

Factors Determining Inpatient Satisfaction with Hospital Care in Bangladesh

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Abstract

The objective of this study is to identify factors associated with satisfaction among inpatients receiving medical and surgical care for urinary, cardiovascular, respiratory, and ophthalmology diseases at Dhaka Government Medical College Hospital, Bangladesh. The data of this study is collected from 190 inpatients by using a patient judgments questionnaire covering 10 dimensions of satisfaction (appointment waiting time for doctor after admission, doctor's treatment and behavior, behavior and services of nurses, boys and *ayas* (-care givers-), toilet and bath room condition, quality of food, number of days in the hospital, cost for treatment, and gift/tips culture in the hospital). Patient overall level of satisfaction is treated as dependent variable, while dimensions of satisfaction are each treated as independent variables. Additionally, inpatients' socio-economic characteristics such as education, occupation and monthly family income are used as independent variables. OLS regression models are used to identify key factors connected with inpatients satisfaction. The level of significance for variables retain in the regression models is set at 0.05. The final regression model is significant with *F*-value of 73.673 ($p < 0.001$) and can explain 80.8% of the variation in the dependent variable as it is indicated by the R-Square. The nested model F-test suggests that inpatients' monthly family income and levels of education have significant effect on the dependent variable.

Keywords: Hospital, Inpatient, Satisfaction, Services, Bangladesh

1. Introduction

Health is a basic human need and fundamental human right. It is the responsibility of government and health care personnel to provide health care to all people in equal measures and to ensure the fulfillment of the health needs of entire population. The health status of developing countries of the world is miserable and unacceptable. A large segment of the population in developing countries is deprived to access to basic health care. The services delivered by the health care providers are not up-to the level of need and perception of the clients. In recent years the World Bank and other donor agencies have been advising developing countries to ensure that limited resources not only have an optimal impact on the population's health at affordable cost but also that health care services are expected to respond directly patients' preferences and demands (see De Geydent, 1995; Calnan et al., 1994, 1988; Kwan, 1994).

The efforts of Bangladesh to improve its health care delivery system have increasingly emphasized quality of care (Aldana et al., 2001). The government of Bangladesh has an institutional network for providing health care facilities from the grassroots level to upward. The primary health care in the public sector is organized around the Upazilla Health Complex (UHC) at sub-district level which is considered as a health care hub. Above the sub-district there are district hospitals and specialized medical colleges which providing secondary health care and

national tertiary level health care facilities. According to the statistical figures, Bangladesh has made remarkable progress in some indicators of health such as controlling infant, maternal and under-five mortality. It has achieved a credible record of sustaining 90% plus vaccine coverage in routine EPI with NIDS (national immunizations days) since 1995 (WHO 2008). Despite this progress, it is well known that the problem of access to modern health care service and reliable treatment is acute in Bangladesh. Dissatisfaction and lack of faith in the quality of health care services in Bangladesh have led a huge number of Bangladeshi patients to go to the neighboring countries such as India, Thailand and Singapore.

The objective of the present study is to identify factors associated with satisfaction among inpatients receiving medical care in a government hospital of Bangladesh. More specifically, what are the factors that affect inpatients satisfaction at Dhaka Medical Government hospital of Bangladesh? Are the patients' socio-economic characteristics related with the satisfaction of quality of hospital services?

1.1 Hospital Services and Patient Satisfaction

Respect for patients' demand and desire is central to any humane health care policy. As a result, patient satisfaction is widely considered as an integral part of the quality of care. Health care provider organizations wishing to meet those needs more effectively have shown growing interest in the use of patient evaluations and reports as a complement to other methods of quality assessment and assurance (Cleary et al., 1991). Increasing concentration has been given to the evaluation of patient satisfaction with care (Nguyen Thi et al., 2002). Furthermore, patient satisfaction is identified as an important dimension for assessing the quality of health care services (Calnan et al., 1994; Epstein, Laine, Farber, Nelson, & Davidoff, 1996; Williams, 1994). Indeed, quality assurance has evolved as an internationally important aspect in the provision of health care services (Nguyen Thi et al., 2002). Recently developing countries, influenced heavily by findings of developed countries, are increasingly interested in evaluating the quality of health care services (Prasanna et. al., 2009). Pascoe (1983) has defined it as a health care recipient's reaction to salient aspects of his or her experience of a service.

