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Patient satisfaction with health services in Bangladesh

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Concern over the quality of health care services in Bangladesh has led to loss of faith in public and private hospitals, low utilization of public health facilities, and increasing outflow of Bangladeshi patients to hospitals in neighbouring countries. Under the circumstances, assessment of the country's quality of health care service has become imperative, in which the patient's voice must begin to play a greater role. This study attempts to identify the determinants of patient satisfaction with public, private and foreign hospitals. A survey was conducted involving inpatients in public and private hospitals in Dhaka City and patients who have experienced hospital services in a foreign country. Their views were obtained through exit polls using probability and non-probability (for foreign hospital patients) sampling procedures. Regression models were derived to identify key factors influencing patient satisfaction in the different types of hospitals. Doctors' service orientation, a composite of 13 measures, is the most important factor explaining patient satisfaction. Policy implications are discussed.

Keywords Health care services, hospitals, patient satisfaction

KEY MESSAGES

- In developing countries such as Bangladesh, few studies have sought patients' views on satisfaction with services, and there is little effort to involve them in measuring satisfaction or defining health service standards.
- Consequences of patient dissatisfaction can include patients not following treatment regimen, failing to pursue follow-up care and, in extreme cases, resorting to negative word-of-mouth that dissuades others from seeking health care from the system.
- Service orientation of doctors was found to be the strongest factor influencing patient satisfaction in hospitals.
- Service orientation of nurses is an important factor for ensuring patient satisfaction in Bangladesh, but the dearth of nurses is a continuing problem.
- Foreign hospitals are rated highest on all service dimensions. Unless this perception is matched by local hospitals, foreign exchange losses can be substantial as patients seek care abroad.

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Introduction

The health sector occupies an enormously important position in ensuring sustainable overall socio-economic advancement in developing countries. In Bangladesh, the government has begun to strategically integrate the health sector into its poverty reduction plans. The alternative—an unhealthy nation—is destined to perpetuate a vicious cycle of poverty. In this regard, the Commission on Macroeconomics and Health (2001) asserts that 'Improving the health and longevity of the poor is an end in itself, a fundamental goal of economic development' (see Executive Summary).

The efforts of the government, NGOs and private service providers in the country's health sector have been rewarded with some success, especially in primary health care with its focus on prevention. Presently, 73% of children are fully immunized in Bangladesh (NIPORT 2004) and the child mortality rate has declined substantially to 88 per 1000 from 153 in the mid-1970s (Government of Bangladesh 2003). Maternal mortality, an important indicator of well-being, has also declined, to 3.2 per 1000 in 2001 from 6 per 1000 in the 1980s, with the introduction of appropriate preventive measures (NIPORT 2003).

While the efforts are in the right direction, the public health sector is plagued by uneven demand and perceptions of poor quality. Countrywide, the underutilization of available facilities is of significant concern. For example, one study shows that the overall utilization rate for public health care services is as low as 30% (Ricardo *et al*. 2004). Moreover, the trend of utilization of public health care services has been declining between 1999 and 2003, while the rate of utilization of private health care facilities for the same period has been increasing (CIET Canada 2003). The unavailability of doctors and nurses, as well as their negative attitudes and behaviours, are major hindrances to the utilization of public hospitals. The situation is further compounded by lack of drugs, and long travel and waiting times (HEU 2003a). What is particularly disturbing is the lack of empathy of the service providers, their generally callous and casual demeanour, their aggressive pursuit of monetary gains, their poor levels of competence and, occasionally, their disregard for the suffering that patients endure without being able to voice their concerns—all of these service failures are reported frequently in the print media. Such failures can play a powerful role in shaping patients' negative attitudes and dissatisfaction with health care service providers and health care itself.

The private health care sector (including unqualified providers) also deserves close scrutiny as about 70% of the patients seek medical care from this sector (World Bank 2003). Between 1996 and 2000, private hospitals grew around 15% per annum (HEU 2003b). Unfortunately, there are concerns that the quality of service is being ignored here as well. Some of its main drawbacks include disregard of standard treatment protocols, lack of qualified nurses and unnecessary diagnostic tests (World Bank 2003).

