



# Evaluating Satisfaction Among Recipients of Family Physician Services in Birjand and Khusf, Iran

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Received 2017 December 12; Accepted 2018 January 25.

## Abstract

**Background:** Health and security are among primary rights of each society, whose securement falls upon the government. The family physician is responsible for providing comprehensive and high-quality services according to the necessities of the population in order to maintain and promote physical and mental health. The purpose of the present study was to evaluate the satisfaction of the recipients of the family physician services provided throughout the cities of Birjand and Khusf, Iran.

**Methods:** For the purpose of this cross-sectional study, 218 service recipients were randomly selected from 12 health centers of Birjand and Khusf using an appropriate allocation method, and standard questionnaires were distributed amongst the individuals. The data were analyzed using multiple analysis of variance (multiple ANOVA), t-tests (or Mann-Whitney tests), and ANOVA (Kruskal-Wallis) with an error coefficient of 5% through the application of the SPSS (v. 18) software.

**Results:** Males made up 38.2% of the study samples, and 77.2% were residents of rural regions with health centers. The overall content score with the family physician services provided was  $3.58 \pm 0.66$  (out of 5). The results of multiple ANOVA indicated that gender, age, and residency in rural areas with health centers had significant effects on the overall satisfaction of the service recipients.

**Conclusions:** The recipients of the family physician services were, in general, satisfied with the offered services of the program. However, the program requires further quality improvements with regards to the facilities and the effectiveness of services.

**Keywords:** Family Physician, Satisfaction, Service Recipients

## 1. Background

Health and security are among the primary rights of a society, whose securement falls on the government. In accordance with the fourth national economical-social-cultural development plan, all the necessary arrangements for the family physician-based health insurance and referral system must be provided by the end of this program (1).

Nowadays, family physicians in various countries, such as North America, Western Europe, and Canada, are responsible for the provision of health services with the help of health teams. The national health systems in Britain, Canada, South Korea, and Chili are based on the referral system level and family physicians (2, 3). Family physicians provide all sorts of services including preventive, educational, promotional, and managerial services related to health at medical centers (4). The family physician pro-

gram, based on family physicians and referral systems, attempts to create and improve national referral systems, increase responsiveness in health markets, increase access to health services, reduce unwanted and unnecessary costs, and increase service coverage. The family physician is responsible for providing health services for the entire society in accordance with defined limitations and without any prejudice towards age, gender, financial-social traits, and disease risk (5). The family physician program in Iran was first piloted in the Fars and Mazandaran provinces. However, the program was not fully carried out due to financial crisis in the country (6). Also, the program's coverage in Shiraz increased from 23% to 84% during a 7-month period (7). Overall, the satisfaction levels with the program in urban and rural regions of Shiraz were 54.5% and 69.2%, respectively (8). Moreover, 76.41% of the study subjects from the Markazi province were content with the family physician program (9). The family physician program

resulted in decreased mortality of infants and children throughout Iran (10).

Today, most organizations seek to improve customer satisfaction and, consequently, their own durability, through the evaluation of their services and by selecting customer satisfaction as a key index (11). The ultimate objective of quality evaluation is to promote the outcome and effectiveness of various programs, or in other words, the promotion of service quality and health care (12). The simplest way one can evaluate the family physician's services is by evaluating the satisfaction of the service recipients (13). In today's world, the issue of customers has found a significantly important stand in case of health-care and medical services. The reason for this is that a customer's inclination or unwillingness towards a service can significantly influence the permanence of the service provider organization (14). The evaluation of patient satisfaction can be looked at as a tool for assessing the quality of healthcare services (15). A survey by Doyle consisting of 55 reviews indicated patient satisfaction as a significant index in evaluating the quality of service (16).

Therefore, it was concluded that customer satisfaction, which in the case of family physician services involves the satisfaction of service recipients regarding various services provided by the family physician team, is a significant factor contributing to the increased performance of the team. Evaluating the amount of satisfaction is, therefore, a major index in the development and growth of healthcare services. Studies have indicated the effectiveness of patient satisfaction in the amelioration of health services (17-20). The study results have shown that patient satisfaction in return causes patients to refer other individuals, including friends and other patients in need of service to the same service provider hospitals or health centers (21). Out of 378 studies conducted on the relationship between patient experience and outcome of treatment, 312 studies confirmed a positive relationship between the 2 parameters (16). Also, a study on the population of Jiroft indicated that 66% of patients refused to return to the same doctor due to a lack of knowledge on the part of the family physician (22).