According to Donabedian (1980), client satisfaction is a fundamentally important measure of the quality of care because it offers information on the provider's success at meeting those expectations of most relevance to the client. Measures of satisfaction are, therefore, important tools for research, administration and planning. Patient satisfaction can also be used to evaluate the process of health care (Carey & Seibert, 1993; Etter, Perneger, & Rougemont, 1996; Fitzpatrick, 1991a, b; Guadagnoli & Cleary, 1995; Kane, Maciejewski, & Finch, 1997; Lasek, Barkley, Harper, & Rosenthal, 1997; Linn et al., 1995; Ross, Steward, & Sinacore, 1995; Williams, 1994), as greater satisfaction may be related with superior compliance, improved attendance at return visits and better outcomes (Cleary, Keroy, Karapanos, & McMullen, 1989).

Factors associated with satisfaction are thought to include the structure, process and outcome of care as well as patient socio-demographic, physical and psychological status, and attitudes and expectations concerning medical care (Cleary & McNeil, 1988; Minnick, Roberts, Young, Kleinpell, & Marcantonio, 1997; Williams, 1994). Quality assessment studies generally measure one of three types of outcome: medical outcomes, costs, and client satisfaction. For the last mentioned, clients are asked to assess not their own health status after receiving care but their satisfaction with the services delivered (Fisher 1971; Smith, 1989). In some studies, cognitive evaluations of service quality attributes (e.g., appointment waiting time was acceptable or too long) are equated with client satisfaction (Newman, Gloyd, Nyangezi, Francison, & Muiser, 1998). In others, client satisfaction is measured directly by asking whether respondents feel satisfied or dissatisfied with individual service quality items (Nathorst-Boos et al., 2001). In still others, the degree of discrepancy between expectations and perceived performance is defined as client satisfaction (Williams, 1994). In Bangladesh, very few studies have tried to measuring patient satisfaction with the quality of hospital services. Previous assessments of client satisfaction with services provided by government health workers in Bangladesh has usually constituted a marginal element in performance appraisals (Whittaker M et al., 1993; Khnun P et al., 1994; Mahbub F et al., 1991; Hashemi S et al., 1995; Al- Sabir et al., 1995). These studies have mostly been limited to family planning, but one finding worth mentioning is that quality of care was not always linearly associated with the level of satisfaction expressed by clients (see Aldana et al., 2001). Aldana, Piechulek and Al-Sabir (2001, p. 512) have measured client satisfaction (operationalized directly as "very satisfied" to "very dissatisfied") with general health-care clinic services in rural Bangladesh and noted that perceptions of provider behavior, especially respect and politeness, are strongly associated with satisfaction. Wait time is also important but perceptions of medical staff technical competence are relatively less important.

1.2 Hypotheses

H1: The better the quality of treatment provided by the doctors to the inpatients, the greater will be the level of satisfaction among the inpatients with hospital services.

H2: The higher level of bad behavior done by the doctors, nurses & boys/*ayas* (-care givers-) with the inpatients, the lower will be the level of satisfaction among the inpatients.

H3: The better the level of cleanliness of toilet and bath room of the hospital, the greater will be the level of inpatients satisfaction with hospital services.

H4: The higher level of gift/tips demanded by boys/*ayas* (-care givers-) of the hospital, the lower will be the level of inpatients satisfaction.

H5: The long waiting time for doctor after getting admission in the hospital, the lower level will be the level of inpatients satisfaction.

H6: The higher the level of socio-economic condition (such as income, education and occupation) of the inpatients, the lower will be the level of patient satisfaction with hospital services.

