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DESIGNING A MODEL FOR CUSTOMER SATISFACTION IN EDUCATIONAL HOSPITALS

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ABSTRACT

Creation and implementation of systems to measure customer satisfaction as the most important indicator to improve performance is considered as one of the basic needs of today's organizations, especially in the health care system. The aim of this study was to design a model to measure customer satisfaction in medical and educational centers.
Materials and Methods: This study identified factors that influence customer satisfaction using a systematic review of the literature and focus group discussions with clients, staffs, administrators and physicians and it is presented in the form of customer satisfaction using a panel of experts. As well as assessment questionnaire of customer satisfaction was designed to evaluate the status of medical and educational centers in Tabriz.
Results: The offered model has two aspects: (A) Factors related to the patient, including demographic, socio-economic variables, expectations, health status; (B) Factors related to health system including quality of service, service features, hospital characteristics, satisfaction with the service provider. The mean of patient satisfaction in hospitals in our study was 75.09% (SD = 12.1) and its minimum was 36.46% and its maximum was 98.96%.
Conclusion: Health policy makers and hospital administrators need to attract the satisfaction of both internal and external customers and increasingly identify their needs in order to improve their performance. Satisfaction is subject to change over time. Therefore, it is suggested that managers continually monitor and control it. Finally, the concept of satisfaction is multidimensional and subjective and the impact of each factor in each hospital is specific for it and it depends on culture, hospital's specialty, demographic, economic and social variables, etc.

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Introduction

Organizations that provide excellent services for their clients have several important features. As they pay much attention to their customers' demands, needs and expectations. These organizations develop the strategy to provide quality services for customers and design a system that behaves well with clients and customers at any stage [1].

The official system of country severely suffers from fundamental damages and problems in such a way which is systematically damaged severely and its growth potential has been taken over. Although reforming this system has a long debate in the country, its practical aspect has been less considered [2, 3]. Researches and studies have shown that any scientific research has not been conducted from the date of adoption and implementation of "clients honor program" so far (after 11 years) that examines the views of all stakeholders (internal and external customers) of this plan and evaluates the reasons for the failure of some government agencies, including the university hospitals of medical sciences which are among ten low-interest entities (65.97%) according to statistics provided by the headquarters of client honor program [4].

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On the one hand, organizations failed in achieving the goals of the project (customer satisfaction), and the other hand, service providers inform that with respect to the approved honor program, the interests of clients are preferred over the interests of organizations and service providers; and internal customers has been ignored which the lack of attention challenges organization's success in this regard because they feel to be controlled and monitored as tangible and intangible by inspectors from special committees under the supervision of organization's managers and higher authorities are easily questioned [5].
But the question that arises here is that what approaches and mechanisms will executives of the plan use for the design and evaluation of the plan and the results of its application? The fact is that, despite many strengths of this plan, it is clearly felt a vacuum of approach or mechanism to design and evaluate it.
Heidari (2007) concluded that spending more time in the office by physicians can cause more attention to clients and provide the means of their satisfaction. As well as using the model of patients' satisfaction from physicians can be effective to deliver better medical care and on the one hand, it can improve the patients' health level and on the other hand, it can enhance physician leadership role in leading public health and it can promote the role of the physician in society [6]. Mirfardi and Bostani (2001) concluded that the final score of the subscriber household respondents' satisfaction score was 3.1 out of five that can be stated that subscribers' satisfaction is moderate to high [7]. Kapp and Propp (2002) concluded that the existence of communication between person and parents or workers, the availability of workers, feeling respected by the service system, involving parents in decision-making and recognition of the right to adequate information about the system, as well as performing survey to obtain service customer satisfaction rate are among factors influencing service clients' satisfaction [8]. Kamal Latifi Ghormish (2006) acknowledges that the honor program as a client-oriented strategy towards creating administrative change needs to give priority consideration to internal customers by empowering, supporting and motivating service providers through efficient management practices that continuous quality improvement of services can be achieved through gaining their satisfaction as well as external customer satisfaction can be drawn [9].
Due to the problems presented above and the absence of a comprehensive model of customer satisfaction in the health care system, especially hospital system; this research aimed to study this issue with a new approach and to identify effective factors in this area through studying the theoretical principles of customer satisfaction in the world and utilizing the strengths of different models to measure customer satisfaction and client honor program and holding focus group discussions (FGD) with customers in educational centers (administrators, physicians, clients and employees) and also to analyze the gap of their expectations and perceptions in order to develop proper models and tools that clearly reveal performance gaps. In this regard, designing a model for measuring customer satisfaction in medical and educational centers as a general model and measurement tool is designed and presented using the literature review and focus group discussions.