Despite the importance of quality of service and customer satisfaction, and the significance of their evaluation in improving health services, and considering that the family physician project in Iran was launched in 2005, studies evaluating the quality of service and customer satisfaction among the population are still limited. The lack of such studies may result in potential problems in the implementation of this program. Thus, the present study sought to investigate customer satisfaction alongside the assessment and identification of current issues in the area of health.

## 2. Methods

For the present cross-sectional analytical descriptive study, 218 service recipients of the family physician programs in Khusf and Birjand, during year 2015, were selected as the study population. The precise number of subjects needed (218) was attained by considering a standard deviation of 0.97 for the satisfaction score, according to a study conducted by Ahmadi Kashkoli et al. (23) wherein an error rate of 5% and precision of 0.13 resulted in a study population of 218 individuals. Considering that the program took place at health centers in the rural regions of cities with populations of more than 20,000 and all the health centers of both the urban and rural regions of cities with populations of less than 20,000, the study subjects were selected from 12 rural health centers in Birjand and Khusf. The selection procedure was as follows, questioners initially referred to health centers on the 5th of November from 8 AM to 1 PM, and questionnaires were filled according to that day's referrals per quota of each center's population coverage using simple non-statistical sampling (Table 1).

**Table 1.** Samples Selected from the Family Physician Health Centers of Birjand and Khusf

City	Health Center	Population Covered	Number of Selected Samples
Birjand	Amirabad	17000	63
	Shakhan	5000	18
	Gazar	4000	15
	khong	4000	15
	Marak	3000	11
	Khorashad	2200	8
	Ghyuk	2500	9
Khusf	Urban center	10000	37
	Majan	4500	17
	Taghab	3500	13
	Khour	1700	6
	Gol	1800	6
<b>Total</b>		59200	218

The applied questionnaire was designed by Alibabaei et al. (24) and had 51 questions with 8 categories, including quality (4 questions), performance (6 questions), effectiveness (7 questions), accessibility (13 questions), timeliness (5 questions), applicability (4 questions), stability (5 questions), and facilities (7 questions). The questions were scored according to the Likert scale from strongly disagree to strongly agree. The overall score for each category was

computed by averaging the scores of each category. Consequently, the overall score for each category and the total score of the questionnaire was from 1 to 5. The questionnaire has been justified by the opinion of 12 experts. Cronbach's alpha coefficient for the Ali Babayi study was computed as 0.938, indicative of its reliability (24). The Cronbach's alpha coefficient for the overall score, quality, performance, effectiveness, accessibility, timeliness, applicability, stability, and facilities for the present study were obtained as 0.91, 0.87, 0.88, 0.79, 0.90, 0.88, 0.81, 0.78, and 0.83, respectively.

The present study is the conclusion of a research project conducted under the supervision of the Birjand University of Medical Sciences (code 4589). The ethical considerations were approved by the Birjand University of Medical Sciences (code IR.bums.REC.1394.411).

The information analysis was performed using descriptive methods, including frequency distribution, central indices, scattering, and inferential methods, such as multiple analysis of variance (ANOVA), independent t-tests, and ANOVA for normal variables, including performance, respect, timeliness, and facilities. The Mann-Whitney and Kruskal-Wallis tests were performed for variables of quality, accessibility, effectiveness, and stability. The data were analyzed with a 5% error rate using the SPSS (version 18) software.

### 3. Results

For this study, 218 individuals were selected and studied. Of the study samples, 38.2% were male, and 61.5% had a below-diploma education. Of the study samples, 77.5% were married, 75.7% had rural insurance, 53.8% were middle-aged, and 77.2% were residents of rural regions with health centers. The overall satisfaction score of the study samples for the family physician services was obtained as 3.58, with quality and facilities contributing to the highest and lowest scores, respectively (Table 2).

The subscale satisfaction scores (scores for each category of the questionnaire) were evaluated based on demographic variables. The results indicated that the mean satisfaction score and the score of their corresponding subscales were significantly higher in females compared to males ( $P < 0.05$ ). The level of education also had significant effects on the satisfaction with stability and timeliness of services, and the Tukey test results indicating a high score for satisfaction with the timeliness of services among individuals with college degrees compared to those with diplomas. With regards to stability, the results of the Mann-Whitney test indicated that individuals with diplomas had higher scores compared to illiterate individuals and those with degrees lower than a diploma, and the individuals

**Table 2.** Frequency Distribution for Demographic Characteristics and Satisfaction with the Family Physician Program Amongst Service Recipient