2. Method of data collection and Operationalization of the Variables

The study population consisted of inpatients receiving medical and surgical care for cardiovascular, respiratory, urinary, and ophthalmology diseases at Dhaka Government Medical College Hospital, Bangladesh. The data of this study was collected in December 2007. Patients eligible for screening were aged 18 years or above, admitted to one of the mentioned units and stayed 4 or more days in the hospital. We got a total of 204 eligible inpatients but 190 inpatients were retained (95%) as 10 patients declined to response and 4 were partially answered. Before collecting data, the aim of the study, complete confidentiality guarantees, and the right of refusal to answer specific questions were assured. Using univariate, bivariate, and OLS regression the data of this study has been analyzed. The level of significance for variables retain in the χ^2 and regression models is set at 0.05.

We selected Dhaka government medical college hospital as an appropriate place for research because it is one of the largest public medical college hospitals in Bangladesh which provides treatment to all types of patients. Every day, on average, 1,432 patients come to the outdoor and 450 to the emergency units of the hospital, while about 184 patients are admitted to the indoor for treatment. The patients are supposed to receive medical treatment at a low cost as it is a government-run hospital.

Patient satisfaction was measured using a semi-structured patient judgments questionnaire. Clients were asked to supply the following information about themselves: age, sex, marital status, occupation, level of education, number of days in the hospital; the health services such as appointment waiting time for doctor after getting admission, doctors' treatment and behavior, behavior and services of nurses, boys /*ayas* (-care givers-), toilet and bath room condition, quality of food, and gift/tips culture of the hospital. Level of satisfaction was assessed in three steps. First, inpatients were asked whether they were satisfied with the care received, and then they were asked about their level of satisfaction or dissatisfaction. Patients were asked to rate the overall levels of satisfaction on a four point scale: 1= not satisfied, 2= neither satisfied nor dissatisfied, 3= satisfied, and 4= highly satisfied.

Patients were asked to rate each hospital services (such as doctors' treatment and behavior, behavior and services of nurses, boys / *ayas* (-care givers-), toilet and bath room condition, and quality of food) on a four point scale: 1= very bad, 2=bad, 3= good, and 4 = very good.

For testing the relationship between patients' occupation and patient satisfaction with the quality of hospital services we developed three set of dummies with reference to the day labor (highest category). For the first set dummy we recoded small business=2 & private job=3 into smallbusi_privajob=1, otherwise 0. Likewise, for the second set dummy we recoded government employee =4 into govt_employee=1, otherwise 0; for the third set dummy we recoded the house wife=5 and others=6 into housewife_other=1, otherwise 0.

3. Findings

Descriptive Statistics, Correlations and Cross Tabulations

In this study, 65.8 percent of inpatients are male and 34.2 percent are female. The inpatients are relatively young, with a mean age of 37.19 years. On average, their education level is 6.45 years, and their monthly family income is TK 6721.37. A chunk of patients involve in small business (25.3%) followed by private job (24.2%), day labor (15.3%), house wife (14.7%) and government employee (8.4%). The remaining segments are students,

unemployed and old people (12.1%). The study explores that 54.7 percent of the inpatients have paid money to different people in the name of gift/tips after getting admitted in the hospital.

The mean values of all hospital services variables such as nurses and boys/*ayas* (-care givers-) services and their behaviour, quality of food, toilet and bath room condition, doctors' behavior, and treatment indicate that inpatients are not enthused about hospital services and care that they are receiving. The average waiting time for doctors after getting admitted in the hospital is 6.1 hours. On average, they have stayed 8.8 days in the hospital, and spent a handsome amount of money for treatment, with a mean of Taka 3020.00 (see Table-1).

This study uses OLS regression models to predict the association between inpatients satisfaction and quality of hospital services. To inspect the association between dependent variable and each of the independent variables we have done Pearson's r for continuous variables, and χ^2 tests for the categorical variable *patients' occupation* and dichotomous variable *gift/tips*.

Table-1 suggests that patients' satisfaction is moderately connected with doctors' treatment (.625), behavior of nurses and boys/*ayas* (.620), services of nurses and boys/*ayas* (.537), toilet and bath room condition (.609), and quality of food (.535). Surprisingly, doctors' behavior is weakly associated with patient satisfaction. There is a modest negative association between inpatient satisfaction and waiting for doctor after getting admitted in the hospital (-.592) i.e. long time waiting for doctor is connected with the lower level of patients' satisfaction. Likewise, number of days in the hospital, and cost for treatment have quite negative connections with inpatient satisfaction.

