



## Satisfaction Rate Regarding Health-care Services and Its Determinant Factors in South-West of Iran: A Population-based Study

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### ABSTRACT

**Background:** The aim of this study was to evaluate clients' satisfaction regarding health-care services and its determinant factors in South-West of Iran.

**Methods:** Totally, 3400 households were randomly selected for this cross-sectional study, carried out in Shiraz, Iran, from December 2013 to March 2014. Data were collected using a checklist that includes insurance status of the household, enrollment in family physician program, and client's satisfaction level with received health services. The level of statistical significance was set at  $P < 0.05$ .

**Results:** The mean age of the interviewees was 51.71 ( $\pm 14.01$ ) years, including 2427 (71.4%) females. 9.4% were insured while 72.3% had registered in family physician program. With respect to the family physician and governmental clinics, most subjects were "satisfied" or "very satisfied" with distance, time for admission, time spent at the clinic, privacy, and cost. As for private clinics, specialist clinics, and private hospitals, the studied subjects were more "dissatisfied" with cost but were more satisfied with other items. Living in higher socioeconomic regions ( $P = 0.001$ ), dissatisfaction with family physician ( $P < 0.001$ , odds ratio [OR] = 2.3), scarcity of prescribed medication ( $P = 0.02$ , OR = 1.6), medication cost ( $P < 0.001$ , OR = 1.9), and existing chronic diseases in the household ( $P = 0.03$ , OR = 1.4) had determinant role in dissatisfaction with health system.

**Conclusions:** Results of the present study demonstrated a high level of satisfaction with the health-care system and family physician in Shiraz, Iran. Moreover, dissatisfaction with family physicians, socioeconomic status, scarcity and cost of drugs, and existing chronic disease(s) were important predictors for dissatisfaction with the health-care system.

**Keywords:** Delivery of health care, health services, Iran, patients' satisfaction, socioeconomic factors

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## INTRODUCTION

The ultimate aim of all health systems is clients' well-being, which is related to the efficiency of the health-care system.<sup>[1]</sup> In other words, the interaction between the health system and population is undeniable. Since people are considered as customers of a health system, their level of satisfaction could be considered as an indicator for both the quality of care received<sup>[2,3]</sup> and efficiency of the health system.<sup>[4]</sup>

Indeed, patients' satisfaction is a subjective concept influenced by different aspects of health services.<sup>[1]</sup> Satisfaction could be considered as a strength since it reflects the psychological evaluation of the patients regarding received care. On the contrary, it could be simultaneously affected by different factors such as perceived expertise and behavior of care providers, the level of primary and secondary care, traveling distance, and time spent to make an appointment, patient's privacy when receiving health service, and cost of care.<sup>[1,4,5]</sup> All these factors contribute in improving the quality of health system and are vital for policymakers, stakeholders, and health-care providers.<sup>[3]</sup>

Many studies have been carried out to define the determinant factors of achieving the maximum level of patients' satisfaction. Nevertheless, the contributing factors are diverse and they are based on the study population, region, and health system. Results of the reviewed studies are grouped into 13 factors which could be classified under three categories: the medical care setting, the physicians' competence, and the relationships between physicians and their patients. Some factors have been proved to have a more straightforward relationship to satisfaction; including, medical care accessibility, having infrastructure for clinics, duration of treatment, perceived competency of physicians, and commitment to bases of medical ethics in treating the patients.<sup>[4-8]</sup> This specifically underlines the need of carrying out comparable surveys in each country and geographic regions. This study was designed based on the fact that there are few studies on clients' satisfaction on the health-care system in Iran, and there are no published documents regarding newly implemented family physician program in the Fars Province. This survey was carried out to determine the clients' satisfaction regarding health-care services and its determinant factors in South-West of Iran.

## METHODS

### Study design and population

This cross-sectional study was carried out in Shiraz, one of the most populous cities in Iran, from December 2013 to March 2014.