Variable	No. (%)
<b>Gender</b>	
Male	83 (38.2)
Female	134 (61.8)
<b>Education</b>	
Illiterate	31 (14.4)
Below-diploma	134 (61.5)
Diploma	43 (19.7)
College degree	9 (4.3)
<b>Marital status</b>	
Married	169 (77.5)
Other	49 (22.5)
<b>Insurance</b>	
Rural	165 (75.7)
Other	53 (24.3)
<b>Type of rural region</b>	
With health home	168 (77.2)
Without health home	50 (22.8)
<b>Age</b>	
Young	80 (36.7)
Middle-aged	117 (53.8)
Senior	21 (9.5)
<b>Service recipient satisfaction*</b>	
Quality	3.92 ± 0.69
Accessibility	3.74 ± 0.69
Performance	3.62 ± 0.66
Effectiveness	3.38 ± 0.81
Respect	3.68 ± 0.75
Timeliness	3.57 ± 0.83
Stability	3.63 ± 0.70
Facilities	3.19 ± 1
Total	3.58 ± 0.66

with college degrees scored higher than those with diplomas ( $P < 0.05$ ). Moreover, the satisfaction scores among the residents of rural regions with health centers were significantly higher. The age category also had significant effects on all the subscales of the questionnaire, except accessibility, timeliness, and facilities. The Tukey tests showed that seniors scored higher on the category of performance in comparison to middle-aged individuals. The seniors also scored higher with regards to the respect subscale ( $P < 0.05$ ). The results of the Mann-Whitney test for the 3

subscales of quality, effectiveness, and stability indicated a higher score amongst seniors compared to young and middle-aged individuals ( $P < 0.05$ ) (Table 3).

Multiple ANOVA was applied for identifying effective variables on recipient satisfaction. The results indicated that age, gender, and residency in rural regions with health centers had significant effects on overall satisfaction with the family physician services ( $P < 0.01$ ), with impact values of 5%, 10%, and 15%, respectively. Overall, these variables contributed to 25.2% of the changes in the satisfaction scores (Table 4).

#### 4. Discussion

The family physician program is one of the most important and effective methods for increasing accessibility to health services for the society, which not only provides the necessary health services but also prevents and reduces the abuse of people's needs for the services offered by various providers (25). Evidence shows that the patients satisfied with their treatment are more likely to refer to the same service provider (26, 27). Thus, the patient satisfaction with the family physician services positively affects their behavior and causes the patients to refer to the same service providers on an ongoing basis (28).

Various research studies have investigated the issue of patient satisfaction with the family physician services. The present study investigated satisfaction with the family physician program in 8 categories, including quality, accessibility, effectiveness, performance, respect toward recipients, timeliness, stability, and facilities. It investigated the effects of parameters, such as age, gender, and education, on the study factors.

The mean satisfaction score of the service recipients in the present study was obtained as  $3.58 \pm 0.66$  (range: 1 to 5). The mean satisfaction score in Ahmadi Kashkoli et al.'s study on 500 patients from 3 hospitals of Tehran using a standard 32-query questionnaire was obtained as  $3.54 \pm 0.97$  (range: 1 to 5). Although the study design and applied tools for these 2 studies are different, the results of the latter study are consistent with results of the present study (23).

The mean score for accessibility was higher than average, as 77% of the patients were satisfied with accessibility. Therefore, accessibility to the family physician services is relatively high. Although the cultural accessibility was high for the present study, it seems to lack potency from the geographical perspective as 22.8% of the individuals resided in regions without health centers.

The mean score for respect towards the service recipients was also higher than average with 77% of the patients satisfied with the services provided. Therefore, respect for

patient rights was also high in the present study, which was consistent with the results of a study conducted in the Ajab Shir region (24).

In the present study, 74% of the subjects were satisfied with the stability of services. This index is one of the most significant factors for evaluating patient satisfaction with the services, whose substantiation requires coordination between the service providers and various health sectors in order to provide continuous services. In a study in America, the stability of services was reported at a high-level of importance, where the mean score for satisfaction with stability was higher than average. This result was consistent with those obtained by another study (29) for the American population, Ali Babayi for the population of Ajab Shir (24), and Shabani for the population of Ardabil (30).

The mean score of satisfaction with facilities was not significantly different from the average value, and only half of the recipients were satisfied with the service facilities. Thus, it can be concluded that the family physician program has been performed on a mediocre level with regards to facilities for services.

The mean score for satisfaction with the effectiveness of services was also not significantly different from the average score, concluding in a mediocre performance with regards to the service effectiveness on the part of the family physician program.

Performance is another important factor in evaluating different health programs. The results of a study on the Mexican population indicated that the occupational satisfaction of family physicians and the quality and performance of services are closely related (31). A study from England showed that satisfaction with accessibility, performance, effectiveness, stability, time spent during consultation, timeliness, and patient-doctor relations were related (32). Considering that the mean score for satisfaction with performance in the present study was higher than average, it can be concluded that the performance was at a relatively high level (24).