The Bangladesh Government and its development partners have also acknowledged their concerns about the quality of health care services (Ministry of Health and Family Welfare 2003):

> 'Absenteeism of health care providers is a major concern; consultation time is very short (2–3 minutes), with almost no privacy . . . A good number of posts are lying vacant at Upazila and below levels. Rural facilities need more budget to meet local needs. Most of the time, providers are busy with other activities, including private business. Unavailability of drugs is the single most important reason for people's dissatisfaction about public health facilities.'

These instances reflect the problems of the health service delivery system that must be quickly and responsibly addressed. With the quality of services showing little signs of improvement, a large number of Bangladeshi patients who are able to afford it are going to foreign hospitals, despite the financial costs and the cumbersome processes involved in getting visas, obtaining foreign exchange, arranging for transportation, accommodation and food, and finding the right service providers. Clearly the perceived benefits to them exceed the costs. This also results in huge losses of foreign exchange for Bangladesh, estimated at Tk.500 million a year (IHE 2002).

Under these circumstances, this study attempts to identify the factors that influence patients' satisfaction with health care services, and examines their service experiences with public, private and foreign hospitals. A better understanding of the determinants of patient satisfaction with the different types of hospitals should help policy- and decision-makers adopt and implement effective measures to improve health care services in the country. The following are the main objectives of this study:

- identify the key factors that affect patients' satisfaction;
- assess how these key factors are rated by patients;
- determine the effects of these factors on patient satisfaction when applied to users of public, private and foreign health care service.

The role of patient satisfaction

Hospitals in the developed world recognize the importance of delivering patient satisfaction as a strategic variable and a crucial determinant of long-term viability and success (Davies and Ware 1988; Makoul *et al*. 1995; Royal Pharmaceutical Society 1997). Donabedian (1988) suggests that 'patient satisfaction may be considered to be one of the desired outcomes of care . . . information about patient satisfaction should be as indispensable to assessments of quality as to the design and management of health care systems'.

The recent CAHPS® surveys and their wide use in the health care industry in the USA reflects the importance accorded to consumers' experiences with a variety of services including Medicare and Medicaid (Lake *et al*. 2005). Other organizations such as the National Committee on Quality Assurance (NCQA), The Center for Medicare and Medicaid Services (CMS), and The National CAHPS® Benchmarking Database (NCBD) are also deeply involved with assessing the patient's perspective. The World Health Organization (WHO) has similarly created a performance system based on five composite measures in which health system 'responsiveness' (patient satisfaction) and its distribution in the population (of varying economic status) are key components. However, the measures are based on surveying public health experts (and not patients) on the assumption

that the performance of a health system is too complex for the general public to understand. In this regard, Blendon *et al*. (2001) show that the WHO ratings differ substantially for 17 industrialized countries when compared with the perceptions of their citizens.

While the plethora of approaches to studying patient satisfaction represents intense interest in giving voice to the patients in the developed world, in developing countries such as Bangladesh, patients have very little voice. Few studies have sought their views and there is little effort to involve them in measuring satisfaction or defining health service standards. This has implications for how health care services are ultimately perceived and the extent to which they are used. We believe that a patient who endures the physical, psychological, social and economic experiences during the overall health service delivery process would be able to make an appropriate evaluative judgment of how they were treated, as reflected in their overall satisfaction or dissatisfaction measures.

The ability to satisfy customers is vital for a number of reasons. For one, today's buyers of health care services in developed countries are better informed, a condition that is being driven by greater levels of information available to them. These buyers are therefore more discerning, knowing exactly what they need. Customer satisfaction is also a valuable competitive tool; hospitals that are customer focused have been able to increase capacity utilization and market share (Gregory 1986; Boscarino 1992). Recent research has shown that service satisfaction can significantly enhance patients' quality of life (Dagger and Sweeney 2006) and enable service providers to determine specific problems of customers, on which corrective action can then be taken (Oja *et al*. 2006). Patients' voice ought to derive similar changes in the developing countries.