By conducting a pilot study on fifty subjects, the sample size was estimated as 3515 using single population proportion formula based on the following parameters:

$P = 71\%$  (the proportion of clients' satisfaction in the pilot study),  $Z = 1.96$ , and  $d = 0.15\%$ . Therefore, 3515 households were selected by utilizing multistage sampling method; among them, 3400 (96.7%) agreed to participate in the study. At first, we considered the number of households, as a sampling unit, living in each of the nine municipality regions. Thereafter, we chose postal codes by simple random sampling proportionate to the size of households in each municipality region. Face-to-face interviews were carried out by trained fieldworkers in the interviewees' house. Inclusion criteria in the study were participant's age (at least 18 years old) being fully aware of the household medical problems and expenditure and living in Shiraz for the past 6 months before the interview. First, the interviewers had to provide the respondents a brief history regarding the study, its goal, and objectives, while they were reassured about the confidentiality of the information collected. If the included participant was reluctant to participate, the selected postal code was substituted by another postal code located on the same municipality region. The Ethics Committee approval was obtained from the Shiraz University of Medical Sciences Research Ethics Board before starting the study. All information was kept strictly confidential.

### Data collection form

The checklist was developed by a team of experts after a comprehensive literature review. The team included three policy makers, four physicians, four health-care managers, two health economists, three community medicine specialists, two epidemiologists, and a statistician. The team approved the face validity of the checklist while its reliability was checked in a pilot study of fifty participants ( $r = 0.82$ ).

The checklist is made up of four main parts comprising demographic information, insurance status of the household, enrollment in family physician program and finally, client's satisfaction with different levels of health services if at least one member of the households had utilized health service(s) in the last 6 months before the interview. Demographic data included nationality, ethnicity, the family's breadwinner marital status, educational level, and occupation. Moreover, we asked some questions regarding the household's assets, expenditure, monthly salary, and whether the household is registered in the family physician program. Regarding the "yes" response, the interviewee was asked about the duration of participating in this program and then answered six questions which rated the respondent's satisfaction level about this program.

The last part of the checklist started with the question "have you or other family members attended a medical center?" If any of the households had used health service(s), the respondent was asked to mention his/her opinion regarding that. The level of interviewees' satisfaction was evaluated utilizing some questions in a 5-score Likert scale, ranging from "quite dissatisfied" to

“quite satisfied” regarding accessibility of health-care service, waiting time, patient’s privacy when receiving health-care service, and its cost. We also asked if any member of their household had suffered from the chronic disease(s). In case of positive response, the next question was on the satisfaction level of the participant with the cost and availability of medications.

Furthermore, the participants were asked if any member of their household had been hospitalized during the past 6 months before the interview. If the answer was positive, they were to express their level of satisfaction about the hospital facilities and personnel behavior. On completion of the interview, the respondent was asked to rate the whole health system from 5 (excellent) to 1 (very poor).

### Statistical analysis

Statistical analyses were conducted using the SPSS statistical software, version 18.0 (SPSS Inc., Chicago, IL, USA). In addition, Chi-squared test was utilized to compare the qualitative variables. *T*-test was carried out to compare quantitative variables in satisfied versus dissatisfied group. The predictors of satisfaction were calculated utilizing the binary logistic regression. All studied variables were entered into the model, and statistically nonsignificant variables were omitted from the final model. When performing the regression analyses, the respondents whose answer on satisfaction was “I do not know” were excluded from the study. The level of statistical significance was set at  $P < 0.05$ .

## RESULTS

The sociodemographic characteristics of the interviewees are shown in Table 1. The mean age of the interviewees was 51.71 ( $\pm 14.01$ ) years, including 2427 (71.4%) females. Forty subjects (1.2%) did not have Iranian nationality. The prevailing ethnicity was Fars (3097; 98.8%), and 2659 cases (78.2%) were married. The median of family members was four with a minimum and maximum of 1 and 12, respectively. One hundred and twenty participants (3.5%) refused to report monthly family income, while 3160 cases (95.6%) disclosed monthly family income of \$730 or less, considering the fact that at the time of the study, one US Dollar was equivalent to 26600 Iranian Rial. Among the studied population, 3040 cases (89.4%) were insured and 2459 (72.3%) had registered in the family physician program.

