Research Article

Service Quality for people with type 2 diabetes in Tabriz, Iran: the patients' perspective

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Abstract

Purpose: To assess the service quality of care as perceived by people with Type 2 Diabetes (T2D).

Methods: A cross-sectional study was carried out among 180 people with Type 2 diabetes in a clinic using simple random sampling method in Tabriz, Iran in 2012. Service quality was calculated using the equation "SQ=10 – (Importance ×Performance)" based on the importance and performance of non-health aspects from the patients' perspective. The content validity of questionnaire was confirmed by 10 experts.

Results: From the participants' perspective, out of the 12 aspects of service quality, communication and prevention had the highest score for importance. Dignity had the highest score for performance. But the highest service quality values were for continuity of care, dignity and confidentiality. There was no statistically significant relationship between service quality score, age and diabetes status.

Conclusion: The findings revealed that there is a notable gap between patients' expectations and perceptions. Moreover, overall service quality and all aspects of service quality with the exception of continuity of care, dignity and confidentiality had inadequate quality.

Introduction

Type 2 Diabetes (T2D) is one of the usual medical problems that had an important negative effect on patients' health. Research demonstrates that there is a wide gap between recommended medical actions and received care by the patients with diabetes [1]. Diabetes is the 9th cause of death among Iranian men and the fifth cause of death in high income countries. According to WHO assessment, the prevalence rate of T2Din Iran through the years 1995, 2000 and 2025 has been estimated to be 5.5, 5.7 and 6.8, respectively [2]. The quality of health care is defined as "the production of improved health and satisfaction of a population within the constraints of existing technology, resources, and consumer circumstances" [3] Quality of care must be defined in the light of the providers technical standards (technical quality) and patients expectations (service quality) [4]. Service Quality (SQ)is related to the manner of delivery of health-care services [5] which affects on customers satisfaction and patients participation and improving SQ can improve the outcomes for people with Type 2 diabetes including glycemic control, reduced micro and macro-vascular complications, increasing patients' satisfaction and quality of life [6]. The present study aimed to assess the SQ of delivered health care from the perspective of people with Type 2 diabetes in Tabriz, Iran.

Methods

A cross-sectional survey was conducted in Tabriz, Iran in 2012. Potential participants were randomly selected from patient register list in diabetes clinic. Eligible participants were people with Type 2 diabetes with a diagnosis at least one year before the participation in this study. They were over 25 years of age

and received specific care from diabetes clinic regularly. Of the 200 contacted patients with type 2 diabetes, 180 subjects returned the questionnaire (90%). 18 participants were not willing to participate in the study (9%) and 2 patients were not able to answer questions (1%).

The study questionnaire used consisted of four parts: *demographic information* (Age, Sex, Residential areas, Body Mass Index, History of smoking, Education status, Employment status, health insurance), *clinical history*, *self-reported risk factors status* such as tobacco smoking; and *importance and performance scores* for 12 aspects of SQ including 46 questions. The validity of questionnaire was reviewed and confirmed by 10 experts. Also, reliability of the questionnaire was confirmed. For calculating body mass index, self- reported height and weight were used. For each aspect of service quality, respondents were asked to evaluate the importance of the aspect and perceived quality (performance) of the aspect based on their views during the past 12 months. The Importance of SQ was scored on a four-point Likert scale, which ranged from«0=non important, 3= may be important, 6= important and 10= very important».Perceived performance of services was scored on a four -point scale ranging from « 0= usually/always or good/excellent» and « 1= never/sometimes or poor/ fair». Overall SQ and aspects, SQ calculated as: SQ= 10 – (Importance × Performance). The range of SQ score was from 0=the worst/ the lowest quality to 10 =the best/ the highest quality. It is reasonable to conclude that SQ score of less than 9 indicates a significant opportunity for improvement. Also to determine association between SQ score and diabetes status Independent samples Test was conducted. General linear model (GLM) was used for multivariate analyses. Statistical analyses were carried out using SPSS software version 13(SPSS, IL, Chicago, USA).*P-value*s ≤ 0.05 were considered as statistically significant level.

Results

The majority of the participants were women (67%), under 64 years old (76%), living in major cities (79%) and overweight (46%). Few participants had a history of smoking and the majority of them were nonsmokers. Almost half of the participants were illiterate and most of them were thrifty and had health insurance (Table1).

Table 1. Characteristics of study participants with Type 2 diabetes.

