ORIGINAL RESEARCH:
Patient satisfaction and service quality perception at district hospitals in Mongolia

Odgerel Chimed-Ochir [1]

Abstract

Nowadays, consideration of patient satisfaction is an integral part of hospital management across the world and also an essential necessity for healthcare providers. In Mongolia, patient satisfaction is considered a major criterion of quality; however, related data has not been formally collected and published to help with the improvement of the healthcare service quality. Misunderstanding of patients' needs has led to an underutilization of the existing facilities and hindered the overall development of the health system. A challenging issue for healthcare providers is to realize what elements of patients' perception significantly influence on patient satisfaction. Therefore a patient centred study was conducted to identify the service quality perceptions that significantly influenced patient satisfaction in the context of district hospitals in Mongolia. Several elements from the patients' service quality perception were evaluated, and elements which had a significant influence on patient satisfaction were identified. The implications and direction for further research are discussed.

Keywords: District hospitals, Healthcare service quality, Hospital management, Mongolia, Patient perception, Patient satisfaction

Introduction

Issues related to healthcare quality are crucial to any health system anywhere in the world. Many researchers have associated the quality of healthcare with patients' expectations and perceptions of quality, stating that "the quality of services is the ability to meet the customers'/patients' expectation" (Pui-Mun Lee, 2006). Evans & Lindsay (1996) defined the quality of healthcare service as "all characteristics of the service related to its ability to satisfy the given needs of its customers". Therefore, a survey of patients' opinions regarding the provided service is one of the main tools to measure the quality of healthcare services. There is a general agreement that patient satisfaction is an essential component of service quality (Säilä, 2008; Ruyter, 1997, Andaleeb, 2001).

Saia et al. argue that to some degree the effectiveness of healthcare depends on the patients' satisfaction with the provided services. Supporting this view, many studies allege that satisfied patients are more inclined to follow the advice given by doctors, to provide medically relevant information to the provider, and to continue using medical services (Andaleeb, 2000; Andaleeb, 2007).

In Mongolia, the technical aspects of healthcare such as appropriateness of diagnosis and treatment used to be the main target of healthcare service quality. In other words, the quality of healthcare services was solely defined through a provider-based approach. However, upon the reform of the health system in the late 1990s, the concept of patient-oriented services was introduced. Nevertheless, the quality assurance system still focused its attention on the technical aspects of care rather than interpersonal aspects such as communication with patients, willingness to help patients, timeliness and accuracy of services. Although patient satisfaction is now considered a major criterion of quality, this view has still not been reflected in actual plans to improve the healthcare service quality. Misunderstanding of patients' needs has thus led to an underutilization of existing facilities and hindered the overall development of the health system in Mongolia. Nowadays, consideration of patient satisfaction is an integral part of hospital management across the world (Smith, n.d.) and also an essential requirement for providers of healthcare (Choi, 2005). It is also a challenging issue for healthcare providers to realize what elements of patients' perception significantly influence on patient satisfaction.

[1] Health Project, Millennium Challenge Account (MCA)-Mongolia, Ulaanbaatar, Mongolia   e-mail: odko_ch@yahoo.com

Currently, the healthcare service system in Mongolia is characterized by three levels of healthcare services built on the principle of delivering equitable, accessible and quality healthcare services for every person. Family clinics called Family Group Practices are responsible for the primary level of healthcare services. District hospitals which were the targets of our study provide the secondary level of healthcare services to the whole population of Ulaanbaatar city, the capital city of Mongolia. However, district hospitals have not been able to play a gate-keeping role for the inpatients services of tertiary care, as originally planned, and this has resulted in an overload of the latter hospitals.

In 2008, 81.7% of the total health expenditure was spent for inpatient services (Government of Mongolia, 2008). Even though the rate of bypassing district hospitals is high, the average occupancy rate in district hospitals is also very high. It might be that many patients who could be treated at home are being admitted to district hospitals in order to fully occupy the beds (Ministry of Health, 2008). If more attention is paid towards the quality of healthcare services at district hospitals, the rate of bypassing the secondary level to the overloaded tertiary care as well as the number of unnecessary admissions to district hospitals can be decreased. If so, the health expenditure on inpatient services can be reduced and overall, the hospital system can be managed in a more cost-effective manner.

As such, an examination of the patients' satisfaction with services provided in district hospitals could be a good starting point for a transition to patient oriented services and also an effective management of the hospital admission system. Therefore, our study focused on an examination of the patients' perceptions that significantly influence their overall satisfaction with healthcare services provided at the district hospitals of Ulaanbaatar city, Mongolia.