The results of the present study showed that gender, age, and residency in rural regions with health centers had significant effects on patient satisfaction.

The mean satisfaction score among females was significantly higher than males, which is consistent with the results of Alibabaei et al. (24) for the population of Ajab Shir, and Maharlouei et al. (33) for the population of Shiraz. However, this result is not consistent with those obtained by Khosravi et al. in Bardesir (34), Ebrahimipour et al. in Bardeskan (35), Ghorbani in Sabzevar (36), and Khadivi et al. in Isfahan (37).

In this study, the seniors scored higher with regards to overall satisfaction. This finding is consistent with the results of Ghorbani for the population of Shiraz (38). Bagheri

**Table 3.** Comparison of the Mean Scores for Each Category of the Family Physician Services Questionnaire According to Demographic Variables in Birjand and Khusf During Year 2015<sup>a</sup>

Variable	Quality <sup>b</sup>	Accessibility <sup>b</sup>	Performance <sup>c</sup>	Effectiveness <sup>b</sup>	Respect <sup>c</sup>	Timeliness <sup>c</sup>	Stability <sup>b</sup>	Facilities <sup>c</sup>
<b>Gender</b>								
Male	3.75 (3.25 - 4.25)	3.5 (3 - 4)	3.44 ± 0.58	3 (2.57 - 3.57)	3.37 ± 0.63	3.33 ± 0.78	3.33 (3 - 3.83)	2.89 ± 0.92
Female	4 (3.5 - 4.5)	4 (3.5 - 4.25)	3.74 ± 0.68	3.57 (3 - 4)	3.88 ± 0.75	3.72 ± 0.83	3.83 (3.3 - 4.17)	3.38 ± 1.01
Significance	0.04	0.008	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001
<b>Education</b>								
Illiterate	4 (3.5 - 4.75)	4 (3.25 - 4.5)	3.82 ± 0.59	3.5 (3.14 - 4.14)	3.96 ± 0.72	3.82 ± 0.72	3.75 (3.5 - 4)	3.34 ± 0.94
Below-diploma	4 (3.5 - 4.25)	3.75 (3 - 4)	3.57 ± 0.67	3.14 (2.71 - 4)	3.65 ± 0.74	3.53 ± 0.83	3.5 (3 - 4)	3.25 ± 1.03
Diploma	4 (3.25 - 4.25)	3.75 (3.25 - 4)	3.58 ± 0.63	3.57 (3 - 3.86)	3.58 ± 0.73	3.37 ± 0.87	3.5 (3 - 3.83)	2.91 ± 0.89
College-degree	4 (3.75 - 4)	3.75 (3.75 - 4)	3.76 ± 0.71	3.14 (3 - 3.86)	3.92 ± 0.65	4.13 ± 0.68	4 (3.5 - 4.33)	3.22 ± 0.95
Significance	0.69	0.45	0.24	0.21	0.11	0.02	0.02	0.22
<b>Marital status</b>								
Married	4 (3.5 - 4.5)	3.75 (3.25 - 4.25)	3.62 ± 0.65	3.29 (2.71 - 3.86)	3.69 ± 0.74	3.56 ± 0.84	3.67 (3.17 - 4)	3.19 ± 0.97
Other	4 (3.75 - 4.25)	3.5 (3.25 - 4)	3.61 ± 0.68	3.29 (3 - 4)	3.65 ± 0.75	3.58 ± 0.80	3.5 (3 - 4)	3.19 ± 1.12
Significance	0.98	0.34	0.92	0.31	0.70	0.88	0.98	0.98
<b>Insurance</b>								
Rural	4 (3.5 - 4.5)	3.75 (3.25 - 4)	3.62 ± 0.65	3.29 (2.71 - 4)	3.68 ± 0.73	3.57 ± 0.80	3.5 (3 - 4)	3.19 ± 1.04
Other	4 (3.75 - 4.25)	3.75 (3.25 - 4.25)	3.63 ± 0.69	3.29 (3 - 3.86)	3.69 ± 0.79	3.55 ± 0.93	3.8 (3 - 4)	3.21 ± 0.87
Significance	0.90	0.66	0.95	0.83	0.94	0.86	0.85	0.87
<b>Type of rural region</b>								
With health home	4 (3.5 - 4.5)	4 (3.5 - 4.25)	3.75 ± 0.63	3.57 (3 - 4)	3.82 ± 0.72	3.70 ± 0.78	3.83 (3.33 - 4.08)	3.37 ± 1.01
Without health home	3.75 (3.25 - 4)	3 (2.75 - 3.75)	3.21 ± 0.61	2.71 (2.29 - 3.29)	3.18 ± 0.63	3.05 ± 0.85	3.17 (2.83 - 3.5)	2.61 ± 0.82
Significance	0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
<b>Age category<sup>d</sup></b>								
Young	4 (3.5 - 4.25)	3.75 (3.5 - 4)	3.63 ± 0.57	3.75 (3.5 - 4)	3.66 ± 0.72	3.57 ± 0.75	4 (3.17 - 4)	3.13 ± 1.10
Middle-aged	4 (3.5 - 4.25)	3.75 (3 - 4)	3.56 ± 0.68	3.75 (3 - 4)	3.60 ± 0.73	3.49 ± 0.87	3.86 (3 - 4)	3.14 ± 0.92
Senior	4.75 (4 - 5)	3.88 (3.5 - 5)	3.94 ± 0.65	3.88 (3.5 - 5)	4.23 ± 0.63	3.96 ± 0.77	4 (3.67 - 4.25)	3.62 ± 0.96
Significance	0.002	0.29	0.05	0.04	0.002	0.06	0.007	0.13