The levels of satisfaction with the family physician system based on the measurement of five items are presented in Table 2. The items included waiting period for admission, waiting time at physician’s office, quality of service, cleanliness of the clinic, and quality of referral to a specialist. Moreover, the participants were asked to rate their overall satisfaction regarding the family physician system. More than half of studied populations

**Table 1: Sociodemographic characteristics of the interviewees (3400 individuals)**

Characteristics	Statistics
Age	51.71 $\pm$ 14.01*
Number of family members	4 (3-5)**
Gender	
Male	973 (28.6)
Female	2427 (71.4)
Nationality	
Iranian	3360 (98.8)
Other	40 (1.2)
Ethnicity	
Fars	3097 (91.1)
Turkish	153 (4.5)
Lorish and Kordish	91 (2.6)
Balouch	4 (0.1)
Arab	15 (0.4)
Marital status	
Married	2659 (78.2)
Single	408 (12)
Divorced/widowed	332 (9.8)
Employed	2103 (63.4)
Education	
Illiterate	270 (7.9)
Nonofficial training	119 (3.5)
Under diploma	1217 (35.8)
Diploma and associate	1338 (39.4)
Bachelor or higher	456 (13.4)
Family income (US\$)***	
<300	1459 (42.9)
300-730	1701 (50)
730-1370	117 (3.4)
>1370	3 (0.1)
Currently insured people	3040 (89.4)
Supplemental insurance	1346 (39.6)
Registered in family physician program	2459 (72.3)

\*All characteristics are in percentage, except age mean  $\pm$  SD. \*\*Median (minimum-maximum), \*\*\*At the time of the study, one US dollar was equivalent to 26,600 Iranian Rial. SD=Standard deviation

were either satisfied or very satisfied with waiting time for admission, waiting time at physicians’ clinic, quality of service, and quality of referral to a specialist. In addition, 1238 (53.1%) interviewees stated that they were generally satisfied with their family physician. Nevertheless, 1603 cases (67.5%) were either unsatisfied or very unsatisfied with the cleanliness of the clinic.

The participants were also asked to state their opinion about different parts of the health-care system to which they had referred during the last 6 months before the survey. As shown in Table 3, the highest dissatisfaction

**Table 2: Satisfaction level of the participants regarding their family physician based on five measurement items 6 months before the study**

	n	Satisfaction frequency, n (%)				
		Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Overall satisfaction	2329	131 (5.6)	1107 (47.5)	221 (9.5)	564 (24.2)	306 (3.1)
Waiting time for admission	2330	145 (6.2)	1431 (61.4)	159 (6.8)	445 (19.1)	150 (0.4)
Waiting time at the doctor's clinic	2330	129 (5.5)	1443 (61.9)	177 (7.6)	453 (19.4)	128 (0.5)
Quality of service	2319	145 (6.3)	1298 (56)	222 (9.6)	497 (21.4)	157 (0.8)
Cleanliness of clinic	2323	109 (4.7)	325 (14)	155 (6.7)	1494 (64.3)	109 (3.2)
Quality of referral to a specialist	2326	177 (7.6)	1179 (50.7)	278 (12)	474 (20.4)	218 (6.4)

**Table 3: Levels of satisfaction based on the measurement of five items among studied population 6 months before the study**

