

# Patients' Satisfaction of Health Care System Reform Plan in Educational-Medical Centers of Rasht City in North of Iran, 2018



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## ABSTRACT

**Introduction:** One of the goals of the health system is to ensure that people are healthy. Reaching this goal is only possible through the provision of the proper services. The satisfaction of patients with the quality of health care services is used as a questionnaire to investigate the effectiveness of hospital services concerning consumption management and patient care quality. It assists managers and the decision-making network to identify the strengths and weaknesses of the system.

**Objective:** This study aimed to investigate the satisfaction of hospitalized patients in educational and medical centers of Rasht City, Iran with the "Health Care System Reform Plan" in 2019.

**Materials and Methods:** The present study is an analytical cross-sectional study. A total of 395 patients hospitalized in educational and medical centers of Rasht City were selected based on the stratified random sampling method and according to the inclusion criteria. The study data were collected by a questionnaire examining patients' satisfaction with the "Health Care System Reform Plan" developed by the Treatment Deputy of Guilan University of Medical Sciences. The questionnaire has 37 questions in 5 areas of patient's satisfaction with hoteling, hospital bills reduction program, resident physician program, notification program, the program for the promotion of normal childbirth. Data analysis performed using descriptive statistics indicators and Mann-Whitney U, Kruskal Wallis, and logistic regression model.

**Results:** The results showed the Mean±SD of samples' age was 43.51±18 years. The majority (23.8%) of the samples were less than 30 years old. Moreover, there was a significant difference between satisfaction score of the Plan (P=0.009) in terms of gender, hospital bills (P=0.001), resident physicians (P=0.009), and notification program (P=0.032). Also, men had a higher overall score than women. The findings of this study showed that the Mean±SD satisfaction was equal to 82.89.1 with a minimum score of 39.71. In the logistics model, only two variables of the hospital (P=0.017) and job (P=0.001) were considered as the most important factors related to the overall satisfaction with the "Health Care System Reform Plan".

**Conclusion:** Based on the results of the study, patients' satisfaction with the implementation of the "Health Care System Reform Plan" was at the acceptable level and various factors have contributed to this level of satisfaction.

## Keywords:

Satisfaction, Hospital, Health care system reform plan, Inpatients

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## Highlights

- Patients' satisfaction assessment can be used to evaluate the performance of health care providing centers such as hospitals.
- After the implementation of the Health Care Reform Plan, the patients' payment to hospitals decreased and as a result, their satisfaction increased.
- Factors influencing patient's satisfaction are hospital structure, available equipment, physician-patient ratio, number of general manpower, and type of behavior shown by non-specialized personnel.
- The most influential area in patient satisfaction was the presence of resident physicians and the least the normal childbirth promotion program.

## Plain Language Summary

This study aimed to determine the satisfaction of patients admitted to Rasht educational and medical centers with the new health system carried out and identify the functional problems that affect inpatients' satisfaction. Meeting the health needs of individuals and society is the main mission of the health system. These needs are constantly changing under economic, political, and social conditions. Therefore, it is necessary to transform and enhance the health system of the society in line with the changes caused by the above factors. Evaluating the "Health Care Reform Plan" after years passed from its implementation, can help identify its strengths and weaknesses, pave the way for the promotion of strengths, and eliminate or reduce weaknesses. The results of this study showed that implementing a "Health Care Reform Plan" led to increased patient satisfaction due to reduced costs. One of the most important strengths of this project was the financial protection of people's health expenses because of the government's extensive funding. The results also showed that the lowest satisfaction pertained to normal childbirth which creates several problems for the health system of the country and also for mothers. The reason is the lack of motivation and encouragement of mothers and physicians for performing it. In other words, in this study, the "Health Care System Reform Plan" was not successful in this area and missed global and even national standards. The results of this study help reduce people's and health services' problems, reduce the health care costs for people, establish justice in access to services, and improve the quality of services.

## Introduction

Having a healthy life is a valuable social capital and is an undeniable right of all members of society. Health indicators in society are important factors in the extent of development [1]. One of the goals of health care systems is to ensure and promote the health of individuals in society. To achieve this goal, high-quality services should be provided to them according to the needs of society [2]. Health care is one of the most basic human needs and its realization is the main mission of the health system. These needs are constantly changing due to economic, political, and social changes. Therefore, it is necessary for the health system of the society to be evolved and improved [3]. The significance of this issue has increased in recent years due to the spread of refractory and costly diseases [4, 5].

