

Predictors of Patient Satisfaction; Quality Dimensions and Demographic Characteristics

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Abstract

Background: The healthcare industry is increasingly growing in a competitive atmosphere. One of the essential key issues for the survival of healthcare organizations is patient satisfaction. This study aimed to investigate the impact of health service quality and demographic characteristics on patient satisfaction with outpatient departments at teaching hospitals affiliated with Tehran University of Medical Sciences in Iran.

Method: This cross-sectional study was conducted in 2018. A sample of 400 patients referring to outpatient departments at teaching hospitals was randomly selected. A valid and reliable questionnaire was used to collect data which were then analyzed by using SPSS 23.

Results: The mean scores of service quality and patient satisfaction were 3.73 ± 0.51 and 3.61 ± 0.97 out of 5, respectively. Moreover, patients' demographic characteristics; age, marital status, residence area, and service quality dimensions; admission process, physician consultation, service costs, accessibility, and appointment were identified as the most effective factors on patient satisfaction.

Conclusion: In order to increase patient satisfaction, physicians and reception staff are advised to provide patients with useful information and cost-effective services. Nonetheless, it seems necessary for teaching hospitals to establish plans which facilitate payment, appointment, and examination process.

Background

The healthcare industry is increasingly growing in a competitive atmosphere. Patient satisfaction is one of the key issues for the survival of healthcare organizations (1) since satisfied patients are willing to continue using healthcare services from quality institutions and recommend them to others (1, 2). Patient satisfaction refers to an individual's assessment of his or her healthcare experiences, expectations, and quality of care (3); it also reflects patients' judgment of their interactions with service providers (4). Patient satisfaction is becoming one of the essential constructs of healthcare services and is associated with completing treatment and an increased likelihood of getting better (5). In addition, it has gained importance to managers during planning, solving organizational problems, and recognizing the overall level of a health unit performance (6). Customer satisfaction is not an adequate requirement for re-visit intention; however, it is considered to be a valuable prerequisite for patients' loyalty intention (7).

Service quality, in the health sector, consists of technical (outcome) quality and functional (process) quality. The former refers to the skills and the accuracy of medical diagnosis and procedures, whereas the latter focuses on the provision of healthcare services to patients, such as admission processes, physical environment, and waiting time, inter alia (8). Traditional evaluations of patient satisfaction mainly focused on technical and physical features of healthcare delivery and patients' feedbacks were not taken into consideration (9), but nowadays technical quality of care has been found to be less important than other factors (10). Assessing medical services in terms of clinical effectiveness can present a number of constraints; therefore, the necessity for efficiency, cost reduction, and high-quality

services requires healthcare organizations to improve their skills and gain patients' trust in health service providers (9).

Patient satisfaction is a multidimensional concept which contains influential factors, such as demographic characteristics, waiting time, information provision, technical competence, interpersonal factors and physical environment (11). Over time, the concept of patient satisfaction has been correlated with health quality and considered as a part of quality consequences (12).

Several systematic review studies indicated a significant association between patient satisfaction and elements of health service quality which has been recognized as one of the key predictive factors of patient satisfaction. It was also found that waiting time and doctor-patient relationship, as health service factors, had the greatest impact on patient satisfaction (11, 13, 14). In addition, a significant association was found between patients' satisfaction and their demographic characteristics, such as age and health status. For instance, older patients and healthier patients were usually more satisfied (13, 15).

The measurement of the relative weight of quality dimensions can also lead to more effective administrative activities, resource allocation, and decision making and guarantee patient satisfaction (16). However, healthcare systems in most developing countries are not efficient and face serious financial problems and, therefore, have difficulties to resolve issues related to patient satisfaction. Satisfied patients may demonstrate favorable behaviors which are important for the success of healthcare providers in the long run (17).

