

Original Paper

Patient Satisfaction With the Quality of Health Services Provided by Public Hospitals in Rasht, Iran



Fardin Mehrabian¹ , Mahnaz Hemmati No'doust Gilani^{2*} , Alireza Almaee³

1. Professor, Department of Health Education and Promotion, Health and Environment Research Center, School of Health, Guilan University of Medical Sciences, Rasht, Iran.

2. Assistant Professor, Department of Public Administration, School of Management, Payame Noor University, Tehran, Iran.

3. Graduate, public administration, Payame Noor University of Iran, Rasht, Iran.



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ABSTRACT

Introduction: Service quality is a distinguishing and most powerful competitive factor. By improving the quality of service delivery, it is possible to increase productivity, reduce costs, and, as a result, increase patient satisfaction.

Objective: The present study aims to determine the level of patient satisfaction with the quality of health services provided by public hospitals based on the SERVQUAL-KANO model.

Materials and Methods: This is an analytical study with cross-sectional design. The study population consists of all patients admitted to the emergency department, and male & female medical wards of public hospitals in Rasht, Iran. This, 250 patients were selected by a two-stage stratified sampling method. Data collection tools were two questionnaires of SERVQUAL and Kano with acceptable reliability ($\alpha=0.77$ and 0.72). Kolmogorov-Smirnov and Wilcoxon tests were used to analyze data.

Results: The majority of patients were male (53%) with a bachelor's degree (32%) aged 40-59 years (38%). In all hospitals, according to the Wilcoxon test results, the highest and lowest mean quality scores were related to assurance and tangibility dimensions ($P<0.05$). The highest level of patient satisfaction was reported in Hospital no. 2 with a quality gap of +0.41, while the lowest level was related to Hospital no. 5 with a gap of -0.23. According to Importance-Performance Analysis matrix, tangibility was in the "Concentrate Here" quadrant; the dimensions of reliability and responsiveness were in the "Low Priority" quadrant; the dimension of assurance was in the "Possible Overkill" quadrant; and the dimension of empathy was in the "Keep Up the Good Work" quadrant. According to the Kano model, 13 attributes were classified as "Attractive", 11 as "One-dimensional", and only 1 property as "Reverse"; no attribute was classified as "Indifferent".

Conclusion: It seems necessary to make more improvements in facilities and equipment, appearance of staff, communication tools, and cleanness of hospital environment to increase patient satisfaction in public hospitals.

* Corresponding Author:

Mahnaz Hemmati Noedoust Gilani, PhD.

Address: Department of Public Administration, School of Management, Payame Noor University, Tehran, Iran.

Tel: +98 (912) 1979453

E-mail: mahatty41@yahoo.com

Highlights

- Having knowledge of the quality of services provided in hospitals can facilitate decisions about improving service quality.
- Since the economic conditions of a wide range of people in Iran is moderate-to-poor, and many of them still can not afford to pay for private hospitals, there is a need for improving the quality of services in public hospitals.
- Determining the gap between patients' expectations and perceptions of services provided by hospitals can help plan for the improvement of current situation.

Plain Language Summary

Today, it must be acknowledged that, if the quality of services provided by an organization is not at an acceptable level, the future of the organization and internal and external stakeholders (employees, customers, society) will be damaged. Therefore, we should be aware of the quality of existing services and take steps to improve it. One of sectors whose quality of service is very important is the health sector. The quality of services that these centers including hospitals provide to citizens is of great importance in many areas. In this study, the satisfaction of 250 patients admitted to 7 public hospitals in Rasht, Iran with the quality of services was investigated. The results showed that, the highest level of satisfaction was related to the knowledge and skills of staff and their ability to build trust and confidence and assurance in patients, while the lowest level of satisfaction was related to physical facilities and equipment, staff appearance, and communication tools (tangible issues). It is suggested that, while maintaining and improving the knowledge and behavior of staff, attention should be paid to the hospital infrastructure and the necessary measures should be taken to allocate funds and improve the appearance and equipment of these hospitals.

Introduction

Service quality is the distinguishing factor whose higher level is a competitive advantage for service organizations. Improving the quality of service delivery leads to increased productivity, reduced costs, and thus increased patient satisfaction [1]. The quality is important for health services. Providers of these services should be aware of the patients' expectations about the provided services. Therefore, it is the first step to improve the service quality [2]. Maintaining health care for the community groups is a crucial task of health care providers. Measurement of the quality of services can help identify problems and plan to improve the provision of health services [3]. Of course, the need to pay attention to the quality of services is not limited to health care centers. It has become an inescapable challenge for all organizations [4], and due to its reflection in the community, more attention should be paid to it [5].