Methodology

The study covers three district hospitals out of nine district hospitals in Ulaanbaatar, namely, Chingeltei District Hospital, Sukhbaatar District Hospital and Bayanzurkh District Hospital. Only primary data were collected from in-patients of the three district hospitals between 1 August, 2009 and 1 November, 2009. Data collectors visited the hospitals two times with an interval of ten days in order to fill questionnaires from newly admitted patients; the 10 day interval was chosen because the average length of stay in the district hospital was 9-10 days (Government of Mongolia, 2008).

The in-patients were individually asked to answer the questionnaires. During each visit, patients were randomly chosen to participate in the study from the list of patients. The list of patients was divided into groups of five and every 5th patient was asked to participate in the study. In cases in which the approached patient did not consent to participate in the study, the researchers would move to the next patient. Due to time constraints, it was not possible to interview more than 6 or 7 patients per day.

Patients eligible for the interview were adults between 18-75 years old who stayed more than 3 days in hospital and were admitted in the department of internal medicine and neurology. The questionnaire consisted of 29 questions with a close similarity to SERVQUAL questionnaire. Items were rated on a 7-point Likert scale varying from strongly disagree (1) to strongly agree (7). Overall satisfaction was rated on a 5 point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

The original plan was to include a sample of approximately 153 patients, given an alpha error rate of 0.05, power of 0.8 and a postulated value of 4. Stata 11 statistical software was used to calculate the sample size. The mean score of 3.66 was used for the hypothesized overall satisfaction in accordance with a previous study conducted in Mongolia (L.Gerelmaa, 2009). Similarly, the standard deviation (SD) was assumed to be 1.5. Finally, 157 questionnaires were collected for data analysis.

To examine the associations among multiple variables related to satisfaction, regression methods can be useful including linear, logistic, and ordinal regression methods (Chen, 2004). However, ordinal regression is the preferred method to obtain valid results in order to study the effect of explanatory variables on all levels of the categorical response variable (Chen, 2004). Therefore, the ordinal regression model was chosen in the data analysis of our study. When using ordinal regression for analysis, logit and complementary log log (clog log) are the main link functions for building models; either method may be used and there are no specific criteria to prescribe which will be a better choice in a given situation. Researchers have therefore recommended using either of them and if the built model does not provide a good fit for the data, trying the alternative method to see if the new model fits the data better (Chen, 2004). Therefore, we used both link functions to find the best model.

Even though there were originally 29 explanatory variables in the study, eight of them were excluded from the model because of collinearity, as it would cause a loss in power and make interpretation more difficult. The tolerance and VIF, which stands for *variance inflation factor,* were tested to check collinearity. The "tolerance" is "an indication of the percent of variance in the predictor that cannot be accounted for by the other predictors, hence very small values indicate that a predictor is redundant, and values that are less than 0.10 may merit further investigation" (Chen, 2003). The VIF is 1 / tolerance and generally, a variable whose VIF value is larger than 10 merits further investigation (Chen, 2003).

In the data analysis of our study, the principle of parsimony was followed. Applying the principle of parsimony to the model is vital (Chen, 2004); what it means is that if fewer explanatory variables can explain the impact of the explained variable, the unnecessary variables should not be included in the regression model. If models contain too many explanatory variables, inaccurate results may appear and result in the instability of the model structure. Based on the principle of parsimony, a reduced model that meets the screening criteria such as assumption of parallel lines, goodness of fit of the model, higher R square and higher accuracy of classification of response categories should be considered as the ideal model. Therefore, a stepwise ordinal regression model was used to apply the principle of parsimony to the model.

Findings and Results

Table 1 shows the characteristics of the sample. The mean age of patients was 46.56 (SD=13.47). Female patients made up 54.8% and males 45.2% of all participants. Fifty one percent of all participants had been educated to high school level and the rest had received college or university education. About 3.2% of all patients were university students, 45.9% worked in either the public or private sector, and 51% were either unemployed or retired.

The number of admissions in hospital varied from patient to patient. Forty-one patients (26.1%) had been admitted for the first time. The highest number of admissions to the hospital among the study subjects was 15 times; the majority had been admitted to district hospitals for 2-7 times. About 17.8% of all participants had been staying from 4 to 5 days in hospital when the questionnaires were collected and 82.2% had been staying from 6 to 10 days. None of the participants of the study had been staying for more than 10 days in the hospital at the time of the interview.