Most studies in Iran have mainly focused on the assessment of the relationship between inpatient service quality and patient satisfaction (18) without evaluating hospital or outpatient services. While outpatient departments are regarded as one of the most important parts in health systems (19) because they refer most patients to inpatient departments and patients judge the overall hospital services on the basis of the services they receive in clinics (20). Therefore, the current study aimed to investigate the impact of health service quality and demographics characteristics on patient satisfaction with outpatient departments at teaching hospitals affiliated with Tehran University of Medical Sciences (TUMS) in Tehran.

Method

This cross-sectional study was conducted over the first half of 2018. There are 16 teaching hospitals affiliated with TUMS in Tehran (seven general and nine specialized hospitals); however, only four hospitals (two general and two specialized) were randomly chosen. The study population consisted of 400 patients referring to outpatient departments. They were recruited through a multistage systematic random sampling. The budget share of each hospital and the number of questionnaire distributor were determined in proportion to its size (number of outpatients). Outpatient departments work from Saturday to Thursday; consequently, a systematic sampling technique was employed to provide the patients with an opportunity to participate in this study. The participants were required to have a sound perception of quality, so the patients of 18 years and above were included in the study. A questionnaire was completed

by the patients just after visiting their doctors and prior to leaving the hospital; however, patients (n = 14) refusing to take part in the study were substituted by other patients.

Data collection tool

Data were collected by using a validated and reliable questionnaire (21) with seven themes on socio-demographic and eight main themes on hospital's outpatient service quality including 37 sub-themes, i.e., accessibility (3 items), appointment (2 items), waiting time (2 items), admission process (3 items), physical environment (6 items), physician services (11 items), disclosure of information to patient (7 items) and cost of services (3 items). It also included seven items on patient satisfaction. The patients were required to indicate the degree to which they agreed with the items by using a five-point Likert rating scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Data analysis

Data were analyzed by SPSS 23. After the descriptive tests, linear regression analysis was applied to measure the effect of service quality variables and demographic characteristics on patient satisfaction (22).

Results

According to Table 1, 52% (n = 206) of the respondents were from specialized hospitals. About 55% (n = 221) of the patients were male and 73% (n = 290) were married. According to the findings, 86% (n = 344) of the participants lived in urban areas, and 66% (n = 265) were primary and secondary school graduates. Finally, 46% (182) of the patients reported their health status to be fair.

Table 1
Socio-demographic data of the sample (N = 400)

Variables	Per cent	Number
Gender		
Male	55.3	221
Female	44.8	179
Marital status		
Married	72.5	290
Single	22	88
Widowed	2.5	10
Divorced	3	12
Residential Area		
Urban	86	344
Rural	14	56
Education level		
No schooling	2.3	9
Primary and Secondary school	66.3	265
University	31.5	126
Health status		
Excellent	6.8	27
Good	31.3	125
Fair	45.5	182
Poor	16.5	66
Hospital type		
Specialized	51.5	206
General	48.5	194

As highlighted in Table 2, the lowest mean score (2.64) was pertinent to patient waiting time, while the highest mean scores were related to physician consultation (4.17) and service costs (4.15). Regarding the sub-themes, the lowest and highest mean scores were related to Q₇ (Delay and waiting in the clinic to see

the doctor) (2.20) and Q₂₇ (Observing the patient's privacy) (4.45), respectively. Moreover, the mean score and the standard deviation for the overall service quality were 3.73 and 0.51, respectively.