It has also been shown that dissatisfied customers tend to complain to the establishment or seek redress from it more often to relieve cognitive dissonance and failed consumption experiences (Nyer 1999). In fact, dissatisfaction can have serious ramifications: patients are unlikely to follow treatment regimen, may fail to show up for follow-up care and, in extreme cases, may resort to negative word-of-mouth that can dissuade others from seeking health care services from the system or persuade them to seek it elsewhere, often abroad.

Patient satisfaction is defined here in Oliver's terms: that it is the patient's fulfilment response (Oliver 1997). It is a judgment that a health care gives service gives a pleasurable level of consumption-related fulfilment. In other words, it is the overall level of contentment with a service/product experience.

Factors driving patient satisfaction: the study framework

Studies in the developing world have shown 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). We believe this link is important also in the health care sector in Bangladesh. Earlier studies suggest that service quality can be adequately measured using the SERVQUAL framework (Parasuraman *et al*. 1991, 1993), and its refined version in the context of Bangladesh (Andaleeb 2000a, 2001), to help explain patient satisfaction. The framework, further embellished on the basis of focus group discussions, is as follows.

Service factors

Reliability

Reliability refers to providers' ability to perform the promised service dependably and accurately. In Bangladesh, reliability of the provider is often perceived as low for various reasons, such as the accusation that doctors recommend unnecessary medical tests, there is an irregular supply of drugs at the hospital premises, supervision of patients by care providers is irregular, and specialists are unavailable. Perceptions of reliability are also attenuated when doctors do not provide correct treatment the first time. In view of these reliability drivers, we felt that the more reliable the health care providers, the greater the patients' satisfaction.

Responsiveness

Patients expect hospital staff to respond promptly when needed. They also expect the required equipment to be available, functional and able to provide quick diagnoses of diseases. In addition, patients also expect prescribed drugs to be available and properly administered, as other indicators of responsiveness. Thus we posit that the greater the responsiveness of health care providers, the greater the satisfaction of patients.

Assurance

Knowledge, skill and courtesy of the doctors and nurses can provide a sense of assurance that they have the patient's best interest in mind and that they will deliver services with integrity, fairness and beneficence. For a service that is largely credence based (Zeithaml and Bitner 2000), where customers are unable to evaluate the quality of the services after purchase and consumption, the sense of assurance that is engendered can greatly influence patient satisfaction. In the health care system, assurance is embodied in service providers who correctly interpret laboratory reports, diagnose the disease competently, provide appropriate explanations to queries, and generate a sense of safety. Nurses also play an important part in providing additional support to patients' feelings of assurance by being well-trained and by addressing their needs competently. Thus, the greater the perceived assurance from the health care providers, the greater will be the satisfaction of patients.

Tangibles

Physical evidence that the hospital will provide satisfactory services is very important to patient satisfaction judgments. Generally, good appearance (tangibility) of the physical facilities, equipment, personnel and written materials create positive impressions. A clean and organized appearance of a hospital, its staff, its premises, restrooms, equipment, wards and beds can influence patients' impressions about the hospital. However, in Bangladesh, most of the hospitals/clinics are lacking in many of the above attributes, thereby attenuating patient satisfaction. We posit that the better the physical appearance (tangibility) of the health care service facility and the service providers, the greater will be the patients' satisfaction.

Communication

Communication is also vital for patient satisfaction. If a patient feels alienated, uninformed or uncertain about her health status and outcomes, it may affect the healing process. When questions of concern can be readily discussed and when patients are consulted regarding the type of care they will be receiving, it can alleviate their feelings of uncertainty. Also, when the nature of the treatment is clearly explained, patients' awareness is heightened and they are better sensitized to expected outcomes. Appropriate communication and good rapport can, thus, help convey important information to influence patient satisfaction. In particular, patients expect doctors and nurses to communicate clearly and in a friendly manner regarding laboratory and other test results, diagnoses, prescriptions, health regimens, etc. Similarly, nurses are expected to understand patient problems and to communicate them to the doctor properly. It is proposed that the better the quality of communication perceived by the patient, the greater will be their level of satisfaction.