The mean of overall satisfaction was 3.06, with SD of 1.06. Initially, the patients' overall satisfaction was examined through bivariate analysis by their demographic indicator, length of stay, number of admission in hospital and self reported health status. Overall satisfaction didn't significantly depend on age, gender, occupation, education of patients, length of stay in the hospital, self reported health status, and admitted hospitals. The patients admitted for the first time were less satisfied (M=2.56, SD=0.838) compared to other patients. Patients admitted in hospital for more

than 12 times were more satisfied (M=3.5, SD=0.707). The Kruskal-Wallis test showed that there was a statistically significant difference in the means of satisfaction between patients who were admitted in hospital for a different number of times (p=0.005); however, it is not possible to know which groups significantly differed from the other because the Kruskal-Wallis test is limited for post hoc test. Therefore, the interpretation is limited to the conclusion that at least one group significantly differs from another in terms of satisfaction level.

Table 1. The characteristics of the sample

		%
Age	20-30	14
	31-40	22.9
	41-50	23.6
	51-60	25.5
	61-70	8.3
	71 and over	5.7
Gender	Male	45.2
	Female	54.8
Occupation	Student in high school	0
	Student in university	3.2
	Work in public sector	17.2
	Work in private sector	28.7
	Unemployed	26.8
	Retired	24.2
	Other	0
Education	High school	51
	College	7
	University	42
Admitted hospitals	Bayanzurkh	31.8
	Chingeltei	33.8
	Sukhbaatar	34.4
No. of admissions	First time	26.1
	2-4 times	49.7
	5-7 times	12.1
	8-10 times	7
	11 and over	5.1
Length of stay in hospital	4-5 days	17.8
	6-10 days	82.2
Self reported health status	Mild	0.6
	Moderate	66.9
	Severe	32.5

Following the bivariate analysis, the ordinal regression method was used to construct a model over the association of patient satisfaction with the patients' perception of the provided healthcare services in district hospitals. In this study, the overall patient satisfaction was a response variable measured in an ordered, categorical, five- point Likert scale. The explanatory variables included background factors of patients such as age, gender, occupation and

educational status, the number of admissions, length of stay, the admitted hospital, self reported health status, and 29 items about patients' perception. Upon reduction of explanatory variables due to collinearity in the first model, a total number of 22 explanatory variables remained which included the number of admissions and 21 explanatory variables on perception of patients. The variable on the number of admissions was included because it was significantly associated with the overall satisfaction in bivariate analysis. In the first model, the collinearity diagnostic showed that VIF values for eight variables ranged between 10.454 and 24.418 which are greater than 10. Tolerance ranged between 0.041 and 0.096.

The result of the first model with logit function showed a significant difference in the associated regression coefficients throughout the response categories; this implied that the assumption of parallel lines was not valid for the built model (X^2=222.431 with df of 72, p<0.001). An assumption of parallel lines is necessary in order to use the link functions to build ordinal regression models; the analysis may be distorted and a wrong conclusion made unless this assumption can be made (McCullagh, 1980). Therefore the logit function could not to be used; the result from the first candidate model with logit link is not presented. Because the first model with logit link did not satisfy the assumption of parallel lines, a second model was built for ordinal regression using the clog log link. In the resulting model with clog log link function, the built model was shown to be fit according to the model fitting information (X^2(72) =445.781, P<0.001).

The first candidate model with clog-log function satisfied the assumption of parallel lines, and a variance (R^2) of 94.2 could be explained by the significant independent variables. This model showed that the overall satisfaction of the patients was significantly associated with eight explanatory variables regarding perception of patients: Provision of information on hospital service (p=0.004), comfortableness of patients' room (p=0.004), nurses' care (p=0.017), respectfulness of nurses (p=0.031), explanation of procedure done by nurses (p=0.015), routine/daily health check up by doctors (p=0.002), helpfulness of nurses (p=0.025) and attentiveness of doctors to listen to patients (p=0.019). These eight explanatory variables demonstrated positive regression coefficients, which implied that patients who had high perceptions on these variables would probably have a higher overall satisfaction (Table 2).

At the same time, we examined the accuracy of the model's classification results for the different categories of satisfaction responses. Using the cross tabulating function in SPSS, the predicted and actual responses were determined as demonstrated in Table 3.