Materials and methods

The study is a survey study because of its nature. Research method is practical in terms of purpose and it is descriptive-exploratory study in terms of the process of data collection. As well as this research in terms of results is practical and in terms of time is cross-sectional. Finally, it is a consolidated research (quantitative-qualitative) in terms of the implementation process. The study population consisted of all external customers (clients) and internal customers, both clinical and non-clinical (administrators, physicians, nurses and staffs) of medical and educational centers affiliated to Tabriz University of Medical Sciences, officials for clients honor program from Staff and Deputy Treatment of Tabriz University of Medical Sciences and experts and researchers in the field of customer satisfaction in the Faculty of management and information in Tabriz University of Medical Sciences in the city of Tabriz in 2016. The research sample consisted of 7 clients, 10 staffs, 8 administrators, 6 physicians, and 8 experts in debating satisfaction and client honor. The number of at least 30 patients in medical and educational centers affiliated with Tabriz University of Medical Sciences was considered in order to obtain reliability and indicator ICC; ultimately, the questionnaires were distributed among 50 patients of medical and educational centers affiliated to Tabriz University of Medical Sciences that formed the sample size in this study; in the section of assessment of customer satisfaction status in medical and educational centers, the sample size was estimated at least 384 cases according to Morgan table. Ultimately, 400 patients of medical and educational centers affiliated to Tabriz University of Medical Sciences formed the study sample. The data were collected through the focus group discussions (FGD) method, the expert panel method, and the customer satisfaction questionnaire. Data analysis includes a phenomenological approach, descriptive statistics methods and reporting quantitative variables description according to central distribution and proportional dispersion statistics (mean and standard deviation, etc.); and reports of frequency and relative frequency were used for qualitative variables. Independent t-test was used for binary variables and analysis of variance test (ANOVA) was used for variables with more than two cases in order to realize significance and relationship building. Tables and graphs are used in the basis of the need to summarize data. Software SPSS21 was used in all analyses. $P<0.05$ was considered significant.

Results

The views of the groups were compared with each other and the results are merged together after holding and analysis of focus group discussions with all stakeholders in customer satisfaction (clients, employees, managers and physicians) for further investigation and clarification of the differences. Finally, after the incorporation of the views of all groups, 3 areas and 13 main themes and 43sub-themes were obtained. The final model was eventually adopted as shown in Figure 1.