Concerning patients' socio-economic characteristics, we see that there is a modest negative correlation between patients' years of education and satisfaction (-.656), i.e. higher level of education is associated with lower level of patient satisfaction. Like this, patients' family income has a modest negative relation with patient satisfaction (-.632). More specifically, there is a relationship between higher level of income and lower level of inpatient satisfaction with care. However, there is a weak association between patients' age and inpatient satisfaction with the quality of hospital services (see Table-1).

With respect to the relation between patients' occupation and patient satisfaction with the quality of hospital services, the χ^2 value is .017 which is lower than .05 (5% significance level). Therefore, we can reject the null-hypothesis. Concerning gift/tips and inpatient satisfaction, the χ^2 value is .001 which is also less than .05 (5% significance level), and therefore we can reject the null-hypothesis (see Table-1).

OLS Regression analysis: The first regression model

In the first regression model we include the variables which are related with hospital services such as waiting for doctors after admission, doctors' treatment and behaviour, toilet & bath room condition, quality of food, behavior and services of nurses and boys/*ayas*, number of days in the hospital, and cost for treatment. Moreover, we include gift/tips variable in this model although it is not related with hospital services. The model summary shows that the first regression model can explain 77.1% (R-Square = .771) of the variance in the dependent variable. When adjusting the number of estimated parameters and the sample size, the model can explain for 75.8 % of the dependent variable's variance. The F-value of this model inspects whether all the coefficients are significantly different from 0 (zero), in our study we see that the population has a p-value of $p < 0.001$ (see Table-2).

The coefficients Table-3 shows that the regression coefficients of constants, number of days in the hospital, and cost for treatment are not significant at the 5% significant level. While the regression coefficients of waiting for doctors after admission, doctors' treatment and behaviour, toilet & bath room condition, quality of food, behavior and services of nurses and boys/*ayas*, and gift_tips_yes are significant at the 5% significant level. The standardized betas indicate that the variable having the greatest impact on patient satisfaction is the toilet and bath room condition followed by doctors' treatment, quality of food, services and behaviour of nurses and boys/*ayas*.

The Second & Third Regression Models

In the second and third regression models we test whether patient's socio-economic characteristics such as patient's education, occupation and family income have significant effect on the dependent variable. In this case, the variables of the first regression model are set in block 1, while patient's years of education and family income are included in block 2, and the three dummies of patients' occupation (smallbusi_privtjob, Govt_employee, and Housewife_others) are added with block 3. As a result, it will give us the result of nested model F-test.

Now if we compare the first regression model with the second and third regression models we can see that the R-Square has changed from 77.1% to 80.7%, and then 81.2%. The R-Square difference between the second and

third models is negligible, as it is indicated by R-Square values. We see that patients' family income have significant effect on the dependent variable; but occupations do not have (see Table-4). The regression coefficients statistics also indicate the same result i.e. the p-values of all dummies i.e. Smallbusi_privtjob (, 072), Govt_employee (, 089), and Housewife_others (, 196) are not significant at 5% significant level.

The final regression model

We have seen that cost for treatment and number of days in the hospital in the first regression model, and the three dummies of patients' occupation in the third regression model do not have significant effect on Y at 5% significant level. Therefore, we drop these variables from our final regression model.

The final regression model is significant with overall F-value of 73,673 ($p < 0.001$) and can explain 80.8% of the variation in the dependent variable as it is indicated by the R-Square. When adjusting the number of estimated parameters and the sample size, the model can explain for 79.5% of the dependent variable's variance (Table-5).