The model demonstrated high prediction accuracy (2.5%+8.3%+32.5%+12.7%+6.9%=62.9%) for all five categories combined. In the first model built for ordinal regression, the model was fit (X^2(72) =445.781, P<0.001), pseudo R square was 94.2%, the assumption of parallel lines was satisfied and the accuracy of classification of response categories was 62.9%.

Since all perception items were associated with the overall satisfaction score in separate bivariate analyses, the variables which had the least effect in explaining the response variable were excluded one by one from the first model until exclusion of a variable decreased the amount of variation explained by the model. At the same time, model fitting and violation of assumption of parallel lines were tested for each model. In the process of model building, totally 11 of the perception items were excluded from the first model. Finally, the most parsimonious model was constructed with 12 explanatory variables. The final model with complementary clog log link function satisfied the assumption of parallel lines (p=1.0) and the model fitting information showed that the built model was fit (X^2(13) =445.781, P<0.001). Upon exclusion of several variables, variance of 94.2 was still explained by the significant independent variables.

Table 2. Clog-log link of Ordinal regression analysis for complete model

Perception items	Estimates	Standard Error	Significance level
Number of admission	0.048	0.039	0.219
DH has up to date and well maintained equipment.	0.176	0.151	0.244
Cleanliness and hygiene in district hospitals were excellent.	-0.362	0.222	0.104
The nurses and doctors were clean and well-groomed.	-0.019	0.2	0.925
The DH thoroughly provided information on hospital service	0.358	0.124	0.004
The patient room was comfortable enough	0.434	0.152	0.004
When I have a problem, DH showed willingness to solve it	-0.067	0.194	0.729
Doctors explained to me about my health condition, diagnosis and treatment in understandable way	-0.192	0.162	0.235
Nurses explained to me exactly when and what they were going to do	0.388	0.16	0.015
Doctor monitored my health status regularly/everyday	0.707	0.229	0.002
Doctors responded immediately when I called	-0.032	0.158	0.839
Nurses responded immediately when I called	0.008	0.152	0.956
Nurses were helpful to me.	0.503	0.224	0.025
Waiting time for admission was not so long /more than a week/	-0.226	0.183	0.217
Waiting time for daily service was not so long /more than 45 min/	0.529	0.289	0.067
I felt confident when receiving medical treatment.	-0.128	0.204	0.531
Doctors were respectful to me	0.262	0.161	0.104
Nurses were respectful to me	0.374	0.173	0.031
Nurses in district hospital were caring	0.476	0.199	0.017
Doctors in district hospital listened to me attentively	0.445	0.19	0.019
Doctor spent enough time to check and to advice to me	-0.008	0.169	0.96
Operating hours in district hospital was convenient to patients	0.014	0.245	0.955

Table 3. Predicted Response Category * OVSAT Crosstab (complete model)

			Actual response category					
			Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	Total
Predicted Response Category	Very dissatisfied	Count	4	0	0	0	0	4
		% of total	2.50%	0.00%	0.00%	0.00%	0.00%	2.50%
	Dissatisfied	Count	4	13	4	0	0	21
		% of total	2.50%	8.30%	2.50%	0.00%	0.00%	13.40%
	Neutral	Count	2	19	51	6	0	78
		% of total	1.30%	12.10%	32.50%	3.80%	0.00%	49.70%
	Satisfied	Count	0	1	12	20	1	34
		% of total	0.00%	0.60%	7.60%	12.70%	0.60%	21.70%
	Very satisfied	Count	0	0	0	5	15	20
		% of total	0.00%	0.00%	0.00%	3.20%	9.60%	12.70%
	Total	Count	10	33	67	31	16	157
		% of total	6.40%	21.00%	42.70%	19.70%	10.20%	100%

In the final model, the overall patient satisfaction was significantly associated with six explanatory variables regarding perception of patients: comfortableness of patients' room (p=0.007), explanation of procedure done by nurses (p=0.003), helpfulness of nurses (p<0.001), respectfulness of nurses (p=0.008), nurses' care (p=0.004), and attentiveness of doctors to listen to patients (p=0.016) (Table 4). These six significant explanatory variables showed positive regression coefficients, which implied that patients who had higher perceptions on these explanatory variables were probably those with a higher level of overall satisfaction. The estimates are in ordered log odd scale; for instance, for comfortableness of the patients' room, it can be said that for one unit increase in perception score on comfortableness of room, we would expect a 0.331 increase in the expected value of overall satisfaction in the log odds scale, provided that all other variables in the model are held constant.