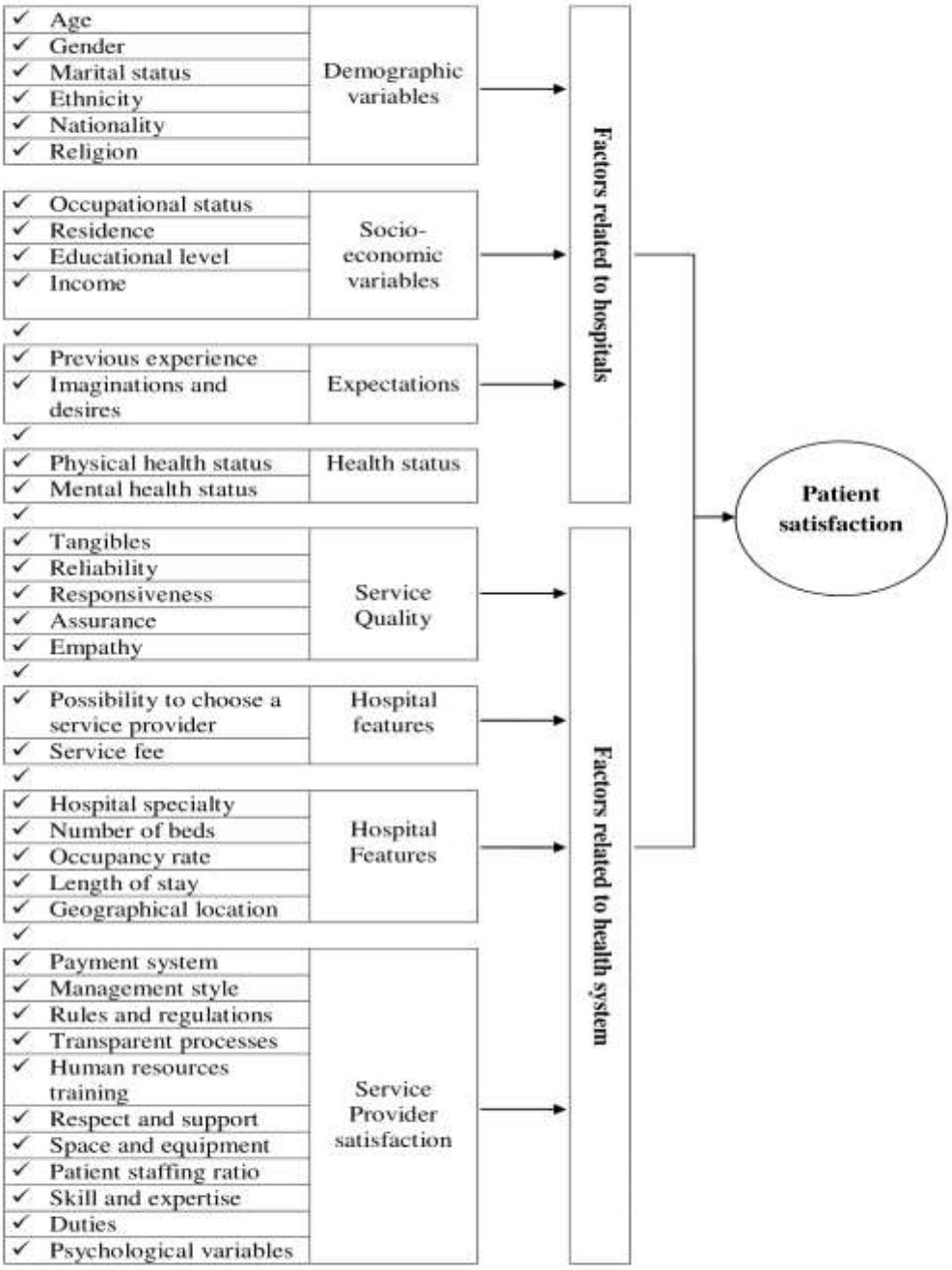

Figure 1. The final model of customer satisfaction in medical and educational centers

At this stage, the questionnaire of the assessment of patient satisfaction was developed using final model approved by a panel of experts. In order to obtain the stability of the questionnaire, the researchers collected data from three of medical and educational centers (Shahid Madani, Imam Reza (AS), and Sina) affiliated to Tabriz University of Medical Sciences. The sample size was at least 30 people to obtain stability; therefore, the researcher collected data of 50 samples. The collected data were entered into SPSS software and Cronbach's alpha value was 0.95 for the stability of the questionnaire for 50 people (α=0.95).

To determine the index ICC, the questionnaire was filled by 30 previous individuals and the ICC index value was 0.78 that approved the reliability (ICC = 0.78).

In the following, descriptive results of the research and analysis of variance to assess the significance and the relationship between mentioned variables and patient satisfaction will be reported.

The age of 34% of patients was less than 30 years, 32.8% was 31-51 years and 33.3% was above 52 years. 56.8% were male and 43.3% were female. In the case of marital status, 64.8% were married, 22.8% were single and 12.5% were in other groups (widowed or divorced). About ethnicity, 72.3% were Azari, 17.3% were Kord, 9.8% were Fars and 0.8% was in other ethnicities. In the religious dimension, 83.3% were Shia and 16.8% were Sunni. Socio - economic status of subjects was as follows: About job, 13.8% were employees, 7.5% were workers, 14.8% had free jobs, 6.8% were unemployed, 22.8% were housewives, 15% were students and 19.5% had other jobs. About location, 77.9% lived in urban areas and 22.1% lived in rural areas. About the native state, 80.8% were native of East Azarbaijan and 19.3% were non-native. In the case of education, 29.3% were illiterate, 28.3% were under diploma, 24.3% had diploma and higher diploma, 13% were bachelor and 5% had master's degree and higher master. In the case of income, 81.8% of samples had monthly income of under a million Tomans, 11.5% had monthly income of 1-2 million Tomans and 6.8% had monthly income of more than three million Tomans. 72.8% of subjects had a history of hospitalization and 27.3% had no history of hospitalization. 71.5% of patients had a history of hospitalization in the same hospital and 28.5% of them had a history of hospitalization otherwise. 20.3% of patients were hospitalized in intensive care units (ICU), 23% were hospitalized in interior wards and 56.8 of them were hospitalized in surgical wards. 51.4% of patients stayed less than two days, 24.8% of them stayed in hospitalization for 3-4 days and 23.8% of them stayed over 5 days in the hospital.