<sup>a</sup>Values are expressed as median (Q1 - Q3) or mean ± SD.

<sup>b</sup>Obtained using non-parametric Mann-Whitney and Kruskal-Wallis tests due to non-normal distribution of dependent variable.

<sup>c</sup>Obtained by T-test and ANOVA.

<sup>d</sup>Young category (under 30), middle aged (30 - 59 years old), senior (above 60 years old).

**Table 4.** Predictors of Satisfaction with the Family Physician Program Among Service Recipients in Khusf and Birjand During Year 2015

Variable	SS	MS	Fisher Statistics	Significance	Effect Size
Age	3.23	1.62	4.81	0.01	0.05
Gender	7.17	7.17	21.30	< 0.001	0.10
Rural region	11.37	11.37	33.81	< 0.001	0.15

et al. (39) showed in their study of the population of Mazandaran that an increase in age resulted in an increase in satisfaction. Honarvar (40) showed in a study on the population of Shiraz that individuals older than 51 were more satisfied with the family physician program. Wetmore et al. (41) and Baettig et al. (42) showed that older individuals were more satisfied with health services. The

present study showed a direct and significant relationship between satisfaction with respect to patients on the part of the family physician and the patient age. Lower satisfaction among the younger individuals may be due to their higher level of education, which results in higher awareness and, consequently, higher expectations. On the other hand, older individuals expect less, are more flexible, and

communicate better with family physicians compared to younger individuals (43).

The overall mean satisfaction score was higher than average, placing the family physician services at a relatively high level.

According to the service recipients, the mean satisfaction score for the service facilities in regions with health centers was significantly higher. It is evident that the accessibility and vicinity to regions with health centers increase patient satisfaction.

The limitations of the present study include lack of time spent on filling the questionnaires on the part of the patients, which resulted in unreliable or rather unrealistic answers. On the other hand, the patient satisfaction with services was significantly related to the patient's awareness of his/her own rights. Owing to this fact, individuals lacked the ability to judge realistically, which is why many studies on patient satisfaction reporting a high level of satisfaction included many cases where patients' needs were not actually satisfied. Also, different studies used different tools with various variables for assessing patient satisfaction. Thus, a direct comparison of results was not possible.

#### 4.1. Conclusion

According to the study results, the service recipients were generally satisfied with the family physician program. However, the program is lacking in cases of service facilities and service effectiveness. Therefore, the program requires improvement. It is recommended that more in-depth research be performed on various factors affecting patient satisfaction with the family physician services using qualitative methods and in-depth interviews with physicians, health boards, and referrals. It is also recommended that various agents and health authorities make further efforts to improve the facilities and effectiveness of the services provided by the family physician program in order to increase patient satisfaction.

#### Acknowledgments

This study was part of a research project approved by the Birjand University of Medical Sciences. The authors extend their thanks to the research and technology assistant and the health assistant.