The constant (intercept) in the regression coefficients (Table-6) indicates that when all the variables are set to 0 (zero) a patient's satisfaction with the quality of hospital services is 1,355, which is not realistic because most variables do not start from 0 (zero). However, with respect to doctors' treatment, we can say for every unit of change of doctors' treatment the predicted value of inpatient satisfaction increases .223. Similarly, a unit of change in the quality of food, toilet and bath room condition, the behavior of doctor, and nurses and boys/ayas' services the predicted value of inpatient satisfaction increases .158 for quality of food, .168 for toilet and bath room condition, .115 for doctors' behavior, and .103 for nurses and boys/ayas' services. Considering patients' education, we see that every unit of change in patients' years of education the predicted value of patient dissatisfaction increases (-).022. Likewise, every unit of change for waiting for doctor after getting admitted in the hospital the predicted value of inpatient dissatisfaction increases (-).040. It is seen that patient having the experience of giving gift/tips to boys/ayas are predicted to satisfy (-).829 than those who do not pay any gift/tips.

The standardized betas indicate that the variable having the greatest impact on patient satisfaction is doctors' treatment (.187) followed by toilet and bath room condition (.173), service and behaviour of nurses & boys/ayas (.170 & .167), and quality of food (.141). While the factors that have significant impact on patient dissatisfaction are the gift/tips culture in the hospital followed by wait for doctors' after admission, patients' family income, and inpatients' education (Table-6).

4. Discussion & Conclusion

Quality assurance has emerged as an internationally important aspect in the provision of health care services. The expectations of the public have also increased day by day and they have started questioning the adequacy of patient care not only for quantity of service rendered but also for the quality that is provided by the hospitals. Studies in the developing world have showed a clear link between patient satisfaction and a variety of explanatory factors, among which service quality has been prominent (Rao et al. 2006; Zineldin 2006). Patient satisfaction is undoubtedly a useful measure, and to the extent that it is based on patients' accurate assessments, it may provide a direct indicator of quality care. The new National Health and Population Policy Programme in Bangladesh is committed to improving the quality of services as a means of increasing the use of government health facilities. Still due to maltreatment and mismanagement in the hospital services a huge number of Bangladeshi patients often go to the neighboring countries for better treatment. Actually, ensuring quality demands as a prerequisite the answer to question, "what are the elements in the process of delivering care that affect client satisfaction?" (See Aldana et al., 2001). Our study answers part of this question for the context of Bangladesh, showing a number of service dimensions that are important to maintain the quality of hospital services and may ensure patient satisfaction.

From the regression analysis we see that the powerful predictors for patient satisfaction with hospital services are doctors' treatment, services and behaviour of nurses, boys/ayas. These findings are in concurrence with a number of studies. For example, Rahman et al., (2002), and Andaleeb (2007) have found that doctors' treatment, the behaviour of nurses/boys and their services to patient are significantly influenced patients' satisfaction. Aldana and associates (2001) have explored that the most powerful predictor for client satisfaction with the government services is provider behaviour, especially respect and politeness. To them, for patients this aspect is much more important than the technical competence of the provider.

Hospital should maintain a clean and orderly environment, and provide wholesome food to the patient. But it is a common complaint against the cleaners and sweepers of the hospitals that they do not clean hospitals toilet and bath room regularly. Moreover, the food provided by the hospital is not delicious, sufficient, and wholesome. A recent TIB (Transparency International Bangladesh) study shows that only 25% patient of DMCH consider that

the quality of food in the hospital is good, while 31% consider it bad. The reasons of bad quality of food are bad odor in food (30%), bugs and other elements in food (51%), and poor menu (19%) (Daily Star, October 20, 2006). Ashrafun (1994, 1998) shows, a total of 60% patients are dissatisfied with the quality of food, and unclean toilet and bath rooms in DMCH. In our study, toilet & bath room condition, and the quality of food have come out as the influential factors contributing to inpatient satisfaction. Consistent with previous studies, long waiting time for doctor as factor contributing to patient dissatisfaction in Bangladesh (Aldana et al., 2001 and Rahman et al. 2002).

There is a widespread dissatisfaction among patients about bribe, gifts or tips culture in the government hospitals of Bangladesh. Patients have to pay money to different service providers in the name of gift/tips which is a significant factor for patient dissatisfaction. Gift/tips culture has emerged as an important factor in our model, showing a negative relationship with patient satisfaction.

It is also found that patient socio-economic characteristics such as years of education and family income act as influential factors to patient dissatisfaction with the quality of care. This study finds that cost for treatment and number of days in the hospital are not significant contributor to patient dissatisfaction that need to be examined in future research.