Average patient satisfaction in hospitals in our study was 75.09% (SD = 12.1) and its minimum was 36.46% and its maximum was 98.96%. Table 2 shows the analysis of variance for different hospitals.

Table 1. Analysis of variance for different hospitals

Hospital	Number of Beds	Bed occupancy rate	Length of hospitalization	Mean	N	Std. Deviation
Nikokari	83	51%	1.9	76.33	70	10.87
Imam Reza (AS)	646	83%	4.5	73.61	70	13.06
Shohada	223	78%	2	77.17	70	11.34
Shahid Madani	255	83%	3.5	74.55	70	12.64
Sina	272	72%	4.3	75.32	70	12.29
Al-Zahra	182	87%	2.1	72.97	50	12.25
Total	277	77.33	3.05	75.09	400	12.1

The results of analysis of variance showed that the average of satisfaction had no significant difference between the different hospitals (P-value=0.354). Between satisfaction and the number of hospital beds was not observed a significant difference (p-value=0.354). Between satisfaction and the bed occupancy rate was not a significant difference (p-value=0.255). There was no significant difference between satisfaction and average length of stay in hospital (p-value=0.118). No significant difference was observed between satisfaction and respondent (p-value=0.633). There was no significant difference between satisfaction and the patient's age (p-value=0.415). There was no significant difference between satisfaction and gender (p-value=0.886). No significant difference was observed between satisfaction and marital status (p-value=0.306). No significant difference was observed between satisfaction and ethnicity (p-value=0.213). No significant difference was observed between satisfaction and religion (p-value=0.018). There was no significant difference between satisfaction and job (p-value=0.546). No significant difference was observed between satisfaction and location (p-value=0.704). No significant difference was observed between satisfaction and indigenous status (p-value=0.412). No significant difference was observed between satisfaction and education (p-value=0.905). No significant difference was observed between satisfaction and income (p-value=0.888). No significant difference was observed between satisfaction and hospitalization ward (p-value=0.890). No significant difference was observed between satisfaction and length of stay in hospital (p-value=0.082). No significant difference was observed between satisfaction and history of hospitalization (p-value=0.807). There was no significant difference between satisfaction and history of hospitalization in the same hospital (p-value=0.189).

Discussion and conclusion

Measuring customer satisfaction is important for quality assurance because satisfaction may affect health outcomes. The importance of satisfaction has been noted by many researchers as a factor affecting the use of health, acceptance or health outcomes, but there is little evidence in this regard and we only mention the implied relationship here. Continuous quality improvement requires regular feedback from consumers about their perceptions about the quality of care. This study provides evidence on customers' evaluation about the factors affecting satisfaction.

The results of the systematic review showed that individual factors influencing patient satisfaction include: expectations, health status, demographic and socio-economic variables. As well as, systemic factors influencing patient satisfaction include: service quality, hospital features, personnel satisfaction, insurance and costs. The results of focus group discussions showed that if we compare stakeholders with each other in terms of the main themes, the client group considered the main themes including health, expectations, experience and demographic variables more important than other groups. In contrast, among the socio-economic variables only sub-theme of "financial condition" was important for clients, but other groups did not refer to it. At the same time, the cultural dimension and knowledge and education level about health issues was important for other groups other than the client. In honor dimension, which includes respect and dignity for patient and correct relationship with clients, all groups had the same attention to this issue. In empathy aspect, clients and staffs groups had similar views and they required understanding the social needs of patients, patient participation in decision-making and special and individual attention to patient empathy with clients. But managers and physicians did not mention engaging patients in decision-making. In the response dimension, sub-theme of responding to patients was important for groups of clients, staffs and physicians; and sub-