#### References

- Alipour A, Habibian N, Tabatabaee SHR. Evaluation the impact of family physician care program on family planning in Sari from 2003 to 2007. *Iran J Epidemiol*. 2009;5(1):47-55. Persian.
- Jolaei H, Alizadeh M, Falah Zadeh M, Baseri A, Sayyadi M. Assessment of clinical skills province of Family Physicians clinical test based on the observed (OSCE) Journal of Medical Education Development Center. *Strides Dev Med Educ*. 2010;7(2):92-8.
- Sadeghi M, Dehghani M, Aghaee MA. Family physicians' attitude and interest toward participation in urban family physician program and related factors. *J Family Med Prim Care*. 2016;5(4):840-6. doi: [10.4103/2249-4863.201171](https://doi.org/10.4103/2249-4863.201171). [PubMed: [28349002](https://pubmed.ncbi.nlm.nih.gov/28349002/)].
- Ebrahimipour H, Hosseini SE, Mahmoudian P, Vafaei Najar A, Zomorodi Niat H, Emamian H. Evaluating the performance of family physician in rural health centers, Bardaskan, 2013. *Beyhagh*. 2015;20(2):26-34. Persian.
- Goya M. *Iranian Annual Cancer Registration Report 2005/2006*. Ministry of Health and Medical Education, Health Deputy. Center for Disease Control and Prevention; 2007.
- Homaie Rad E, Delavari S, Aeenparast A, Afkar A, Farzadi F, Maftoon F. Does Economic Instability Affect Healthcare Provision? Evidence Based on the Urban Family Physician Program in Iran. *Korean J Fam Med*. 2017;38(5):296-302. doi: [10.4082/kjfm.2017.38.5.296](https://doi.org/10.4082/kjfm.2017.38.5.296). [PubMed: [29026491](https://pubmed.ncbi.nlm.nih.gov/29026491/)].
- Heydari MR, Kalateh Sadati A, Bagheri Lankarani K, Imanieh MH, Baghi H, Lolia MJ. The Evaluation of Urban Community Health Centers in Relation to Family Physician and Primary Health Care in Southern Iran. *Iran J Public Health*. 2017;46(12):1726-36. [PubMed: [29259949](https://pubmed.ncbi.nlm.nih.gov/29259949/)].
- Fararouie M, Nejat M, Tabatabaie HR, Kazerooni PA, Akbarpoor M. Satisfaction levels with family physician services: a pilot national health programme in the Islamic Republic of Iran. *East Mediterr Health J*. 2017;23(4):267-73. doi: [10.26719/2017.23.4.267](https://doi.org/10.26719/2017.23.4.267). [PubMed: [28634976](https://pubmed.ncbi.nlm.nih.gov/28634976/)].
- Taheri M, Mohammadi M, Amani A, Zahiri R, Mohammadbeigi A. Family physician program in Iran, patients satisfaction in a multicenter study. *Pak J Biol Sci*. 2014;17(2):227-33. doi: [10.3923/pjbs.2014.227.233](https://doi.org/10.3923/pjbs.2014.227.233). [PubMed: [24783806](https://pubmed.ncbi.nlm.nih.gov/24783806/)].
- Naderimaghani S, Jamshidi H, Khajavi A, Pishgar F, Ardami A, Larjani B, et al. Impact of rural family physician program on child mortality rates in Iran: a time-series study. *Popul Health Metr*. 2017;15(1):21. doi: [10.1186/s12963-017-0138-0](https://doi.org/10.1186/s12963-017-0138-0). [PubMed: [28576122](https://pubmed.ncbi.nlm.nih.gov/28576122/)].
- Kaplan RS, Norton DP. *The strategy-focused organization: How balanced scorecard companies thrive in the new business environment*. Harvard Business Press; 2001.
- Sherman SG, Sherman VC. *Total customer satisfaction: a comprehensive approach for health care providers*. Jossey-Bass; 1999.
- Kashfi M, Nejat G, Yazdankhah M, Hasanzadeh J, Rakhshani T, Manoochehri Khorammakani M. Investigating performance of rural family physicians in Fars province working as part of family physician program. *J Fasa Univ Med Sci*. 2016;6(2):202-9. Persian.
- Bell R, Knuich MJ. How to use patient satisfaction data to improve healthcare quality. *J Healthc Qual*. 2001;23(4):45. doi: [10.1097/01445442-200107000-00016](https://doi.org/10.1097/01445442-200107000-00016).
- Chen AL, Bain EB, Horan MP, Hawkins RJ. Determinants of patient satisfaction with outcome after shoulder arthroplasty. *J Shoulder Elbow Surg*. 2007;16(1):25-30. doi: [10.1016/j.jse.2006.04.013](https://doi.org/10.1016/j.jse.2006.04.013). [PubMed: [17097315](https://pubmed.ncbi.nlm.nih.gov/17097315/)].
- Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*. 2013;3(1). doi: [10.1136/bmjopen-2012-001570](https://doi.org/10.1136/bmjopen-2012-001570). [PubMed: [23293244](https://pubmed.ncbi.nlm.nih.gov/23293244/)].
- Boulding W, Glickman SW, Manary MP, Schulman KA, Staelin R. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *Am J Manag Care*. 2011;17(1):41-8. [PubMed: [21348567](https://pubmed.ncbi.nlm.nih.gov/21348567/)].
- Jha AK, Orav EJ, Zheng J, Epstein AM. Patients' perception of hospital care in the United States. *N Engl J Med*. 2008;359(18):1921-31. doi: [10.1056/NEJMsa0804116](https://doi.org/10.1056/NEJMsa0804116). [PubMed: [18971493](https://pubmed.ncbi.nlm.nih.gov/18971493/)].
- Glickman SW, Boulding W, Manary M, Staelin R, Roe MT, Wolosin RJ, et al. Patient satisfaction and its relationship with clinical quality and inpatient mortality in acute myocardial infarction. *Circ Cardiovasc Qual Outcomes*. 2010;3(2):188-95. doi: [10.1161/CIRCOUTCOMES.109.900597](https://doi.org/10.1161/CIRCOUTCOMES.109.900597). [PubMed: [20179265](https://pubmed.ncbi.nlm.nih.gov/20179265/)].