The country's economic conditions, international economic pressures, increased share of people in treatment costs, decreased role of insurance companies, a significant reduction in the salaries of health system activists, potential risks such as reduced normal childbirth rates and the increased road accidents and natural disasters, highlighted the need for change in the health care system. Meeting these needs and changes is vital, based on which the issue of making change and promotion in the country's health system has been raised. This change is based on Article 29 of the Constitution on the duty of the state to provide health care services to the people. This Article was implemented in May 2014 [1].

In this plan, 8 health service packages will be implemented as follows:

Hospital bills reduction program for inpatients in hospitals affiliated to the Ministry of Health and Medical

Education; Program for supporting physicians' residence in hospitals in deprived areas; Program of the presence of specialist resident physicians in hospitals affiliated to the Ministry of Health and Medical Education; Improving the quality of visiting services in hospitals affiliated to the Ministry of Health and Medical Education; Hoteling quality improvement program in hospitals affiliated to the Ministry of Health and Medical Education; Normal childbirth promotion program. Expanding the coverage of air and ground emergency services; Improving the tariffing of health services [1, 6].

To evaluate health care services, it is highly important to have patients' point of view as customers receiving the abovementioned services [7]. The patient's satisfaction index is one of the indicators of quality of health care [8, 9], which can largely reflect the accuracy of the services provided in the form of the abovementioned plan [2, 10]. Assessing patient satisfaction as a questionnaire to measure the productivity and effectiveness of health-related services can be used to make decisions about patient management and patient care quality and to evaluate the performance of health care providing centers such as hospitals [11]. Dissatisfaction with health care services has adverse consequences. The dissatisfaction of patients leads to their withdrawal from the health system or at least their non-participation in providing services. Evaluating the care provided will lead to reforms in service delivery and therefore, health care services will be implemented according to standardized patterns developed [12].

Thus, this study aimed to determine the satisfaction of hospitalized patients in educational-medical centers of Rasht City, Iran with the "Health Care System Reform Plan" (hereinafter called the Plan) in 2019.

## Materials and Methods

The present study is an analytical cross-sectional study. The study population was patients admitted to 6 educational and medical centers in Rasht City in north of Iran. The required sample size to determine patients' satisfaction with the Plan was estimated to be 384 based on the results of Sharifnia et al. study [2], with 95% confidence interval, 10% relative error limit, and 50.2% satisfaction with the Plan. The method of sampling was stratified random sampling. Accordingly, each hospital was considered a stratum. The number of samples in each hospital was determined by their active beds.

The inclusion criteria included patients who were hospitalized for at least 48 hours and were ordered to

be discharged from the ward by the treating physician. Emergency and hospitalized patients admitted for less than two days did not enter the study. Current consent was obtained before completing the questionnaire and the patient was willing to participate in the research. Besides, based on the contents of the file and questions asked from the patients, all patients should psychologically and cognitively be able to answer questions. Hospitals dedicated to mental and childhood illnesses were not included in the study.

To examine the patient's satisfaction with the quality of medical services in this Plan, a two-part instrument was used. The first part included individual, social, and medical information of the patient. This information included age, gender, marital status, employment status, education level, type of insurance, and length of hospital stay. The second part of the questionnaire was the questionnaire of satisfaction with the Plan developed by Deputy of Treatment of Guilan Medical Sciences which is available on its website [13]. This questionnaire included 37 questions in 5 areas of patient's satisfaction with the hoteling program, hospital bills reduction program, the presence of resident physicians, the notification program, and the program to promote normal childbirth. Each question is either answered as "Yes", or "To some extent", or "No" and scores 2, 1, and 0, respectively.

Patient's satisfaction with hoteling contained 15 questions, hospital bills reduction program for inpatients 5 questions, presence of resident physicians 6 questions, notification program 6 questions, and the normal childbirth promotion program 5 questions. Thus, taking into account the minimum score of 0 and a maximum of 2 for each question, the instrument total score ranges from 0 to 74. Questions 18, 19, 20, and 29 were scored in reverse. Finally, to compare the areas with each other as well as expressing the total score, the scores were adjusted as a percentage. A higher percentage indicated that patients were more satisfied with the Plan. It should be noted that the area of promoting normal childbirth was not investigated in all hospitals under study and it was appropriate only in one research hospital which had a maternity ward. Therefore, it was not added to the total score of other hospitals in question.