Level of satisfaction	Distance, n (%)	Waiting time for admission, n (%)	Waiting time at the clinic, n (%)	Patient's privacy when receiving care, n (%)	Cost of health-care service received, n (%)
Family physician					
Dissatisfied	240 (11.4)	278 (13.3)	311 (14.8)	215 (10.3)	266 (12.7)
Fair	151 (7.2)	207 (9.9)	246 (7.2)	66 (3.1)	131 (6.3)
Satisfied	1706 (81.4)	1611 (76.9)	1538 (73.4)	1815 (86.6)	1699 (81.1)
Governmental clinic					
Dissatisfied	224 (12.6)	262 (14.8)	302 (17.1)	99 (5.6)	262 (14.8)
Fair	294 (16.6)	260 (14.7)	309 (17.5)	98 (5.5)	238 (13.5)
Satisfied	1253 (71.8)	1246 (70.5)	1159 (65.5)	1572 (88.9)	1268 (71.7)
Private clinic					
Dissatisfied	113 (19.3)	85 (14.5)	89 (15.2)	23 (3.9)	224 (38.3)
Fair	119 (20.3)	109 (18.6)	121 (20.7)	16 (2.7)	110 (18.8)
Satisfied	354 (60.4)	391 (66.8)	375 (64.1)	546 (93.3)	251 (42.9)
Specialist clinic					
Dissatisfied	406 (33.3)	242 (19.9)	288 (23.6)	65 (5.3)	638 (52.4)
Fair	257 (21.1)	235 (19.3)	221 (18.1)	22 (1.8)	201 (16.5)
Satisfied	555 (45.6)	740 (60.8)	710 (58.2)	1130 (92.9)	378 (31.1)
Midwifery clinic					
Dissatisfied	62 (28.8)	45 (21)	52 (24.3)	29 (13.6)	64 (29.9)
Fair	44 (20.5)	22 (10.3)	29 (13.6)	7 (3.3)	33 (15.4)
Satisfied	109 (50.7)	147 (68.7)	133 (62.1)	177 (83.1)	117 (54.7)
Nutrition specialist					
Dissatisfied	18 (22.5)	16 (20.3)	20 (25.3)	6 (7.6)	18 (22.8)
Fair	17 (21.3)	7 (8.9)	4 (5.1)	1 (1.3)	10 (12.7)
Satisfied	45 (56.3)	56 (70.9)	55 (69.6)	72 (91.1)	51 (64.6)
Physiotherapy clinic					
Dissatisfied	28 (19.3)	18 (12.4)	17 (11.7)	3 (2.1)	41 (28.3)
Fair	22 (15.2)	11 (7.6)	19 (13.1)	4 (2.8)	21 (14.5)
Satisfied	95 (65.5)	116 (80)	109 (75.2)	138 (95.2)	83 (57.2)
Governmental hospital					
Dissatisfied	191 (22)	162 (18.8)	209 (24.1)	67 (7.7)	116 (13.4)
Fair	200 (23.1)	177 (20.6)	174 (20.1)	45 (5.2)	122 (14.1)
Satisfied	476 (54.9)	522 (60.6)	484 (55.8)	755 (87.1)	626 (72.5)
Private hospital					
Dissatisfied	151 (39.9)	51 (13.5)	47 (12.4)	8 (2.1)	170 (45)
Fair	68 (18)	53 (14)	56 (14.8)	10 (2.6)	62 (16.4)
Satisfied	159 (42.1)	274 (72.5)	275 (72.8)	360 (95.2)	146 (38.6)

rate was reported about the cost of specialists' clinic, followed by the cost of admission in private hospital.

Table 4 presents the levels of satisfaction among studied population for hospitalization during the last 6 months before the study based on the measurement of 11 items. The items included reception desk, behavior of security guards, cost, insurance, air conditioning systems, food, nursing services, physicians' visits, diagnostic tools, and privacy. Most subjects with a history of hospitalization in the given period were "satisfied" or "very satisfied" with all foregoing items, except for the cost; 104 cases (31.5%) were either "unsatisfied" or "very unsatisfied."

Overall satisfaction with the health-care system and family physician system is presented in Figure 1. As illustrated in Figure 1, most subjects were satisfied or very satisfied with the health-care system and family physician system. In other words, 2015 (61.9%) and 2088 (61.4%) cases were satisfied with the health-care system and family physician system, respectively. In addition, 187 (5.5%) and 211 (6.2%) of interviewees had very satisfied views regarding the health-care system and family physician, respectively. Nevertheless, 660 (19.4%) and 442 (13%) cases were dissatisfied with health-care and family physician systems, respectively, and the

frequencies of very dissatisfied subjects were 187 (5.5%) and 218 (6.4%), respectively.

The determinant factors of dissatisfaction with health-care system in studied population were calculated utilizing binary logistic model. Among studied variables, inhabitation region, satisfaction with family physician, drug availability, cost of drug, and presence of chronic disease in the household were significantly associated with dissatisfaction with the health-care system. Living in high socioeconomic regions ( $P = 0.001$ , odds ratio [OR] = 2.2) and middle socioeconomic regions (OR = 1.4) were determinant variables in comparison to low socioeconomic regions for predicting dissatisfaction with the health-care system. Moreover, dissatisfaction with family physician ( $P < 0.001$ , OR = 2.3), unavailability of drug ( $P = 0.02$ , OR = 1.6), high drug prices ( $P < 0.001$ , OR = 1.9), and presence of chronic diseases in the household ( $P = 0.03$ , OR = 1.4) were significant predictor factors associated with dissatisfaction with the health-care system [Table 5].