Empathy

Health care providers' empathy and understanding of patients' problems and needs can greatly influence patient satisfaction. Patients desire doctors to be attentive and understanding towards them. Similarly patients expect nurses to provide personal care and mental support to them. This reflects service providers' empathy. We posit that the more empathy received from the service provider, the greater the satisfaction of the patients.

Process features

Process features refer to an orderly management of the overall health care service process. This constitutes patients' expectation that doctors will maintain proper visiting schedules and that there will be structured visiting hours for relatives, friends, etc. Updated patient records and standard patient release procedures also facilitate patient care. The practice of paying 'Baksheesh' (an informal but small facilitation payment), on the other hand, is an indication of process failures that can sometimes go out of control. We feel that the better the process features at the hospitals, the higher will be the level of satisfaction of the patient.

Additional factors

Cost

In addition to service factors, perceived treatment cost is another factor that patients may perceive as excessive. In the more affluent Western world, Schlossberg (1990) and Wong (1990) suggest that health care consumers have become much more sensitive to costs, despite health insurance coverage. Wong also predicts that consumers will shop for the best value. In the developing world, especially Bangladesh, cost is a perennial concern among those seeking health care service, given their low earnings. Such costs include consultation fees, laboratory test charges, travel, drugs and accommodation. While basic health care service is supposed to be free in public hospitals, patients end up bearing the costs of medicine and laboratory tests, as well as some additional unseen costs. Private hospitals are not free but their costs vary markedly across hospitals. We posit that the lower the perceived overall cost of health care services, the higher will be the level of patient satisfaction.

Availability/access

Availability of doctors, nurses and hospital beds round the clock is of concern to patients in defining the level of access they have to health care. Scarcity of beds and cabins in the government hospitals sometimes forces patients to choose private hospitals, often non-reputed ones. To access a foreign hospital, visa processing matters and arranging for accommodation and food are major concerns; patients usually prefer countries with minimum hassle in this regard. Therefore, it is hypothesized that when a hospital has easy physical access, where doctors, nurses, beds/cabins, etc. are available and when visa processing (for those seeking care abroad) is simple, patients will be more satisfied. In other words, the greater the patients' access to hospitals, the greater will be their satisfaction. The basic model being tested in the study therefore is:

$$\begin{aligned}\text{Satisfaction} = a &+ b1^{*}\text{reliability} + b2^{*}\text{responsiveness} \\ &+ b3^{*}\text{assurance} + b4^{*}\text{tangibles} \\ &+ b5^{*}\text{communication} + b6^{*}\text{empathy} \\ &+ b7^{*}\text{process features} + b8^{*}\text{cost} \\ &+ b9^{*}\text{access} + \text{error}\end{aligned}$$

Methodology

Secondary research

While some research is now available on Bangladesh's health care system, patient satisfaction issues have barely been examined. Thus, additional secondary sources were consulted from the developed world. We feel more research is needed to analyse Bangladeshi patients' satisfaction level in a comprehensive manner.

Qualitative research

The research team initially conducted in-depth discussions with 10 patients (covering three types of hospitals) about the entire process that they underwent to obtain the necessary care when afflicted. These discussions revealed a variety of factors that were grouped under the above nine constructs of the model, i.e. reliability, responsiveness, assurance, tangibles, communication, empathy, process, cost and access.

Questionnaire design

A preliminary questionnaire was first developed in English using Likert scales, then translated into Bengali and retranslated several times until it was user friendly and captured the desired constructs. The questionnaire was pre-tested several times to arrive at appropriate wording, format, length and sequencing of the questions. Pre-test feedback was used to refine the questionnaire until it was ready for data collection.

Data collection

A 10-member team of final year students of East West University were recruited for data collection. They were

briefed about the objective of the study and the questionnaire. They were also trained rigorously to collect unbiased and meaningful data.