theme of giving knowledge and information to patients was also important for groups of managers and clients. In confidence aspect, building trust in patients is important for all groups. Observing patient privacy was mentioned by all groups other than physicians. Instill a sense of security to the patient is only important for the staffs. In the service quality aspect, all groups paid special attention to sub-theme of providing high-quality services by providers and providing timely services to patients. While the standard waiting time was only important for physicians and physicians noted providing service to patient beyond his expectations other than other groups. In the management aspect, groups of staffs, managers and physicians considered the appropriate leadership style important in the organization and appointment and hiring depends on the expertise of staffs. The existence of monitoring system and evaluating human resources was important just for managers and physicians, while the existence of promoting system of career path of employees was important for staffs. Physicians considered competition between service providers important and clients and staffs considered the importance of reducing the cost for patients in this context. In the space and equipment dimension, all groups considered the presence of appropriate physical space and equipment in the organization very important, while environment cleanliness and sanitation in organization were important only for clients and staffs. In human resources aspect, the presence of adequate manpower in organization and honor and support of service providers was mentioned by all groups. Mentally good condition of service provider by clients and physicians groups, the existence of professional accountability and expertise by clients and managers, the presence of education and empowerment of human resources by all groups except clients group, the existence of monitoring and evaluating system of human resources by staffs group, cultural level of service providers by staffs and managers and having clear job descriptions by physicians group were considered important in the field.

As it was observed, factors related to patients were commonly more important for patients; factors related to provider were more important for providers; and factors related to system were important for all groups of patients and providers. Although largely the opinions overlap to each other, there are clearly differences of opinions in terms of customer satisfaction. One-dimensional looking at the issue arises after a gap of performance in this field. Multidimensional view to the satisfaction topic and integrating perspective of all stakeholders give us a broader view in which a model is presented that all groups have agreed on it and their interests are guaranteed. In our model, demographic variables are among the factors related to patient. In many studies, the role of demographic variables was measured associated with satisfaction, including age, gender, marital status, ethnicity, nationality and religion. Significant and non-significant demographic variables vary depending on the different studies. Some studies have reported that as much as the age is higher, the satisfaction is increased as well [10-12]. This may be because older people are more patient and have more respected position for providers. Or having previous experiences in the health field may lower their expectations when standards are lower than usual. The study of [13] showed that married people have lower satisfaction than single people. But they were not significantly different in our study.

The role of socio-economic variables like demographic variables was measured in most studies, including job, location, education level and income. These variables such as demographic variables, their significance and insignificance vary in various studies. Some studies have concluded that there was a statistically significant negative relationship between satisfaction and education level, which means that the satisfaction is reduced by increasing the education level [14-16]; while in our study there was no significant relationship between education level and satisfaction. There was no significant relationship between income and satisfaction in our study, while others indicated that there was a significant negative correlation between these two factors[17]. In our study, there was no significant relationship between location and satisfaction. Our study results showed that there is no significant relationship between job and satisfaction, while other studies in this area showed a significant positive relationship [17, 18]. This may be due to the fact that the higher education level, more income, urban location and employments have higher critical thinking and known expectations. While other groups may have less information about health standards; so some factors related to patient are unchangeable or do not have the ability to be changed in the short term.

Expectations are referred to the level of quality that customers expect to receive, and usually they return to the customer's previous experiences in relation to the products and services of desired company or similar products and services of other companies [19]. Satisfaction is a good feeling that is felt after receiving the goods or service. Patients' satisfaction has a direct relationship with meeting their expectations [20, 21]. In other words, if patients receive service in accordance with their expectations, they will be satisfied and if they receive higher than their expectations, they will be surprised. In many customer satisfaction models such as Sweden customer satisfaction model, America customer satisfaction index, Europe index of customer satisfaction, Switzerland customer satisfaction index and Malaysian customer satisfaction index, expectations have been included in the model as an effective indicator. In our study, 71.5% of subjects had a history of hospitalization in the same hospital and this issue raises the loyal or permanent customers, of course if the service is not exclusive. The reason of the high rate of hospitalization at the same hospital in our study seems to relate to be service monopoly not loyalty because the city of Tabriz is the country's western pole and there is little competition in this field because single-specialized hospitals are limited.