## DISCUSSION

The aim of this study was to identify clients' satisfaction regarding health-care services and define its associated factors in South-West of Iran. To achieve these objectives, households were evaluated by a face-to-face interview and data analysis produced three main findings. First, there was a high level of satisfaction with distance, time for admission, time at the clinic, privacy, and cost among subjects regarding different parts of health-care system such as state clinics, midwifery clinics, nutritionists, physiotherapy centers, and state hospitals. Moreover, in private clinics, specialists' clinic, and private hospital, and for other parts of the health-care system, subjects were more satisfied with distance, time for admission, time at the clinic, and privacy. Nevertheless, most individuals were more unsatisfied with the cost of services. The overall

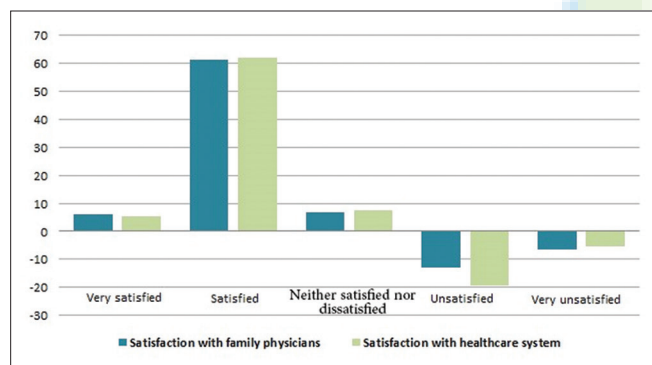


Figure 1: Overall satisfaction with healthcare system and family physician system

Table 4: Levels of satisfaction among studied population regarding hospitalization 6 months before the study

	Very satisfied, n (%)	Satisfied, n (%)	Neither satisfied nor dissatisfied, n (%)	Dissatisfied, n (%)	Very dissatisfied, n (%)
Reception	52 (15.7)	223 (67.4)	19 (5.7)	30 (9.1)	7 (2.1)
Guards' behavior	45 (13.6)	238 (71.7)	22 (6.6)	19 (5.7)	8 (2.4)
Cost	38 (11.5)	158 (47.9)	30 (9.1)	67 (20.3)	37 (11.2)
Insurance coverage	53 (16.4)	165 (51.1)	36 (11.1)	46 (14.2)	23 (7.1)
Cleanliness	62 (19)	218 (66.7)	18 (5.5)	22 (6.7)	7 (2.1)
Air conditioning system	51 (15.5)	244 (74.4)	16 (4.9)	14 (4.3)	3 (0.9)
Food	41 (12.5)	160 (48.8)	92 (28)	27 (8.2)	8 (2.4)
Nursing services	47 (14.3)	225 (68.6)	29 (8.8)	17 (5.2)	10 (3)
Visit by physicians	56 (17)	223 (67.8)	25 (7.6)	16 (4.9)	8 (2.4)
Paraclinics	52 (15.9)	224 (68.5)	28 (8.6)	19 (5.8)	4 (1.2)
Privacy	64 (19.3)	231 (69.8)	13 (3.9)	19 (5.7)	4 (1.2)

**Table 5: Determinant factors of dissatisfaction with health-care system in Shiraz**

Characteristics	OR	95% CI for OR (lower-upper)	P
SES*			0.001
High SES	2.2	1.4-3.3	<0.001
Middle SES	1.4	0.9-1.9	0.08
Low SES	1	-	-
Level of satisfaction with family physician			
Dissatisfied	2.3	2.1-2.6	<0.001
Satisfied	1	-	-
Drug availability			
Not available	1.6	1.1-2.4	0.02
Available	1	-	-
Cost of drug			
Expensive	1.9	1.5-2.6	<0.001
Affordable	1	-	-
Presence of chronic disease(s) in household			
Yes	1.4	1.1-1.9	0.03
No		-	-

\*SES=Socioeconomic status. OR=Odds ratio, CI=Confidence interval

satisfaction rate of the health-care system in our study was 67.4%; of which, 5.5% were very satisfied while 61.9% were satisfied. These findings are consistent with those of Al Emadi *et al.*<sup>[9]</sup> and Sohrabi *et al.*<sup>[10]</sup> who reported an overall satisfaction of 75% in Qatar and 80% in Tehran, Iran. The rate of satisfaction with health-care systems in general population in 2010 reported by some countries were as follows:<sup>[11]</sup> Armenia 53.8%, Azerbaijan 56.4%, Belarus 52%, Georgia 44.1%, Kazakhstan 50.8, Kyrgyzstan 47%, Moldova 31.6%, Russia 23.8%, and Ukraine 17.4%. The results above show that the rate of satisfaction with health-care systems varies widely between countries. These inconsistencies may be related to different aspects of satisfaction, different cultures, expectations, and external factors such as political context.