Table 2
Means and standard deviations of quality dimensions

Variables	Mean	SD
Accessibility	3.23	0.82
Q ₁ : suitable clinic working days and hours	3.29	1.12
Q ₂ : Easy access to the clinic from all parts of the city	3.51	0.94
Q ₃ : multiple physicians and the right to choose for the patients	2.90	1.08
Appointment	3.32	1.18
Q ₄ : polite conduct and quickness of the clinic secretary in determining the appointments	3.36	1.28
Q ₅ : Providing useful information by the secretary about the physicians and the clinic	3.30	1.34
Waiting time	2.64	1
Q ₆ : Visiting the doctor on the pre-determined day and hour	3.09	1.15
Q ₇ : Delay and waiting in the clinic to see the doctor	2.20	1.21
Admission process	3.94	0.76
Q ₈ : clinic's admission staff behavior (security guards, receptionist, and cashier)	3.74	1.08
Q ₉ : Quick filing process	3.85	1.03
Q ₁₀ : Speed and convenience of payment process	4.24	0.83
Physical environment	3.33	0.78
Q ₁₁ : Clean and neat environment	3.70	1.02
Q ₁₂ : Decoration and arrangement of furniture in the waiting area	3.34	1.07
Q ₁₃ : Suitable temperature	3.56	1.02
Q ₁₄ : Adequate number of chairs for the patients to sit on	3.52	1.31
Q ₁₅ : The waiting area's welfare facilities	2.92	1.07
Q ₁₆ : Noisy and crowded clinic	2.99	1.02
Physician consultation	4.17	0.60
Q ₁₇ : Treating the patient politely	4.28	0.70

Variables	Mean	SD
Q ₁₈ : Respecting the human dignity of the patient	4.13	0.79
Q ₁₉ : Honesty and truthfulness in dealing with the patient	4.31	0.67
Q ₂₀ : Good describing of the recommended treatment plan to the patient	4.10	0.81
Q ₂₁ : Empathy and understanding of the patient's problems	4.03	0.92
Q ₂₂ : Creating trust and confidence in the patient	4.03	0.91
Q ₂₃ : Giving simple and understandable explanations to the patient	4.04	0.84
Q ₂₄ : Complete and careful attention to the patient words	3.92	0.94
Q ₂₅ : Neatly dressed and adornment	4.38	0.61
Q ₂₆ : Careful and complete examination of the patient	4.22	0.68
Q ₂₇ : Observing the patient's privacy	4.45	0.58
Information provision to patient	3.74	0.83
Q ₂₈ : Explaining the examinations and treatment plan to the patient	4.25	0.76
Q ₂₉ : Explaining the drugs' side effects	3.81	0.96
Q ₃₀ : Explaining the treatment decisions and reasons why they have been chosen	3.70	1.06
Q ₃₁ : Answering the patients' questions	3.61	1.09
Q ₃₂ : Providing information regarding the future changes in the patient's health process	3.39	1.03
Q ₃₃ : Giving the patient additional information on the life style (diet, exercise, etc.)	3.43	1.04
Q ₃₄ : Giving the patient necessary information on the follow-up	3.89	0.95
Service costs	4.15	0.84
Q ₃₅ : Reasonable and suitable visit cost	4.29	0.86
Q ₃₆ : Providing quality services by the clinic vs. the paid money	4.04	1.07
Q ₃₇ : Valuable services received from the clinic	4.14	1
Overall Service quality	3.73	0.51

Table 3 presents the mean and standard deviation scores of the overall satisfaction with service quality. The highest and lowest mean scores were related to Q₁ (Totally, I am satisfied with the clinic and its services) and Q₄ (This clinic and its services are very close to the ideal clinic in my mind), respectively. The mean score and standard deviation for the overall satisfaction were 3.61 and 0.97, in that order.

Table 3
Means and standard deviations for the overall patient satisfaction

Items	Mean	Standard Deviation
Q ₁ : Totally, I am satisfied with the clinic and its services.	3.80	1.07
Q ₂ : This clinic and its services met my needs.	3.71	1.04
Q ₃ : This clinic and its services were according to my expectations.	3.56	1.09
Q ₄ : This clinic and its services are very close to the ideal clinic in my mind.	3.12	1.22
Q ₅ : I will use the services of this clinic again.	3.76	1.02
Q ₆ : I will say positive things about this clinic and services to others.	3.61	1.12
Q ₇ : I will recommend this clinic to my friends and relatives.	3.73	1.07
Overall satisfaction	3.61	0.97

According to Table 4, the linear regression analysis demonstrated a positive correlation between patients' satisfaction and their age, marital status (married), and residence area. The highest unstandardized coefficient was related to patients with low economic status ($b = 1.34$). The most significant unstandardized coefficient was observed between service quality dimensions, admission process, physician consultation, service costs, accessibility, and appointment and patient satisfaction. The R square value for all variables was 0.662.