20. Edgman-Levitan S, Cleary PD. What information do consumers want and need? *Health Aff (Millwood)*. 1996;**15**(4):42-56. doi: [10.1377/hlthaff.15.4.42](https://doi.org/10.1377/hlthaff.15.4.42). [PubMed: [8991253](https://pubmed.ncbi.nlm.nih.gov/8991253/)].
21. Bentur N, Gross R. The reform of the Israeli health care system: a comparison between older and younger consumers, one year and three years after its implementation. *J Am Geriatr Soc*. 2001;**49**(1):56-64. [PubMed: [11207843](https://pubmed.ncbi.nlm.nih.gov/11207843/)].
22. Dehnavieh R, Movahed E, Rahimi H, Zareipour MA, Jadgeal KM, Alizadeh S, et al. Evaluation of the referral system in Iran's rural family physician program; a study of Jiroft University of Medical Sciences. *Electron Physician*. 2017;**9**(4):4225-30. doi: [10.19082/4225](https://doi.org/10.19082/4225). [PubMed: [28607659](https://pubmed.ncbi.nlm.nih.gov/28607659/)].
23. Ahmadi Kashkoli S, Zarei E, Daneshkohan A, Khodakarim S. Hospital responsiveness and its effect on overall patient satisfaction. *Int J Health Care Qual Assur*. 2017;**30**(8):728-36. doi: [10.1108/IJHCQA-07-2016-0098](https://doi.org/10.1108/IJHCQA-07-2016-0098). [PubMed: [28958198](https://pubmed.ncbi.nlm.nih.gov/28958198/)].
24. Alibabaei R, Sadeghi A, Vahidi RG, Akaberi A. Determination of quality of services provided by family physician team from recipients' perspective in Ajabshir city. *J Healthc Qual*. 2014;**5**(2):170-81. Persian.
25. Ministry of Health and Medical Education, Department Health tCNM. *what you should know about your family doctor*. 2012.
26. Boudreaux ED, O'Hea EL. Patient satisfaction in the Emergency Department: a review of the literature and implications for practice. *J Emerg Med*. 2004;**26**(1):13-26. doi: [10.1016/j.jemermed.2003.04.003](https://doi.org/10.1016/j.jemermed.2003.04.003). [PubMed: [14751474](https://pubmed.ncbi.nlm.nih.gov/14751474/)].
27. Manary MP, Boulding W, Staelin R, Glickman SW. The patient experience and health outcomes. *N Engl J Med*. 2013;**368**(3):201-3. doi: [10.1056/NEJMp1211775](https://doi.org/10.1056/NEJMp1211775). [PubMed: [23268647](https://pubmed.ncbi.nlm.nih.gov/23268647/)].
28. Emadzadeh A, Yavari M, Ebrahimzadeh S, Ahmadian N. The effects of dental graduate students' communication skills on patients' satisfaction in Mashhad University of Medical Sciences in 1383. *J Mashhad Dent Sch*. 2004;**28**(1,2):69-76. Persian.
29. Garcia-Pena C, Reyes-Frausto S, Reyes-Lagunes I, Munoz-Hernandez O. Family physician job satisfaction in different medical care organization models. *Fam Pract*. 2000;**17**(4):309-13. doi: [10.1093/fampra/17.4.309](https://doi.org/10.1093/fampra/17.4.309). [PubMed: [10934178](https://pubmed.ncbi.nlm.nih.gov/10934178/)].
30. Shabani MAS. *A study on dimensions of quality, customer satisfaction and the key processes associated with the level of home health and medical databases in Ardebil province*. Research report, Ardabil University of Medical Sciences, Research and Information Management; 2003.
31. Zulfikar F, Ulusoy MF. Are patients aware of their rights? A Turkish study. *Nurs Ethics*. 2001;**8**(6):487-98. doi: [10.1177/096973300100800603](https://doi.org/10.1177/096973300100800603). [PubMed: [16004104](https://pubmed.ncbi.nlm.nih.gov/16004104/)].