To determine validity, the questionnaire was given to 12 members of the Faculty of Guilan University of Medical Sciences and CVR (content validity ratio), and CVI (content validity index) indicators were measured. Given the values of above 80% of these indicators, the questionnaire was sufficiently validated. To determine the reliability of questionnaires, a preliminary study

was conducted on 30 patients of the study population using equivalent forms to study method and the result equaled to 0.92 based on the ICC (interclass correlation coefficient) repeatability coefficient. This result indicated the reliability of the questionnaire. The Cronbach alpha coefficient was also used to measure the internal reliability of the questions and its value was 0.75. Therefore, the internal consistency of the questions was confirmed. To prepare the equivalent forms, even and odd questions and also, moving the domains were used in the questionnaire.

The obtained data were collected from February 2019 over two months. All patients signed the informed consent form for study participation and for children, their guardians who were in the hospital during the discharge were asked questions after collecting the information from the questionnaires. The study data entered SPSS version 24. To determine the level of satisfaction with the Plan in each area and in general, descriptive statistics indexes and Man-Whitney U test, Kruskal Wallis test, and logistic regression model were used. To determine the distribution of type of satisfaction scores, the Kolmogorov-Smirnov test was used. The significance level of the tests was considered less than 0.05.

## Results

The demographic characteristics of the studied samples showed that their Mean±SD age was 43.5 18 years. The majority (23.8%) of the samples were less than 30 years old. Also, 57.97% of them were women, and 87.09% were married. In the study of employment status, 43.29% were housewives, 22.53% self-employed, and 14.68% unemployed, respectively. In terms of education status, 37.97% had a bachelor's degree. Most patients used a rural insurance card (32.66%). Their Mean±SD length of hospital stay was 5.1 4.5 days. The shortest hospital stay was 2 days and the longest 68 days. The findings of this study showed that in general, the Mean±SD level of satisfaction was 82.8 9.1 (from a maximum of score 100) with a minimum satisfaction

score of 39.71. [Table 1](#) presents the score of patient satisfaction in each studied area.

After examining satisfaction in the domains under study according to individual and social variables, the results showed a significant difference between the age groups ( $P=0.036$ ) in terms of satisfaction in the area of hospital bills reduction program so that the highest satisfaction was seen in the age group of 60 years and older and the lowest in the patients in 30-39 age group. Moreover, there was a significant difference between satisfaction score of the Plan ( $P=0.009$ ) in terms of gender, hospital bills ( $P=0.001$ ), resident physicians ( $P=0.009$ ), and notification program ( $P=0.032$ ). Also, men had a higher overall score than women. The overall score of satisfaction with the Plan is presented in [Table 2](#).

The logistic regression model was used to determine the factors related to patients' satisfaction with the Plan. In this model, the scores less than 50th percentile were considered 0, and the scores higher than the 50th percentile were considered 1. In the logistics model, only two variables of hospital and job were considered as the most important factors related to the overall satisfaction with the Plan. Therefore, the housewives were 2.5, the workers 16.7, the employees 6.7, and self-employed 0.2 times higher satisfied than the reference group (unemployed patients) ([Table 3](#)).

## Discussion

The present study aimed to determine patients' satisfaction with the "Health Care System Reform Plan" admitted in the educational and medical centers of Rasht City in 2019. It was shown that the satisfaction of patients admitted to these centers in Rasht City with the Plan had a high score. This finding is consistent with the results of many studies conducted in Iran [9, 14, 15]. Meanwhile, the results of Eytan's study in Switzerland reported low overall patient satisfaction with medical services. Depending on how health services are provided in different countries, expectations of individuals are different [16].