Table 4

Regression results in determining the relationship between satisfaction and patients' demographic characteristics and service quality dimensions

Variable	b	β	t-value	Sig.
Demographic characteristics				
Age	-0.01	-0.22	-4.66	< 0.001
Gender				
Female (reference)				
Male	-0.05	-0.03	-0.91	0.36
Marital status				
Married (reference)				
Single	-1.31	-0.23	-4.79	< 0.001
Widowed	0.67	0.15	3.23	0.001
Divorced	0.23	0.09	2.51	0.01
Residential Area				
Urban (reference)				
Rural	-0.35	-0.12	-3.41	0.001
Education level				
No schooling (reference)				
Primary and Secondary school	0.02	0.01	0.30	0.75
University	-0.43	-0.06	-1.53	0.12
Health status				
Excellent (reference)				
Good	0.10	0.04	1.10	0.27
Fair	0.04	0.02	0.55	0.58
Poor	-0.44	-0.11	-2.96	0.003
Hospital type				
Specialized (reference)				
General	0.10	0.05	1.33	0.18
Service quality dimensions				

Variable	b	β	t-value	Sig.
Accessibility	0.19	0.16	3.85	< 0.001
Appointment	0.13	0.16	3.72	< 0.001
Waiting time	0.005	0.005	0.11	0.90
Admission process	0.34	0.27	6.12	< 0.001
Physical environment	0.10	0.08	1.72	0.08
Physician consultation	0.32	0.19	4.53	< 0.001
Information provision to patient	-0.01	-0.01	-0.25	0.80
Service costs	0.26	0.22	5.97	< 0.001
b = unstandardized coefficient; β = standardized coefficient Adjusted $R^2 = 0.662$; $F = 26.17$; $P > 0.001$				

Discussion

The current study aimed to investigate the relationship between service quality dimensions and demographic characteristics and patient satisfaction. The total mean score of service quality (3.73) was less than that of the study in Nigeria where the overall mean score of service quality across all dimensions was 4.20 (23). This result was almost in accord with another study in Iran in which the overall service quality mean score was 3.89 (5).

As stated by Cohen, R^2 values greater than 0.25 represent a significant variance in the model (24). The R^2 value in this study was 0.662 meaning that approximately 66.2% of the variance of satisfaction were defined through the service quality dimensions and demographic characteristics as the independent variables. Therefore, the regression model has relatively good predictive power. The results are in line with those of the studies previously conducted in Iran and South Korea (5, 25).

The overall patient satisfaction mean score was 3.61 out of 5 that is relatively high; however, other studies in the Central and Eastern European countries and Uganda reported low consumer satisfaction with the healthcare system (10). Satisfaction levels with healthcare services can be associated with patients' expectations (2, 10, 14), i.e., patients with lower expectations who are uncritical or lack knowledge may be more satisfied with services than patients with higher expectation (2).

All questions obtained good mean scores; however, the highest mean score (3.8 out of 5) was related to Q1, i.e., "Totally, I am satisfied with the clinic and its services". Whereas in other similar studies in Iran and Ethiopia the highest mean score was related to Q7, "I will recommend this clinic to my friends and relatives" (5, 26).

Based on the regression results, the admission process was the most significant predictor of patient satisfaction. It means that the behavior of reception staff (courtesy, friendliness, and respect) can increase the overall patient satisfaction. The finding is in accord with those of previous studies where patient satisfaction was positively associated with quick and easy admission (11) and scheduled admission (27). Likewise, the results of a study in Turkey referred to admission process as one of the most critical healthcare shortcomings causing patient dissatisfaction (28).

Physician consultation was the second determinant of patient satisfaction. The result can be attributed to patients who were not aware of medicine and medical procedures; consequently, gave higher scores to this item. Similarly, other studies approved the significant relationship between physician consultation and patient satisfaction meaning that doctor-patient relationships, effective communication, and empathy during the consultations play an important role in patient satisfaction (5, 14, 16).