32. CONCEIÇÃO A, Gonçalves A, Craveiro I, Blaise P, Van Lerberghe W, Ferrinho P. Managing the performance of family physicians in the Portuguese national health system. *Hum Resour Health Deve J*. 2000;**4**(3):184-93.
33. Maharlouei N, Akbari M, Akbari M, Lankarani K. Socioeconomic Status and Satisfaction with Public Healthcare System in Iran. *Int J Community Based Nurs Midwifery*. 2017;**5**(1):22-9. [PubMed: [28097175](https://pubmed.ncbi.nlm.nih.gov/28097175/)].
34. Khosravi S, Asadi L, Amiresmaeili MR, Jafari Sirizi M, Mirzaei S, Khosravi S. Study of satisfaction rate from family physician performance in rural areas of Bardsir in 2013: A short report. *J Rafsanjan Univ Med Sci*. 2014;**13**(5):489-94. Persian.
35. Ebrahimipour H, Vejdani M, Vafae-Najar A, Nejat-zadegan Z, Amini A, Vejdani M. Patients satisfaction from family physicians in health centers affiliated with Sabzevar University of Medical Sciences with EUROPEP-2012. *Toloo Behdasht*. 2015;**13**(6):25-34. Persian.
36. Ghorbani A, Shegerf Nakhae M, Dovlat Abadi A, Tabarraie Y, Alemi H,();. Study of satisfaction rate of family medicine plan in insured population of Sabzevar University Medical of Sciences. *Q J Sabzevar Univ Med Sci*. 2013;**19**(4):364-70. Persian.
37. Khadivi R, Golshiri P, Farasat E, Khaledi G. Caregiver satisfaction in rural areas in Isfahan district, Iran, after implementation of the family physician project. *J Isfahan Med Sch*. 2013;**31**(244). Persian.
38. Ghorbani A, Raeissi P, Saffari E, Reissi N. Patient Satisfaction With the Family Physician Program in Sabzevar, Iran. *Glob J Health Sci*. 2015;**8**(2):219-29. doi: [10.5539/gjhs.v8n2p219](https://doi.org/10.5539/gjhs.v8n2p219). [PubMed: [26383202](https://pubmed.ncbi.nlm.nih.gov/26383202/)].
39. Bagheri R, Mohammadikia SA, Kazemian M, Kazemi B, Rezapour M. Satisfaction rate from the communication skills of family physicians in rural health centers at Mazandaran University of Medical Sciences. *Biannual J of Med Edu Educ Dev Center Babol Univ of Med Sci*. 2014;**2**(2):30-6. Persian.
40. Honarvar B, Lankarani KB, Ghahramani S, Akbari M, Tabrizi R, Bagheri Z, et al. Satisfaction and Dissatisfaction Toward Urban Family Physician Program: A Population Based Study in Shiraz, Southern Iran. *Int J Prev Med*. 2016;**7**:3. doi: [10.4103/2008-7802.173793](https://doi.org/10.4103/2008-7802.173793). [PubMed: [26941904](https://pubmed.ncbi.nlm.nih.gov/26941904/)].
41. Wetmore S, Boisvert L, Graham E, Hall S, Hartley T, Wright L, et al. Patient satisfaction with access and continuity of care in a multidisciplinary academic family medicine clinic. *Can Fam Physician*. 2014;**60**(4):e230-6. [PubMed: [24733343](https://pubmed.ncbi.nlm.nih.gov/24733343/)].
42. Baettig SJ, Wieser K, Gerber C. Determinants of patient satisfaction following reconstructive shoulder surgery. *BMC Musculoskelet Disord*. 2017;**18**(1):458. doi: [10.1186/s12891-017-1812-x](https://doi.org/10.1186/s12891-017-1812-x). [PubMed: [29141613](https://pubmed.ncbi.nlm.nih.gov/29141613/)].
43. Dinkel A, Schneider A, Schmutzer G, Braehler E, Henningsen P, Hauser W. [The Quality of the Family Physician-Patient Relationship. Patient-Related Predictors in a Sample Representative for the German Population]. *Psychother Psychosom Med Psychol*. 2016;**66**(3-4):120-7. doi: [10.1055/s-0042-100811](https://doi.org/10.1055/s-0042-100811). [PubMed: [27035441](https://pubmed.ncbi.nlm.nih.gov/27035441/)].