**Table 1.** Statistical indicators of the satisfaction score regarding the "Health Care System Reform Plan" in each area and in general

Satisfaction Score in Each Area and in General (0-100)	Mean±SD	95% CI	
		Lower	Upper
Hoteling	77.39±10.45	76.36	78.43
Reduced hospital bills	95.03±12.40	93.81	96.26
Resident physicians' program	91.35±14.44	89.92	92.78
Notification program	81.71±16.66	80.06	83.36
Promotion of normal childbirth program	52.61±37.41	43.11	62.11
Overall satisfaction of the Plan	82.84±9.08	81.84	83.74

**Table 2.** The relationship between the overall satisfaction score regarding the “Health Care System Reform Plan” (the Plan) in terms of individual and social variables

Individual and Social Variables	Overall Satisfaction	No.	Mean±SD	Mean Ranks	Sig.
Gender	Female	229	81.34±10.48	185.19	*0.009
	Male	166	84.90±6.14	215.67	
Marital status	Single	51	83.79±6.70	196.14	*0.901
	Married	344	82.70±9.38	198.28	
Age(y)	<30	94	82.02±9.71	188.18	**0.012
	30-39	78	79.98±10.68	165.85	
	40-49	80	82.87±9.55	200.10	
	50-59	62	84.07±8.09	214.75	
		81	85.57±5.40	225.47	
Job	Housewife	171	80.77±10.74	180.43	**0.002
	Unemployed	58	82.35±6.90	173.55	
	Worker	24	84.11±4.95	200.25	
	Employee	36	86.01±5.89	234.43	
	Self-employed	89	84.59±8.31	220.71	
	Retired	17	87.62±5.62	258.94	
Education level	Illiterate	53	84.95±5.62	227.05	**0.014
	Under diploma	150	83.01±7.03	187.12	
	Diploma	106	80.60±11.46	180.50	
Hospital stay duration (d)	Academic education	86	83.99±9.50	220.65	**0.578
		171	81.63±11.14	191.27	
	4-6	121	84.07±6.33	204.70	
	7	103	83.39±7.73	201.31	
Hospital	1	80	74.76±13.57	124.58	**0.001
	2	45	85.43±5.14	218.33	
	3	35	88.47±4.21	280.82	
	4	25	85.62±6.83	237.52	
	5	110	81.87±6.30	165.00	
	6	100	86.55±5.00	245.78	

\* The Mann Whitney U test.

\*\* The Kruskal-Wallis test.

In Iran, after the implementation of the Plan, hospital bills have been greatly reduced, and in some work shifts, the specialist physicians were present in hospitals as residents. These are some differences that the implementation of the Plan has made. However, since a large number of clients to government centers providing health services in Iran are people with poor economic status, the reduction of payments by patients can satisfy them with this new system. In this regard, according to Sheikh study in Qazvin City, Iran, most hospitalized patients were highly satisfied with the services received [17]. Also, the results of the study by Seidi in Tehran City, Iran showed that most patients were satisfied with the services provided [18].

With regard to determining and examining patients' satisfaction with hoteling in the educational and medical centers of Rasht in the present study, the results confirmed that among the areas under study, the hoteling area had a lower average score than other areas. This finding contradicts the study results by Mousavi, in which patients were satisfied with hoteling services. In studies by Kazemini in Yazd [19] and Arefi in Tehran [20], both conducted before the implementation of the Plan, dissatisfaction with hoteling services has been reported extensively. It should be noted that the hospital structure, manpower, and even equipment can be effective in satisfaction with the hoteling area.



**Table 3.** Regression coefficient and the odds ratio of factors related to overall satisfaction with the “Health Care System Reform Plan”

Variable	Regression Coefficient	SE	Sig.	OR	95% CI	
					Lower	Upper
Job			0.001			
Housewife						
Worker						
Employee						
Self-employed						
Retired						
Unemployed				Reference group	1	
Hospital name			0.017			
2						
3			0.			
4						
5						
6						
1	0			Reference group	0	
Constant value						

Therefore, it may not be possible to compare the results of studies related to patient’s satisfaction in different centers and different cities. Because with or without the implementation of the Plan, the worn-out structure of the hospital or a small number of people providing health services can affect the satisfaction of health customers. In this regard, the difference in hospital structure, the physicians-patients ratio, the number of general manpower (such as administrative, service, and security personnel), and how non-specialist staffs treat patients can affect patient satisfaction.

Regarding the level of patients’ satisfaction with the amount of payment in educational and medical centers of Rasht in the present study, the highest level of satisfaction was observed in this area. Implementation of projects transforming payment systems to receive health services in other countries such as the United States has been associated with reduced costs for the patients [21]. In studies conducted in Iran, contradictory results can be found in this regard. In some studies, satisfaction with the amount of payment for health services is high [22, 23]; however, the study findings of Gorji indicated that patients are not satisfied with the amount

of payment [24]. Because the studied subjects were not in the same age range and have not received the same health-related services, the discrepancies found are understandable. The same amount of payment to provide a specific type of service for two groups of people with higher and lower incomes can be associated with differences in satisfaction. Even the type of profession subjects under study can be very influential in this regard.