The patient satisfaction is important in many ways; patients with poor quality not only impose many costs on the community, but also are as the indicator of an underdeveloped country [6]. Health promotion is an impor-

tant factor for economic, social, and individual growth [3]. For this purpose, the Iranian Ministry of Health in 2014 divided the health system into three sectors of treatment, health, and education [4]. In order to achieve maximum goals in providing health care services, it is important to pay attention to their quality control [7]. With increasing advances in medical sciences, and increased awareness and expectations in patients, health care providers have become more patient-centered. Therefore, to achieve the goals, health care providers should satisfy patients by proper management of costs and having an acceptable level of service quality [8-11].

Various methods have been proposed for assessing service quality, one of which is SERVQUAL model. It is a suitable tool for measuring patient satisfaction with hospital services (analysis of possible gap between perceived and expected services). It helps evaluate the quality of services, planning, treatments, and actions [12]. The SERVQUAL model was developed in 1988 [13]. It measures the perception and expectations of consumers in five dimensions of tangibility, reliability, responsiveness, assurance, and empathy [14]. Another method is KANO model developed in the late 1970s. Based on this model, identification of product attributes

affecting customer satisfaction can improve the quality of services which is defined in the context of customer needs. Kano model is appropriate for service quality assessment [15-17]. The first attribute in this model is “threshold”, indicating basics that customers expect. The second attribute is “performance” which has a direct relationship with customer satisfaction and can improve or reduce it. The last attribute is “excitement” whose presence can increase customer satisfaction; however, their absence does not lead to dissatisfaction [18, 19].

Thus, the study aims to determine the possible gap in the services provided to the patients by public hospitals in Iran. The research questions are:

1. What is the patients’ level of expectations on the services provided in the study hospitals based on SERVQUAL model?
2. What is the patients’ level of satisfaction with the services provided in the study hospitals based on SERVQUAL model?
3. How much is the service quality gap in the study hospitals based on SERVQUAL model?
4. How much is the difference in service quality gap between the study hospitals?
5. How much is the importance of the five dimensions of SERVQUAL model based on the Importance-Performance Analysis (IPA) matrix?
6. What are the critical points of the quality in the study hospitals?
7. Which of the patients’ expectations have been met based on the Kano model?

Materials and Methods

This is an analytical study with cross-sectional design conducted for at least 48 hours from October to November 2017. The study population consists of all patients aged >18 years hospitalized in seven hospitals (n=3781) affiliated to Guilan University of Medical Sciences in Rasht, Iran. To select the samples, a two-stage probabilistic sampling method; the first stage was stratified sampling, and in the second stage a convenience sampling was performed from among the patients in each hospital who, after at least 48 hours of hospitalization, had performed administrative work related to discharge and had not yet been discharged from the hospital. To

determine the sample size, Cochran’s formula was used, considering and error value of 0.05 and a Standard Deviation (SD) of 0.415 for the mean satisfaction score based on a pilot study on 30 samples and calculation of the variances for each five dimensions of SERVQUAL model. The sample size was obtained 248. In this regard, 300 questionnaires were distributed and 250 returned completed.

The questionnaire has three sections; the first section surveys demographic characteristics (age, gender, education). The second section is the standard 21-item SERVQUAL questionnaire with five dimensions of tangibility, reliability, responsiveness, assurance, and empathy [20]. The last section is the standard 25-item KANO questionnaire with four quality categories of attractive, one-dimensional, reverse, and indifferent requirements [21, 22]. The scoring was based on a 5-point Likert Scale. The total score of SERVQUAL questionnaire ranges 21-105, and for the KANO questionnaire it ranges 25-125 points. The reliability using Cronbach’s alpha coefficient was obtained 0.77 for the SERVQUAL questionnaire and 0.72 for the KANO questionnaire.

In order to identify the importance of quality attributes to help us decide better, the IPA method was used. It has four quadrants, each suggesting a specific strategy to improve the decision-making process [12]. This matrix measures each of the five dimensions of SERVQUAL model in each hospital in four areas: Possible Overkill (in this case, the current procedures should be stopped and a fundamental change should be done), Low Priority (respondent ignores the relevant attribute and there is no need to be concerned), Critical (requires special attention and the performance is low), and Keep Up the Best Status. It can help improve the decision-making in managers and officials.