Nevertheless, regarding satisfaction with family physician system, the studied subjects were more satisfied or very satisfied with some variables such as waiting for admission, and at physician's clinic, quality of delivered service(s), and referral to a specialist. Although they were unsatisfied or very unsatisfied with the cleanliness of their family physician's clinic, as a whole most subjects were satisfied with family physician system. Our results are consistent with those of Taheri *et al.*,<sup>[12]</sup> who reported that participants were satisfied with the family physician program in Iran. Furthermore, 67.2% of the respondents in this study rated items of the questionnaire excellent or good. In this context, the high rate of satisfaction regarding family physicians' care was reported in the Canadian Community Health Survey in 2006.<sup>[13]</sup> Waiting time in family physician clinics was a factor of patients'

dissatisfaction expressed by 25% of studied population in the present study. This finding agrees with the previous studies<sup>[10,12,14]</sup> that reported delays in centers as a determinant factor of patients' satisfaction. Shortage of time, and particularly inappropriate time management could be stated as one of the most remarkable reasons for crowding and congestion in health-care centers and account for long waiting hours in family physician clinics. Cleanliness of clinics, quality of service and referral to a specialist, distance, privacy, and cost were other variables studied in this research and were the reasons for some dissatisfaction with family physician. Although more than half of the subjects were satisfied with family physician system, the rate of dissatisfaction from such centers could draw the attention of the authorities. This, in addition to considering patients' views, would enable those in charge of health systems to focus on the weak points to offer better and more efficient services for patients.

In addition to the characteristics of the respondents, age, gender, education level, conditions that require emergency care, need for special drug, access to prescribed medication(s), affordability of drug, and chronic disease in the family were significant factors affecting people's satisfaction level with the health-care system. Our results are in line with studies which revealed that participants who were older, illiterate, or just completed primary education were more satisfied.<sup>[15-17]</sup> In the present study, women claimed to be more satisfied as indicated by the study of Taheri *et al.*<sup>[12]</sup> In contrast to our result, in studies carried out by Quintana *et al.*<sup>[18]</sup> and Al-Dawood *et al.*,<sup>[19]</sup> men stated higher satisfaction level comparing to women. Moreover, in terms of the studied variables, people living in higher socioeconomic status (SES) regions expressed more dissatisfaction about the health-care system. In other words, respondents with high SES who were dissatisfied with a family physician system were more likely to express dissatisfaction with the health-care system in Shiraz, Iran. Drug availability and cost of the drug were other variables that impact prediction of dissatisfaction with health-care system in Shiraz, Iran.

Like other studies, this study had some limitations. First, it comprised urban population; this calls for further investigations including rural inhabitants. Besides, the results would be more reliable if we could carry out the study in other cities located in different provinces. Nevertheless, due to large sample size which covers all regions in Shiraz, the results of this study can be extrapolated to other cities in the Fars Province.

## CONCLUSIONS

Our findings demonstrated a high level of satisfaction with health-care system and family physician in Shiraz, and 67.4% of the satisfaction rate in this study shows the

efficiency of Iran's health policy. Moreover, dissatisfaction with cost of services in studied subjects can be a source of concern to relevant authorities who are in charge of health-care system in Iran to provide better and more suitable services; nevertheless, recent improvement in the quality and coverage of insurance by Iran's Ministry of Health can improve satisfaction with the health-care system. The results of this study can be compared to those of similar researches carried out in different regions of Iran. This could help health policy makers seek alternative approaches to create satisfaction regarding health-care system in the community. Besides, policy makers in different regions of Iran could implement different efficient interventions to combat existing deficiencies. Further comprehensive studies are required to select criteria associated with organized and rightful access to efficient health care in relation to client's satisfaction.

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### Conflicts of interest

There are no conflicts of interest.

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