Lastly, we want to say this research identifies a number of indicators that are important to maintain the quality of hospital services and patient satisfaction in Bangladesh. Since the study is conducted in one government medical hospital in Dhaka City, we caution against generalizing the results to the context of the entire country. But hospital authority may consider the findings of the study to improve the services of the hospital for patient satisfaction and better treatment.

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Table 1. Descriptive Statistics, Correlations and χ^2 of Patient socio-demographic characteristics and Hospital Services

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Pearson's r
Patient's age	190	18,00	63,00	37,19	11,22	,075
Patient's family income in taka	190	3000,00	12000,00	6721,37	5295,4	-,632
Years of education	190	,00	16,00	7,03	4,58	-,656
Waiting for Doctors after admission (hours)	190	1,00	16,00	6,11	2,72	-,592
Number of days in the hospital	190	4,00	19,00	8,86	3,18	-,254
Patients' opinion about nurses, boys/ayas' service	190	1,00	4,00	2,52	,59	,537
Behaviour of nurse & boy/ayas	190	1,00	4,00	2,54	,61	,620
Patients' opinion about Doctors Behaviour	190	2,00	4,00	2,82	,52	,372
Patient's opinion about doctor's treatment	190	2,00	4,00	2,81	,55	,625
Quality of Food	190	1,00	4,00	2,53	,59	,535
Toilet and Bath room condition	190	1,00	4,00	2,24	,68	,609
Cost for treatment in Taka	190	1000,00	7500,00	3020,00	1253,5	-,235
Patient's satisfaction with overall quality of hospital services	190	1,00	4,00	2,41	,66	-

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Patients' occupation * patients' satisfaction: χ^2 value = .017

gifts/tips * patients' satisfaction: χ^2 value = .001

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,878 ^a	,771	,758	,32342

F-value: 60.297 (p < .001)

Table 3. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-,209	,281	-	-,745	,458
Waiting for Doctors after admission (hours)	-,042	,01	-,172	-3,859	,000
Number of days in the hospital	,001	,009	,005	,115	,909
Patients' opinion about nurses, boys/ayas service	,191	,048	,171	3,951	,000
Behaviour of nurses, boys/ayas	,181	,051	,167	3,589	,000
Patients' opinion about Doctors Behaviour	,124	,051	,097	2,420	,017
Patient's opinion about doctor's treatment	,254	,054	,214	4,711	,000
Quality of Food	,197	,049	,176	4,012	,000
Toilet and Bath room condition	,228	,043	,234	5,342	,000
Cost for treatment in Taka	-2,166E-5	,000	-,041	-,976	,331
Gift_tips_yes	-,155	,056	-,118	-2,758	,005

a. Dependent Variable: Patient's satisfaction with Quality of hospital services

Table 4. Model Summary

Model	R	R square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,878	,771	,758	,32342	,771	60,297	10	179	,000
2	,899	,807	,794	,29837	,036	16,658	2	177	,000
3	,901	,812	,795	,29762	,004	1,297	3	174	,277

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,901	,808	,795	,28767

F-value: 73,673 (p<.001)

Table 6. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	1,355	,341	-	3,969	,000
Waiting for Doctors after admission (hours)	-,040	,009	-,165	-4,260	,000
Patients' opinion about nurses, boys/ayas' service	,191	,044	,170	3,950	,000
Behaviour of nurse, boys& ayas	,181	,068	,167	,3,589	,000
Patients' opinion about Doctors Behaviour	,115	,045	,090	2,537	,012
Patient's opinion about doctor's treatment	,223	,048	,187	4,689	,000
Quality of Food	,158	,044	,141	3,603	,000
Toilet and Bath room condition	,168	,038	,173	4,383	,000
Gift_tips_yes	-,872	,214	-,662	-4,075	,000
Patient's family income (taka)	-5,989E-5	,000	-,155	-3,711	,000
Years of education	-,022	,006	-,152	-3,507	,001

a. Dependent Variable: Patient's satisfaction with Quality of hospital services