After obtaining an ethical approval and informed consent, the questionnaires were completed by the patients. To analyze the collected data, Kolmogorov-Smirnov test was first used to determine the normality of data distribution, which indicated that the distribution was not normal. Then, the Wilcoxon test was used. In this study, the Excel 2013 software was used for data entry, Statistical analysis was performed in SPSS v.25 software, and the IPA was performed in Minitab 2018 software.

Results

The results showed that the majority of patients were male (53%), with a bachelor’s degree (32%) aged 40-59 years (38%). The overall mean score of patients’ expecta-

tions and perceptions based on SERVQUAL model were 3.614 ± 0.76 and 3.735 ± 0.61 , respectively. The mean score of patients' expectations in five SERVQUAL dimensions of tangibility, reliability, responsiveness, assurance, and empathy, the mean scores were 4.121 ± 1.09 , 3.43 ± 1.51 , 3.207 ± 0.69 , 3.393 ± 0.42 , and 3.913 ± 0.42 , respectively. The mean score of patients' perceptions in the five dimensions were 3.62 ± 0.29 , 3.7 ± 0.32 , 3.601 ± 0.71 , 3.811 ± 0.31 , and 3.944 ± 0.98 , respectively.

The status evaluation of SERVQUAL dimensions in the seven hospitals shows that assurance and responsiveness were at the lowest level, while empathy and tangibility were at the highest level (Table 1). In order to calculate the gap between expectations and perceptions, the Wilcoxon test was used whose results showed that the service quality gap was significant only in the first and third hospitals. In the first hospital, the gap was significant in all dimensions except in the tangibility dimension (Table 2).

Table 1. Mean $\pm$ SD of patients' expectations and perceptions

Hospital No.	Mean $\pm$ SD									
	Expectations					Perceptions				
	Tangibility	Reliability	Responsiveness	Assurance	Empathy	Tangibility	Reliability	Responsiveness	Assurance	Empathy
1	4.25 $\pm$ 0.35	2.85 $\pm$ 0.42	2.80 $\pm$ 0.76	3.46 $\pm$ 0.53	3.99 $\pm$ 0.11	3.69 $\pm$ 0.83	3.68 $\pm$ 0.37	3.66 $\pm$ 1.03	3.9 $\pm$ 1.12	4.11 $\pm$ 1.98
2	4.320 $\pm$ 0.63	2.88 $\pm$ 0.54	2.77 $\pm$ 0.49	3.28 $\pm$ 0.51	3.91 $\pm$ 0.3	3.63 $\pm$ 0.14	3.77 $\pm$ 0.21	3.68 $\pm$ 0.19	3.91 $\pm$ 0.49	4.10 $\pm$ 0.48
3	4.22 $\pm$ 0.89	2.84 $\pm$ 0.49	2.94 $\pm$ 0.48	3.25 $\pm$ 0.76	3.81 $\pm$ 0.21	3.69 $\pm$ 0.59	3.73 $\pm$ 0.36	3.58 $\pm$ 0.69	3.78 $\pm$ 0.99	4.15 $\pm$ 0.35
4	4.21 $\pm$ 0.74	3.67 $\pm$ 0.97	3.62 $\pm$ 0.53	3.48 $\pm$ 0.69	4.03 $\pm$ 0.36	3.73 $\pm$ 0.43	3.94 $\pm$ 0.42	3.58 $\pm$ 0.55	3.81 $\pm$ 0.47	3.75 $\pm$ 0.94
5	4.23 $\pm$ 0.59	4.23 $\pm$ 0.35	3.83 $\pm$ 0.76	3.56 $\pm$ 0.41	4.03 $\pm$ 0.28	3.73 $\pm$ 0.28	3.94 $\pm$ 0.49	3.48 $\pm$ 0.44	3.78 $\pm$ 0.69	3.72 $\pm$ 0.74
6	3.88 $\pm$ 0.71	3.36 $\pm$ 0.77	3.3 $\pm$ 0.69	3.19 $\pm$ 0.47	3.71 $\pm$ 0.69	3.71 $\pm$ 0.98	3.71 $\pm$ 0.37	3.59 $\pm$ 0.62	3.78 $\pm$ 0.56	3.87 $\pm$ 0.69
7	3.76 $\pm$ 0.42	4.23 $\pm$ 0.91	3.19 $\pm$ 0.47	3.53 $\pm$ 0.83	3.91 $\pm$ 0.41	3.16 $\pm$ 0.47	3.13 $\pm$ 0.18	3.64 $\pm$ 0.39	3.72 $\pm$ 0.67	3.91 $\pm$ 0.15
Total	4.12 $\pm$ 1.09	3.43 $\pm$ 1.51	3.20 $\pm$ 0.69	3.39 $\pm$ 0.42	3.91 $\pm$ 0.45	3.62 $\pm$ 0.29	3.7 $\pm$ 0.32	3.60 $\pm$ 0.71	3.81 $\pm$ 0.31	3.94 $\pm$ 0.98
Total Mean $\pm$ SD			3.61 $\pm$ 0.76					3.73 $\pm$ 0.61		