Characteristics		Number	Percent
Sex	Male	60	33.3
	Female	120	66.7
Age	≤64	137	76.1
	65-74	27	15
	≥75	16	8.9
Residential areas	Major city	143	79.4
	Outer region	37	20.6
Body mass index(kg/m^2)	< 18.5 (Malnutrition)	1	0.6
	18.5-25(Normal weight)	57	31.7
	25-30(over weight)	82	45.5
	>30(obese)	40	22.2
History of smoking	Yes	13	7.2
	No	167	92.8
Education status	Illiterate	85	47.2
	Some high school	73	40.6
	Completed high school	14	7.8
	university	8	4.4
Employment status	Employed	28	15.6
	unemployed	112	62.2
	Retired	40	22.2
health insurance	Yes	176	97.8
	No	4	2.2

Table 2. Self-reported type 2 diabetes status, treatment and complications.

Characteristics		Number	Percent
Diabetes status	Poorly control	24	13.3
	Well control	156	86.7
Diabetes duration	<5	63	35
	5-9	56	31.1
	≥10	61	33.9
Diabetes treatment	Medical therapy	81	45
	Lifestyle therapy	4	2.2
	Both medical and lifestyle therapy	93	51.7
	None	2	1.1

	Yes	125	69.4
Diabetes complications	No	54	30

From the participants' perspective, most of them (87%) had well-controlled diabetes and Type 2 diabetes duration for one-third of patients was more than 10 years. The majority of the participants (45%) took medical therapy and more than half of them received both medical and life style therapy. The majority of the participants (70%) had diabetes complications (Table 2).

Table 3 shows the scores of importance, performance and SQ. The aspects that had the highest scores for importance (> 7.00) were communication and prevention. The aspect that had the highest score for performance (<0.2) was dignity. Continuity of care, dignity and confidentiality had the highest SQ scores.

As Table 4 shows, according to one-way ANOVA analysis for overall SQ, there was no statistically significant relationship between SQ score and age (P-value>0.05). Also according to independent T-Test there was no statistically significant relationship between SQ score and diabetes status (P-value>0.05).

Difference between age groups and diabetes control status were tested for significance using general linear model for each of the SQ aspects. There was no statistically significant differences for any of the aspects among age groups and between poorly-controlled and well- controlled diabetes (Table 5).

Table 3. Importance, Performance and SQ scores for people with type 2 diabetes.

Service quality aspects	Importance[1]	Performance[2]	SQ[3]
Overall service quality	5.87	0.37	8.17
Choice of care provider	5.4	0.49	7.9
Communication	7.09	0.27	8.2
Autonomy	4.38	0.64	7.62
Continuity	4.72	0.41	9.3
Quality of basic amenities	6.19	0.29	8.44
Support group	4.2	0.64	8.2
Dignity	6.79	0.20	8.93
Timeliness/prompt attention	5.03	0.24	7.87
Prevention/early detection	7.03	0.37	7.45
Accessibility	6.7	0.27	7.95
Confidentiality	6.17	0.32	8.8
Safety	6.96	0.4	7.34

1. Range between 0(not important) and 10(very important)
2. Range between 0(good) and 1(poor)
3. Range between 0(worst) and 10(best)

Table 4. Relationship between age and diabetes control with overall SQ.

Characteristics		Average score	P-value
Age	≤64	8.38	
	65-74	8.39	0.416
	≥75	8.28	
Diabetes status	Poorly controlled	8.38	0.916
	Well controlled	8.36	

Table 5. SQ aspects score from the patients' perspective by age group and diabetes control.

SQ aspects	Age			T2D control	
	≤64	65-74	≥75	Poorly control	well control
Choice of care provider	8.03	7.85	6.89	8.12	7.87
Communication	8.12	8.7	7.96	8.43	8.15
Autonomy	7.67	7.6	7.21	7.81	7.59
Continuity	9.35	9.14	9.14	9.45	9.28
Quality of basic amenities	8.5	8.3	8.1	8.2	8.47
Support group	7.9	8.3	8.23	8.56	8.16
Dignity	9.06	8.35	8.66	9.14	8.89
Timeliness/prompt attention	7.85	7.82	8.1	7.64	7.9
Prevention/early detection	7.4	7.6	7.5	7.81	7.39

Accessibility	7.9	7.88	9.16	7.61	8.38
Confidentiality	8.83	8.83	8.83	8.8	8.36
Safety	7.45	6.78	7.42	7.18	7.35

Discussion

The present study assessed the SQ of health care from the perspective of people with T2D. The findings of the present study suggest some SQ aspects that need to be improved for people with T2D. The SQ score was the highest for the continuity of care, dignity and confidentiality. However, autonomy, safety, prevention and timeliness were the aspects with the lowest SQ scores from the participants' perception.

Continuity of care that refers to delivery of comprehensive and continuous services, develops a more personal relationship, reduces repetition of information, increases mutual understanding, helps patients feel at ease and increases their confidence [8], was the aspect with the highest SQ score (SQ=9.3).This finding was inconsistent with findings by Tabrizi and colleagues [9] and Abdulhadi and colleagues [10]. However, a high perceived quality (high importance and high performance) of continuity of care was reported in study by Hanberger and colleagues [11]. In the present study, high quality of continuity of care is related to low importance for it from the participants, perspective. This finding, however, does not accord with results of Stenner and colleagues [8] and Gulliford and colleagues [12]. The results of Parchman and colleagues [13] and Gulliford and colleagues [12] studies show that the continuity of care for people with type 2 diabetes affects general quality of care and patients' satisfaction.