About assessing patient satisfaction with the program of physicians residing in educational and medical centers of Rasht, the reported satisfaction rate was very high compared to other areas. The results of Dehghan study that examined the satisfaction with medical services after the establishment of the Plan in Yazd—in the center of Iran—showed that the participants in the study expressed their high satisfaction in this regard [25]. When patients are sure that their doctors reside in the hospital and if they encounter a problem, the doctors are available to help, they will be more confident and probably more satisfied with the quality of the services provided. Physicians’ full-time residence plan in medical centers can probably increase patients’ satisfaction by providing them with comfort and reassurance.

Concerning the level of patients' satisfaction with the notification status in the educational and medical centers of Rasht, findings of this study showed that patients are satisfied with this area since the implementation of the Plan. In this regard, the results of a study showed that the majority of the subjects under study were satisfied with the area of notification regarding the compliance of the charter of patient's rights [26].

Concerning patients' satisfaction with the program of promoting normal childbirth in educational-medical centers of Rasht, the lowest level of satisfaction was related to this area. It should be noted that patients were satisfied with the normal childbirth promotion program only in one hospital and perhaps a lower percentage of satisfaction in this area can be due to this point. This result is in line with the results of the study conducted by Omid et al., in Tehran [27]. However, the results of a study investigating the satisfaction of mothers referred to a medical center in Mazandaran—located in the north of Iran—to give birth with the Plan was moderate [2]. As mentioned, due to the establishment of the maternity ward in only one educational medical center in Rasht, questions regarding this area of the Plan have been asked only at this center. However, all the factors that can affect the satisfaction of these people could have their shares in such a report.

The results of logistic regression confirmed the predictive role of the two variables of "profession" and "hospital" on patients' satisfaction with the Plan. In a broad study conducted by Azami et al. on the relationship between employment and overall satisfaction with healthcare services, the highest level of dissatisfaction was reported by workers and the lowest level by farmers [14]. In the current study, workers have had higher chances of satisfaction than unemployed subjects. It seems that the "profession" of every individual, which is his or her underlying cultural and social context, may affect the way he or she views health care services. The type of "profession" may create a particular perspective and affect the satisfaction of the individual. Moreover, it should be noted that the Plan is designed to support people with lower incomes so that they can enjoy higher quality medical and health services at a lower cost. The realization of this goal might contribute to the satisfaction of the low-income groups.

Regarding the relationship between the type of hospital and the satisfaction of the services provided in the Plan and the significant difference in patient satisfaction in different centers under study, we can refer to the results of a study conducted in Urmia with the similar pur-

pose, in which the satisfaction of inpatients in different medical centers was different [9]. The exact similarity seems impossible regarding the quality of services provided in different hospitals. Hospital structure, manpower, equipment, and many other hidden factors can affect the quality of hospital services. Therefore, the variable of the hospital location can be considered as a predictor variable in line with the satisfaction with the Plan.

Despite its numerous strengths, the current study has limitations due to the use of self-report questionnaires to investigate the satisfaction of inpatients and inevitable bias in answers.

Due to the low satisfaction of patients in the field of promoting normal childbirth, it is suggested that future studies investigate the causes of patients' dissatisfaction in this area in Guilan Province. Besides, according to the results of the regression model, i.e., the effect of hospital type on patient satisfaction, it is suggested that future studies examine the relationship between hospital management style and patients' satisfaction with the Plan.

## Ethical Considerations

### Compliance with ethical guidelines

The study data were collected after obtaining the code of ethics No. IR.GUMS.REC.1397.323 from Deputy of Research and Technology of Guilan University of Medical Sciences. All participating patients signed the informed consent form.

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### Authors contributions

Conceptualization: Samid Bahari, Ataullah Asadi Loyeh, Zahra Majd Teimmri and Ezzat Paryad; Writing – original draft: Ezzat Paryad; Data collection: Samid Bahari; data analysis: Samid Bahari, Ehsan Kazemnejad Leili; Reviewing the final edition: All authors.

### Conflict of interest

The authors declared no conflict of interest.

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