Table 2. The service quality gap in study public hospitals based on SERVQUAL dimensions

Hospital No.	Expectations & Perception										Total	
	Tangibility		Reliability		Responsiveness		Assurance		Empathy			
	Gap	Sig.*	Gap	Sig.*	Gap	Sig.*	Gap	Sig.*	Gap	Sig.*	Gap	Sig.*
1	-0.56	0.05	0.83	0.01	0.86	0.09	0.44	0.01	0.12	0.06	0.36	0.04
2	-0.68	0.01	0.89	0.01	0.92	0.01	0.63	0.02	0.19	0.05	0.39	0.05
3	-0.53	0.02	0.85	0.01	0.64	0.03	0.53	0.04	0.34	0.04	0.37	0.04
4	-0.48	0.04	0.27	0.24	-0.04	0.42	0.33	0.02	-0.28	0.01	-0.04	0.21
5	-0.5	0.04	0.29	0.02	-0.34	0.04	0.31	0.02	-0.32	0.02	-0.23	0.22
6	-0.17	0.03	0.36	0.04	0.29	0.01	0.59	0.02	0.16	0.01	0.26	0.20
7	-0.59	0.04	-1.1	0.01	0.29	0.01	0.45	0.01	0.2	0.01	-0.22	0.21

*Wilcoxon test

Table 3. Comparison of service quality in studied hospitals based on the four quadrants of IPA matrix

Hospital No.	Quadrants of the IPA Matrix			
	First: Best Status	Second: Critical	Third: Low Importance	Fourth: Stop, Possible Overkill
1	B	A,E	C	D
2	E	A	B,C	-
3	E	A	B,C,D	-
4	-	AE	C	B,D
5	AB	E	C	D
6	E	A	B,C	D
7	E	A,B	-	C,D

A: Tangibility; B: Reliability; C: Responsiveness; D: Assurance; E: Empathy

Using the IPA method for examining the importance of each of SERVQUAL dimensions in each hospital, the results revealed that the dimensions of tangibility and empathy in hospital no. 1 were in a critical situation with the highest importance and lowest performance level. In the assurance dimension, there was a possible overkill. The reliability and empathy dimensions showed the best performance level and maintaining the status quo. The responsiveness dimension was estimated to have the lowest priority and importance for the patient. In other words, updating efficient equipment, attractive physical facilities, proper appearance of staff, infection-free environment, attention to the patient, adapting working hours with the patient conditions (not changing work shifts at critical hours), nurses' interest in patients, and no compulsion in services were the needs of patients in hospital no.1 (Table 3).

According to Kano model, each attributes of the service quality was examined based on frequency, and the attribute with the highest frequency in terms of four categories (attractive, one-dimensional, reverse, and indifferent) requirements was considered as the indicator of the type of service quality. For example, in item no. 25 of Kano questionnaire (i.e., demanding the best benefits for patients from the management and staff in hospital), 93 patients reported it attractive; 70 reported it one-dimensional; 31 reported it reverse, and for 56 patients it was indifferent (Table 4). Since the most of patients (93%) reported it attractive, the attribute was classified as attractive. Other attributes were classified in the same way. As can be seen in Table 4, 13 out of 25 quality attributes were classified as attractive, 11 as one-dimensional, and only 1 as reverse. The one remaining attribute which was

reported indifferent (i.e., dissatisfaction regardless of whether the quality is achieved or not) was not classified.

Discussion

Regarding the level of SERVQUAL dimensions, the results of our study showed that the service quality gap was lower in tangibility dimension compared to other dimensions, which can be due to patients' expectations of being treated in a cleaner and tidier place as well as their expectations from the Health Transformation Plan. According to the extensive announcements in the hospital bulletin boards and ethical charter, the quality gap in responsiveness dimension was positive and ranked second among SERVQUAL dimensions. In the empathy dimension, there was a positive service quality gap in all hospitals except in hospitals no.4 and no.5, and were almost in line with patients' minimum expectations. The public hospitals with a positive quality gap in this dimension showed that patients always tended to receive special attention and expected staff to be able to identify their needs.