Table 4. Parameter Estimates (Clog-log link of Ordinal regression analysis for parsimonious model)

Perception items	Estimates	Standard Error	Significance level
Number of admission	0.043	0.036	0.223
The patient room was comfortable enough	0.331	0.123	0.007
When I have a problem, DH showed willingness to solve it	-0.042	0.153	0.782
Nurses explained me exactly when and what they are going to do	0.332	0.111	0.003
Nurses responded immediately when I called	0.046	0.109	0.674
Nurses were helpful to me	0.679	0.189	0
I felt confident when receiving medical treatment	0.016	0.166	0.925
Doctors were respectful to me	0.217	0.128	0.091
Nurses were respectful to me	0.401	0.152	0.008
Nurses in district hospital were caring	0.497	0.171	0.004
Doctors in district hospital listened to me attentively	0.348	0.144	0.016

Table 5. Predicted Response Category * OVSAT Cross-tabulation (parsimonious model)

			Actual response category				
			Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	Total
Predicted Response Category	Very dissatisfied	Count	2	0	0	0	0	2
		% of total	1.30%	0.00%	0.00%	0.00%	0.00%	1.30%
	Dissatisfied	Count	6	11	4	0	0	21
		% of total	3.80%	7.00%	2.50%	0.00%	0.00%	13.40%
	Neutral	Count	2	21	56	10	0	89
		% of total	1.30%	13.40%	35.70%	6.40%	0.00%	56.70%
	Satisfied	Count	0	1	7	15	0	23
		% of total	0.00%	0.60%	4.50%	9.60%	0.00%	14.60%
	Very satisfied	Count	0	0	0	6	16	22
		% of total	0.00%	0.00%	0.00%	3.80%	10.20%	14.00%
	Total	Count	10	33	67	31	16	157
		% of total	6.40%	21.00%	42.70%	19.70%	10.20%	100.00%

We also tested the accuracy of the classification results for the satisfaction response categories in the final model (Table 5). The model demonstrated high prediction accuracy (1.3%+7%+35.7%+9.6%+10.2%=63.8%) for all five categories combined and it had a higher accuracy than in the first model. The reduced model with complementary log log link turned out to provide the best fit for the data; the model fitting values, accuracy of classification results and the application of the principle of parsimony confirmed that the results of our study would be presented within the best constructed model.

Discussion

This study addressed the significant elements of patient perception influencing their overall satisfaction with healthcare services provided at district hospitals in Ulaanbaatar city, Mongolia. The result of this study provides insights to both healthcare providers and hospital managers to improve patient satisfaction in the hospital environment in Mongolia. Theoretically, the model identified several elements of quality that influenced patient satisfaction in district hospitals in Mongolia.

The result of the study showed no significant relationship between age, gender, occupation, education, self reported health status, and the length of stay in hospital. This result is consistent with some studies; however, other studies found a significant relationship between age (Williams, 1991), gender (Cooper-Patrick, 1999), education (Zemencuk, 1996; Kareem, 1996) and patients' satisfaction as well as perceptions (Mummalaneni, 1995). This disparity between studies might be explained by the fact that patients' needs and desires (or wishes) are shaped by their socio-cultural system in which the healthcare system is founded (Calnan, 1988); it is also conceivable that the behavior of a healthcare consumer may vary from one culture/nation to another. Service satisfaction and dissatisfaction are indeed subject to cultural and personal issues. Thus, studies in different contexts can have some different results.

The number of admissions into the hospital had a significant influence on patient satisfaction. Patients who were admitted for the first time were less satisfied with their hospital experience than those who had been admitted more than 12 times. A possible reason is that patients who were admitted for the first time might be more critical of the healthcare services than those who had been admitted several times; perhaps, as people experience the healthcare services many times, they just become less critical of them. Other surveys have also suggested that people accustomed to staying in hospitals might have different opinions compared to patients who are unfamiliar with the hospital services (Carman, 2000). Patients who had been admitted several times might be accustomed to healthcare services provided by district hospitals. This may also reflect a more realistic opinion of people who had been admitted many times and how they felt toward the healthcare services that had been provided for them throughout their experiences.

Our final parsimonious regression model revealed six significant elements influencing patients' satisfaction. The comfort of the patients' room significantly influences their overall satisfaction. It is consistent with other studies; for instance, the study by Andaleeb (2001) found that tangibles such as comfort and a clean environment played a crucial role in patient satisfaction. Many other studies indicated the importance of tangible dimensions as a critical indicator of customer satisfaction (Parasuraman, 1985; Parasuraman, 1988; Carr-Hill, 1992).