A significant relationship was observed between service cost and patient satisfaction (coefficient = 0.26), that is, patients are satisfied if they perceive that out-of-pocket payments are reasonable in terms of value and quality. The result matches the findings of previous studies where service costs were found to be one of the important determinants of patient satisfaction (5, 25, 29)

Accessibility and appointment were recognized as two other factors affecting patient satisfaction. These findings are reinforced by those of previous studies in which accessibility was an important and determining factor in patient satisfaction (13, 30). The importance of getting an appointment (faster and easier) has been demonstrated in another study (11).

The regression analysis of patients' demographic characteristics and their satisfaction indicated that only age, marital status, and residence area had significantly affected patient satisfaction. Although previous studies described the relationships between patients' demographic characteristics and their satisfaction with services, there are not sufficient sources in literature to narrate the main reasons of the relationships which can be either due to differences in patient values and expectations or the differences in the treatment they receive (31).

Regarding the patients' age, it was found that the younger patients were more satisfied with services than the older ones. This can be attributed to old patients' frequent healthcare visits, their focus on details of provided services or facilities which meet their special needs (e.g. wheelchair). This is consistent with the findings of other studies in which the older patients reported lower satisfaction with their hospital services (31, 32)

Moreover, a statistically significant association was found between patients' residence area and the overall satisfaction score. The respondents in urban areas were more satisfied with the services. Perhaps, patients from rural area, after travelling long distances, had higher expectations of services in the urban clinics. These results are in contrast with those of a study in Nigeria where the patients living outside the site of the clinic were more satisfied than those living within the location (33). However, a study by

Atkinson and Haran in Brazil indicated that urban populations were more likely to be satisfied with services (34).

As for marital status, single patients were found to be more dissatisfied with provided services, and a negative coefficient ($b = -1.31$) was observed between the single and married patients. This is in contrast with the findings of the study by Quintana *et al.* who conducted a cross-sectional study to assess predictors of patient satisfaction with regard to their socio-demographic variables and found that single or divorced respondents were more satisfied with health services (35).

Finally, a limitation of this study is that the data were collected through a self-report questionnaire in hospitals which may lead to a bias which could have been avoided if the patients were required to answer the questions the day after referring to hospitals.

Conclusion

The findings indicated that admission process, physician consultation, service costs, appointment and accessibility (service quality dimensions), age, marital status and residential area (demographic characteristics) were the most important determinants of patient satisfaction.

In order to increase the patient satisfaction, it is recommended that physicians and reception staff provide better and more useful information and cost-effective services to patients. Moreover, patients were mostly dissatisfied with waiting time; therefore, the teaching hospitals are advised to establish easy payment schemes, use ticket machines, and schedule the timely presence of doctors to examine patients.

The findings can be valuable for hospital managers to have a better understanding of their patients' special needs and improve their service quality.

Abbreviations

TUMS

Tehran University of Medical Science

Declarations

Ethics approval and Consent to participate

The ethics approval for the research was granted by the Deputy of Research Affairs, The school of Allied Medical Sciences, Tehran University of Medical Sciences. Prior to the investigation, the patients who participated voluntarily were all informed of the aims of the study. Verbal informed consents were taken from the patients because according to ethical principles of Iran verbal consents written consent are not required for studies including non-invasive clinical techniques and verbal consents will suffice. To ensure the confidentiality of the information, the required data were collected anonymously. The

participants did not have to write their names, phone numbers, and their address in the questionnaire. The participants had the right to withdraw from research at any time.

Consent for Publication

Not applicable.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author.

Competing interests

The authors have no conflict of interest to declare.

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Authors' contributions

EZ and PF substantially contributed to the conception or design of the work. PF analyzed the data. EZ, PF and RB interpreted the data. AA, EZ, RB and PF prepared the draft of the paper and critically revised it for important intellectual content. AA, EZ, RB, and PF agreed to be accountable for all aspects of the work. They ensure that questions related to the accuracy or integrity of any part of the work were appropriately investigated and resolved. All authors gave final approval of the version to be published.

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