Int. J. Health Care Q. Assur., 26: 20-30.

Brahmbhatt, M., N. Baser and N. Joshi, 2011. Adapting the SERVQUAL scale to hospital services: An empirical investigation of patients perceptions of service quality. Int. J. Multidisciplinary Res., 1: 27-42.

Cheng, L.P. and N.K. Tang, 2000. A study of patients expectations and satisfaction in Singapore Hospitals. Int. J. Health Care Q. Assur., 13: 290-299.

Esteki, R. and A. Attafar, 2012. Quality of nursing services (contemporary level of reality and level of expectation) from nurses viewpoint on the basis of SERVQUAL Model in Al-Zahra Hospital in Isfahan 2010. Mod. Care J., 9: 72-79.

Havasbeigi, F., B. Yasbalaghisharahi, E. Mohamadi and A. Mohamadi, 2013. Measuring the quality of services provided for outpatients in public hospitals in Ilam and Kermanshah cities based on the SERVQUAL instrument. J. Ilam Univ. Med. Sci., 21: 207-213.

Hosseini, S.N., M.M. Alavijeh, B.K. Matin, B. Hamzeh and H. Ashtarian et al., 2016. Locus of control or self-esteem which one is the best predictor of academic achievement in Iranian college students. Iran. J. Psychiatry Behav. Sci., Vol. 10.

Jalilian, F., H. Joulaei, M.M. Alavijeh, B. P. Samannezhad et al., 2016. Cognitive factors related to cigarettes smoking among college students: An application of theory of planned behavior. Social Sci., 11: 1189-1193.

Kebriaei, A., F. Akbari, M. Hosseini, E.H. Ardabili and A. Pourreza, 2004. Survey on quality gap in primary health care in Kashan Health Centers. J. Qazvin Univ. Med. Sci., 31: 82-88.

McLelland, A.E., M.M.T. Iverson and R.J. Beninger, 2014. The effect of quetiapine (Seroquel TM) on conditioned place preference and elevated plus maze tests in rats when administered alone and in combination with (+)-amphetamine. Psycho Pharmacol., 231: 4349-4359.

Mirzaei A.M., Z.M. Nasir, M. Mostafei, S. Khodarahmi and F. Jalilian et al., 2011. Anxiety prevalence survey of 144 students from payam-e-nour boiene mieandasht university (Isfahan) and its relationship with irritable bowel syndrome in 2011. Govaresh, 16: 83-90.

Mohammadi, A., E.H. Ardabili, A.F. Hagigi, M. Mahmudi and A. Purreza, 2003. Measurement quality of services based on expectations and perceptions of patients in the Hospital of Zanjan. J. Sch. Health Res. Inst., 2: 71-84.

Mohammadnia, M., B. Delgoshaei, S.H. Tofighi, L. Riahi and A. Omrani, 2010. Survey on nursing service quality by SERVQUAL at Tehran Social Security Organization Hospitals. J. Hosp., 8: 68-73.

Papanikolaou, V. and S. Zygiaris, 2014. Service quality perceptions in primary health care centres in Greece. Health Expectations, 17: 197-207.

Peprah, A.A. and B.A. Atarah, 2014. Assessing patients satisfaction using SERVQUAL model: A case of Sunyani Regional Hospital, Ghana. Int. J. Bus. Soc. Res., 4: 133-143.

Ramanujam, P.G., 2011. Service quality in health care organisations a study of corporate hospitals in Hyderabad. J. Health Manage., 13: 177-202.

Rezaei, S., B.K. Matin, K.B.B. Moradi, M. Fallahi and B. Shokati *et al.*, 2016. Measurement of quality of educational hospital services by the SERVQUAL model: The Iranian patients perspective. Electron. Physician, 8: 2101-2106.

Rohde, J., S. Cousens, M. Chopra, V. Tangcharoensathien and R. Black *et al.*, 2008. 30 years after Alma-Ata: Has primary health care worked in countries?. Lancet, 372: 950-961.

Sabahi, B.M., S.G.A. Mousavi, A. Kebriaei, S.H. Seyyedi and S. Shahri *et al.*, 2011. The quality of hospital services in Kashan educational hospitals during 2008-9: The patients viewpoint. Feyz J. Kashan Univ. Med. Sci., Vol. 15.

Sadiq, S.M., 2003. Service quality in hospitals: More favourable than you might think. Managing Serv. Q. Int. J., 13: 197-206.

Safi, M.H., A.A. Fereydounfar and S. Arshi, 2015. Quality of primary health services in the clinics of shomal health center of Tehran. Community Health, 1: 54-61.

Sahney, S., D.K. Banwet and S. Karunes, 2006. An integrated framework for quality in education: Application of quality function deployment, interpretive structural modelling and path analysis. Total Qual. Manage., 17: 265-285.

Sahney, S., D.K. Banwet and S. Karunes, 2008. An integrated framework of indices for quality management in education: A faculty perspective. TQM. J., 20: 502-519.

Skare, T., V. Skare and O.D. Dosen, 2010. Measuring health care service quality by using servqual. J. Soc. Policy, 17: 27-44.