Patients also influenced each other's comfort because there were many patients (six to eight patients) in one room. Once there are six to eight patients in one room, it is clear that patients may complain about their discomfort because patients are heterogeneous in terms of their lifestyle and behavior. For example, some patients go to bed early while others are used to sleeping late. In addition to that, food amount, quality and service in district hospitals are poor. Thus, almost every patient brings food from their home. There are no certain schedules for visits and a specific place to have a meal, and patients tend to eat their meal in their room. It leads to some difficulties and discomfort for other patients.

First, Mongolians usually share their food with others and they feel inconvenient to have a meal alone. It is also complicated for visitors to decide how much food to prepare. Second, Mongolian food is mostly prepared with meat and the smell is quite strong. Therefore, patients' rooms sometimes would turn into a canteen because of the smell. As such, establishing one room as a canteen to have a meal or to meet visitors in district hospitals might be very helpful.

It is also noteworthy that the results of the studies in developing countries such as Bangladesh and Vietnam found the importance of tangible dimensions for satisfaction with healthcare services, while patients of developed countries such as Singapore, Taiwan, South Korea, and USA are less sensitive for tangible elements such as comfort of the room, a clean hospital environment, and modern equipment. Our study results might be no exception for this. Generally speaking, a comfortable healthcare environment helps the patients relax and reduces their anxiety.

According to our results, the explanation of the procedure performed by nurses has a great influence on patient satisfaction. During a procedure, patients feel a lot of uncertainty regarding their insufficient knowledge about medical care; a detailed explanation by service providers will help them better understand how the service operates. Therefore, the provision of such information shouldn't be neglected in a hospital service setting.

Further, empathetic services such as nursing care, respectfulness and helpfulness of nurses had a significant influence on patients' overall satisfaction. Doctors' attentiveness also had a positive impact on satisfaction. Unfortunately, many healthcare providers in district hospitals seem to forget how important these issues can be to patients. Even though patients require doctors to pay attention to them, the estimates/parameters of the model imply that their satisfaction depends more on nursing elements; the coefficient estimate is higher (0.401-0.679) for nursing elements. Particularly, patients of the district hospital are more sensitive to nursing elements especially nursing care and they graded their service low. It can be explained that the number of patients per nurse is greater than per doctor and nurses are overworked because beds in district hospitals may be fully occupied. Moreover, in daily healthcare service patients experience nursing care more frequently than the doctor's care. This might be another reason that nursing care and respectfulness of nurses are perceived as low by patients. Other studies also agree that the relationship between staff and patients could lead to a greater customer satisfaction (Zifko-Baliga, 1997; Polluste, 2000; Ramsey, 1997; Kim, 2001).

Conclusion

Based on finding of the study, the following conclusions are drawn, which can be helpful for healthcare providers and hospital managers in respect with the allocation of efforts to maximize patient satisfaction and to improve the perceived quality of healthcare services:

1. Patients who had been admitted in hospital for the first time had lower perceptions on, and were less satisfied with the overall healthcare services. Patients who had been admitted more than 12 times had better perceptions regarding overall healthcare services and were more satisfied with service. No other background factors such as age, gender, education and occupation appeared to influence patient satisfaction.

2. Patient satisfaction significantly depended on empathetic services such as nursing care, respectfulness of nurses, helpfulness of nurses and attentiveness of doctors to patients. The level of comfort in the patients' room also had a great influence on patient satisfaction.

It is evident that the empathy dimension, which significantly influences patient satisfaction, shows a large quality gap; employee satisfaction in concert with patient satisfaction might be crucial because satisfied employees provide more empathetic services (Zeithaml, 1988).

Over time and as more variables are identified, it is possible to expand the standards in quality based on patients' needs and as such health service providers can provide services that are more in line with the patients' demands. However, no questionnaire can completely cover all the items that may be important in the patients' belief system, including their perceptions and expectations from the healthcare services. Therefore, qualitative methods may be used along with quantitative research to help capture a better understanding of the concept of healthcare quality. Well-managed healthcare systems rely on regular feedbacks from their patients and their immediate service providers, which are then monitored and used for the improvement of the healthcare service quality. Satisfaction scores can also be used to monitor and thereby improve the performance of the hospital staff.

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