In the current study, the SQ score for dignity was relatively high, which is consistent with findings by Tabrizi and colleagues [9], Hanberger and colleagues [11] and Westaway and colleagues [14]. In the study by abdulhadi and colleagues [10] and Stenner and colleagues [8], respect to private sanctum and personal pattern were important and affected quality of delivered care for people with type 2 diabetes.

Our findings of relatively high SQ for confidentiality is consistent with findings by Tabrizi and colleagues [9]. Also the results of this study indicate that the SQ score for "basic amenities" was relatively low. This findings, however, is not supported from the Tabrizi and colleagues [9] and Thiedke [15] studies. In the study by Westaway and colleagues [14], 68% of people with diabetes were satisfied with quality of basic amenities.

SQ score for "communication" that refers to relationship between patient and providers and providing the clear information by care providers, was relatively low. This finding is in line with the results of Hanberger and colleagues [11] and Schenker and colleagues [16]. Also, the findings by Bundesmann and colleagues [17] and Matthews and colleagues [18] show that patient-provider communication was the most important factor affecting diabetes management from the patients' perspective. But the perceived reality of it [such as providing sufficient and clear information) was weak. In contrast with, the findings of Tabrizi and colleagues [9], Westaway and colleagues [14] and Abdulhadi and colleagues [10] indicate that people with diabetes were nearly satisfied with communication. Also, in the study by Stenner and colleagues [8], people with diabetes were satisfied with the amount of provided information (verbal and written information) and having opportunity for asking their questions from providers. The findings of the study by Coulter and colleagues [19] indicate that half of the respondents believed that their physicians listen to them carefully, give them sufficient time to ask questions and provide clear explanations.

SQ score for "support group" was low that were not consistent with findings of Tabriziand colleagues [9].

The quality of "autonomy" was low that consistent with findings of Matthews and colleagues [18]. Also, in the study by Sekimoto and colleagues [20], only 7-16% of respondents preferred active role for participation in decision-making but the majority of them considered own opinions to be most important in the final decision-making. However, the finding of the current study does not consistent with findings of Stenner and colleagues [8] and Hanberger and colleagues [11]. Also, in the study by Hajos and colleagues [21] and Coulter and colleagues [19], the majority of participants emphasized on the actively patients' involvement and shared decision making.

In the present study, the majority of participants were dissatisfied with access to health services, the highest dissatisfaction was related to geographical access to facilities, but cultural accessibility was not very important for participants. This finding is consistent with the findings of Tabrizi and colleagues [9]. However, does not support the findings of Jotkowitz and colleagues [22]. Also, the results of Hanberger and colleagues [11] show that the performance and the importance of access to diabetes nurse as well as the performance of access to diabetes doctor are low. In the study by Skinner and colleagues [23], people with T1D and T2D who lived in rural areas, experienced poor economical and geographical access.

The quality score for "timeliness and prompt attention" was low that supports the findings of Hanberger and colleagues [11].

The both distance and price are significant determinants for "choice of health care" [24], which in the current study, this aspect achieved low quality score. Tembon [25] showed that the effective factors for choice of care provider are time, income, size of family, distance, cost of services and socioeconomical status.

Our findings of relatively low service quality for "prevention and early detection" is consistent with findings by Tabrizi and colleagues [9], Bundesman nand colleagues [17], Hanberger and colleagues [11] and Abdulhadi and colleagues [10]. The importance of diabetes self-management education (DSME) in promoting preventive health behaviors of persons with Type 2 diabetes has been supported by results of Strine and colleagues [26] This results show that only 52% of people with T2D have received DSME.

The lowest quality score was related to "safety". This finding is consistent with the findings of Abdulhadi and colleagues [10]. However, the study by Tabrizi and colleagues [9] shows relatively low score for safety among participation in Australia.

In the present study, there was not meaningful relationship between age and diabetes status with total SQ and SQ aspects, which was not consistent with findings by Rosenstock and colleagues [27], Tabrizi and colleagues [9], Westaway and colleagues [14] and Thiedke [15].

Conclusion

In conclusion, our results suggest that, for people with Type 2 diabetes, there is a notable gap between their expectations and their experience in most aspects of provided care. SQ score for 9of 12 aspects had been relatively low. These findings should concern policymakers, health managers and care providers. Planning and implementation of quality improvement programs for each aspect with low quality score is necessary to meet the needs and expectations of people with T2D.

Conflict of interests:

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