These hospitals were able to fulfill their promises accurately and consistently. In terms of assurance dimension, none of study hospitals had negative quality gap, indicating the proper knowledge and skills of staff and organization in creating a sense of trust and confidence in patients. In overall, the study public hospitals were in a critical situation regarding tangibility issue with the highest importance and lowest performance level. In terms of empathy, we recommend the current situation. Reliability and responsiveness had a low priority. More attention had been paid to the assurance issue. Less concentration is needed on it, and is suggested

Table 4. Types of service quality based on Kano model categories

Items	No. (%)				Types of Service Quality
	Indifferent	Reverse	One-dimensional	Attractive	
observance of sanitary by the service Staff	51 (20.4)	43 (17.2)	80 (32)	76 (30.4)	One-dimensional
Neat and tidy appearance of all hospital staff	65 (26)	49 (19.6)	55 (22)	81 (32.4)	Attractive
Proper arrangement of hospital equipment (e.g., beds, decorations, wardrobes) and rooms	40 (16)	60 (24)	76 (30.4)	74 (29.6)	One-dimensional
Performing services on time (prompt admission, timely presence of doctor, hospitalization in a suitable room)	53 (21.2)	67 (26.8)	60 (24)	70 (28)	Attractive
Fixing possible problems and shortcomings by staff in a timely manner	47 (18.8)	44 (17.6)	81 (32.4)	78 (31.2)	One-dimensional
Appropriate working hours for staff in the hospital to provide services	18 (7.2)	51 (20.4)	74 (29.6)	107 (42.8)	Attractive
Ease of access and contact with the hospital and no busy phone lines	18 (7.2)	51 (20.4)	74 (29.6)	107 (42.8)	Attractive
Feeling emotionally comfortable after being in the hospital	40 (16)	61 (24.4)	106 (42.4)	43 (17.2)	One-dimensional
Proper fulfillment of Health Transformation Plan for patients	23 (9.2)	79 (31.6)	104 (41.6)	44 (17.6)	One-dimensional
Use of signs and warnings to increase patient information in the hospital	33 (13.2)	80 (32)	83 (33.2)	54 (21.6)	One-dimensional
Use of modern equipment in the hospital	44 (17.6)	55 (22)	83 (33.2)	68 (27.2)	One-dimensional
Employees' interest in providing services to patients such as wheelchairs and european toilets	33 (13.2)	68 (27.2)	77 (30.8)	72 (28.8)	One-dimensional
Employees' ability and interest in responding to patients' complaints	33 (13.2)	63 (25.2)	74 (29.6)	80 (32)	Attractive
Employing specialized staff	54 (21.6)	46 (18.4)	67 (26.8)	83 (33.2)	Attractive
Providing clear and complete information to the patient at the time of admission, and information on possible cost rates	38 (15.2)	43 (17.2)	77 (30.8)	92 (36.8)	Attractive
Speed of service delivery in the hospital	45 (18)	64 (25.6)	63 (25.2)	78 (31.2)	Attractive
Informing patients about the end date of hospitalization	44 (17.6)	43 (17.2)	77 (30.8)	86 (34.4)	Attractive
Appropriate location of the hospital	31 (12.4)	40 (16)	68 (27.2)	111 (44.4)	Attractive
cleanliness of the whole hospital	33 (13.2)	53 (21.2)	72 (28.8)	92 (36.8)	Attractive
Possibility of filling the admission online early before going to the hospital	54 (21.6)	90 (36)	48 (19.2)	58 (23.2)	Reverse
Creating trust, physical and financial security in the patient by the hospital staff	30 (12)	60 (24)	89 (35.6)	71 (28.4)	One-dimensional
Appropriate location and distribution of hospitals in the city	28 (11.2)	63 (25.2)	66 (26.4)	93 (37.2)	Attractive
Suitable food for the patient	39 (15.6)	58 (23.2)	78 (31.2)	75 (30)	One-dimensional
Having enough staff to provide timely services	30 (12)	67 (26.8)	98 (39.2)	55 (22)	One-dimensional
Demanding the best benefits for patients from the management and staff in hospital	56 (22.4)	31 (12.4)	70 (28)	93 (37.2)	Attractive

that hospitals spend their energy on other dimensions, especially the tangibility dimension. In other words, efforts should be made to maintain the appearance and attractiveness of staff, and to update the necessary and efficient equipment for patients.