Health status can affect satisfaction. Health status factor includes physical health status and mental health status (anxiety and stress). In our study, there is no statistically significant relationship between the hospitalization ward and satisfaction rate. While other studies have showed positive and significant relationship between health status and satisfaction rate; i.e., patients with better health status reported higher satisfaction [10, 11, 22]. To achieve a better understanding of the dynamic relationship between health status and satisfaction with health care is very important to assess this mechanism which is a patient's preliminary satisfaction to the health care outcome then linked in this way.

Service quality factors are related to how to serve and how to deal and behave with patients, including tangible factors, reliability, responsiveness, assurance and empathy [23]. As other studies have shown [10, 11, 21, 22], there is a significant positive relationship between service quality and satisfaction of health care.

Service features are related to market conditions and competition among service providers that includes: possibility of provider selection and service fee. Some studies have shown an inverse relationship between reduced satisfaction and increased costs [14, 18, 24]. With the implementation of the health development plan and insurance coverage for all in our country, this issue has been dissolved significantly, but we are away to reach the ideal level of out-of-pocket payment.

The hospital features such as demographic variables have been mentioned in many studies and they include: hospital specialty, number of beds, bed occupancy rate, average length of hospital stay and access to hospital. In our study, none of these factors had any significant relationship with patient satisfaction. Some studies have shown that there is a statistically direct and significant relationship between length of stay and satisfaction [22, 25, 26]. This may be because patients feel that they have received more attention. As well as, patients have reported higher satisfaction levels in non-surgical sectors [27, 28]. The reason of this factor such as surgical wards suffered more pain as a result of surgery. The number of beds or hospital size has direct relationship to performance [29] and patients in smaller hospitals have shown more satisfied [30]; the reason of this factor could be that patients in larger hospitals involved in commuting between sectors and administrative bureaucracies more than smaller hospitals and patients can recognize all service providers faster in smaller hospitals and establish friendly relations with them.

Human resources (internal customers) are the most important resource of any organization to survive. Therefore, the service provider satisfaction one of the factors that ultimately leads to patient satisfaction (external customer) will be included in the model, including: payment system, management style, rules and regulations, transparent processes, training human resources, honor and support, space and equipment, manpower/patient ratio, skill and expertise, job descriptions and psychological variables. Many studies have noted the role of satisfaction of human resources in patient satisfaction [31, 32]. When organizations are looking for ways to increase and improve services, they are usually looking to increase non-human resources that meet their immediate needs; but a progressive and clever organization revises in any act which had already in communication and interaction with the human resources that can satisfy internal customer at the first step. Satisfaction of human resources was entered as a factor in the model, but related questionnaires should be designed to measure it.

Based on the raised issues, it can be concluded that the measurement of customer satisfaction is important for the quality assurance because satisfaction may affect health outcomes. The importance of satisfaction as a factor affecting the health, acceptance or health outcomes has been noted by many researchers, but there is little evidence in this regard and we only mention the implied relationship here. Continuous quality improvement requires regular feedback from consumers about their perceptions on the care quality. This study has provided evidence on the evaluation of the factors affecting customer satisfaction. In this regard, it has provided requirements for managers and policy makers. To achieve maximum effectiveness, the policies of Medical Sciences universities at regional level and Ministry of Health at national level make being along with each other inevitable. Because achieving macro-healthcare indicators requires strong determination of senior managers. As well as, social welfare and health indicators are the have complement each other and improving the situation in this area provides conditions to achieve the desired level of welfare.

Based on the above findings, it is suggested that we must avoid bias in data in reports and this research is better to be conducted in other hospitals. The experience index must be considered very essential in the expectations aspect. In the area of service quality, they can mostly affect the patient satisfaction by better accountability, trust, empathy, insurance and appropriate physical space and equipment to clients. Senior health managers and policy makers should pay more attention to human resources as the most important source of any organization. It is better that any of the hospitals is evaluated alone using the designed questionnaire in this study and the weaknesses of their performance are revealed to improve their situation by developing related strategy in the respective field.

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