In the study hospitals, each of service quality dimensions were at different conditions based on the IPA matrix. In one hospital, one of service quality dimensions was in the "Concentrate Here" quadrant, and in another hospital it was in the "Keep Up the Good Work" quadrant. Moreover, most of the study hospitals were at a favorable status in terms of assurance, (knowledge and

skills of staff and their ability to build trust, confidence, and assurance in patients), which indicates appropriate in-service training and excellent organizational culture among public hospital staff in Rasht, Iran. Another result was the high expectations of patients, regardless of their perceptions, about "Intimacy and empathy with the patient and paying special attention to the patient" related to the empathy dimension. All hospitals had experience in all four quadrants of the IPA matrix in terms of reliability; i.e., the ability of the hospital to fulfill its promises accurately and consistently."

By evaluating the critical points in the quality of services provided by the study hospitals, it was found that the critical point was «quality», where there was high importance and low performance level; therefore, it should be prioritized as soon as possible so that basic measures can be taken to improve its quality. In most of the study hospitals, we detect a favorable situation in the empathy dimension, while all hospitals were in a critical situation in the tangibility dimension.

A theoretical review on the service quality of the hospitals revealed that factors such as patients' age [23], education [24], quality of nursing care, giving appropriate information to the patients and their companions, appropriateness of equipment/tools and the surgical ward space [25], choosing a service provider, communication and interaction, having authority, continuity of services, quality of basic facilities, respect, prompt and timely attention, safety, prevention, accessibility, trust [26], equipment and facilities, environmental health, care, behavioral aspects [27], pre-discharge training, and speed of service delivery [28] can lead to greater patient satisfaction. On the other hand, studies by Gholami [28] and Abooei [29] who used the SERVQUAL model to assess patient satisfaction concluded that the quality of services perceived by patients in hospitals was not what they expected and needed to be improved.

The strength of the study hospitals was in the empathy dimension, where they had highest performance and it had the highest importance for patients according to the IPA matrix. It seems that, despite the critical situation, it is possible to create a better condition in terms of the relationship between hospital staff and patients by providing training in psychological methods of communicating with the patient. According to the identified critical dimensions, strategies such as using appropriate equipment, improving the physical environment of the hospital, human resource management, the motivation and organizational commitment of staff, and developing some hospital

protocols can reduce the observed gap in service quality and increase the patient satisfaction with services.

The findings of this study showed the urgent need to develop patient-centered strategies and obtain patient satisfaction in various fields to improve service quality. Establishing a protocol in which everyone takes responsibility for patient satisfaction is essential before taking any action. According to patients in our results, appropriate location of the hospital, proper working hours of staff to provide services, ease of access and contact with the hospital and no busy phone lines were the most attractive types of provided services. Kashkooli also reported a significant relationship between perceptions and expectations of patients [19]. Therefore, it is suggested that hospitals use the above mentioned strategies to assess the quality of their services and provide grounds for improving its quality.

Combining the SERVQUAL model with multi-criteria decision-making methods for ranking hospitals is another suggestion. Although the quality of services in most of the study hospitals was somehow far from the ideal level, it can be said that they had acceptable service quality; however, it is not fair to ignore the patients' true attention to the questions and limited budget of the Ministry of Health for obligation of providing extensive services throughout the country and its widespread coverage. The results of this study can inform service providers about the needs of patients to increase the quality of their services and meet these needs. The positive gap in all dimensions of service quality, except in tangibility, indicates the general satisfaction of patients with governmental services. The overall mean gap (+0.13) indicates that public hospitals in Rasht city had provided services with a quality beyond the patients' expectations.

Conclusions

Applying the results of this study in the implementation of the Health Transformation Plan in Iran can develop a model in accordance with the real and more practical conditions for improving the quality of services in hospitals and, thus, can eliminate the weaknesses related to quality and strengthen the positive points, and even provide services with a quality higher than the patients' expectations. The results of the present study can help policymakers and stakeholders in hospitals to take effective measures.

Ethical Considerations

Compliance with ethical guidelines

This study approved by the Research Ethics Committee of Guilan University of Medical Sciences (Code: IR.GUMS.RF.C.2017.87).

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Authors' contributions

Conceptualization, first draft preparation: Mahnaz Hemmati Nodoust Gilani, Fardin Mehrabiyan; Investigation: Fardin Mehrabiyan; Data analysis: Alireza Alma'and, Mahnaz Hemmati Nodoust Gilani; Editing & review: All authors.

Conflict of interest

The authors declared no conflicts of interest.

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