A permission letter from the Ministry of Health and Family Welfare (MOHFW) was forwarded to the respective hospitals so they would provide the necessary help and cooperation to the data collectors. Researchers supervised the data collecting teams at different hospitals and assisted with obtaining the list of patients to be released, as well as with data collection. Upon receipt of the list of patients to be released, the data collectors used random sampling procedures to select the respondents and obtain data via personal interviews at the hospital premises on the day of discharge. Reasons for the study, complete confidentiality guarantees, the right of refusal to answer specific questions, and contact information were provided to the respondents according to internationally accepted research protocol.

Sampling method

The population of the research was defined as Bangladeshis who have been inpatients in public and private hospitals in Dhaka City or in hospitals in a foreign country within the past year. The focus on Dhaka's hospitals was deemed appropriate as Dhaka has the greatest number of hospitals of varying quality that attend to a diverse set of patient needs. Due to resource and time constraints, a sample size of 400 was targeted.

Two separate lists of public and private hospitals in Dhaka were obtained from the MOHFW. From the former list, Dhaka Medical College and Mitford Hospital were chosen purposively as these two hospitals are reputed to handle patients from all classes and with various health problems. In addition, three hospitals were also purposively chosen from the list of private hospitals. These include Central Hospital, Holy Family Hospital and Monowara Hospital. To ensure representation, sample sizes of 150 were planned to be collected from the public and private hospitals. The list of patients ready to be released on a particular date was obtained from the respective ward-in-charge of the public hospitals and the patient relations in-charge of the private hospitals. Using simple random sampling, patients were selected from this list.

Data for the patients availing foreign hospital care were hard to collect using probability sampling as no lists were available for this category of patients. A sample size of 100 was decided for this stratum and the snowball sampling method was used. The main countries where Bangladeshis obtain hospital services include Thailand, Singapore and India. Data were collected only from those respondents who had been admitted as inpatients.

A total of 413 surveys were completed; 400 of these were retained as 13 had excessive missing data.

Analysis

Frequency distributions were obtained to check for data entry errors and to obtain means and standard deviations for each construct across three categories of public, private and foreign hospitals (see Table 1).

To affirm the dimensions of the selected measures, principal components factor analysis was performed. Items loading together on a common factor (with Eigenvalues equal to or greater than 1.00) were checked to see if they were meaningfully clustered. All items for each factor were also factor analysed separately. In all cases a single factor was recovered, indicating convergent validity.

The final factors were somewhat different from the ones expected. For example, the measures of 'Tangibles' split into two components: staff and facilities (i.e. human and non-human components) that made clear sense. Also, instead of loading on the posited service factors, the measures depicted doctors' service orientation and nurses' service orientation as composites (see Table 2). However, most of the scale items purported to measure the original service dimensions were retained for the analysis; their loadings made clear sense. Varimax rotation and the final rotated solution resulted in eight factors comprised of 40 items (see Table 2) that explained 65.15% of the cumulative variation.

The derived factors were re-labelled as doctors' service orientation, nurses' service orientation, tangibles (facilities), tangibles (staff), access, treatment cost, facilitation cost

Table 1 Descriptive statistics

	Full sample (n = 400)		**Local: public hospital (n = 153)**		**Local: private hospital (n = 153)**		**Foreign: private hospital (n = 94)**	
Variables	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Satisfaction	3.93	0.89	3.49	0.96	3.95	0.73	4.60	0.51
Doctor	4.09	0.68	3.89	0.70	3.99	0.60	4.57	0.49
Nurse	3.95	0.75	3.66	0.84	3.95	0.62	4.45	0.46
Tangibles (hospital)	3.77	0.90	3.07	0.76	3.92	0.64	4.67	0.44
Tangibles (staff)	4.44	0.57	4.34	0.57	4.36	0.58	4.76	0.45
Access	4.07	0.74	3.85	0.80	3.96	0.63	4.63	0.49
Process	3.97	0.71	3.70	0.71	3.93	0.66	4.46	0.58
Hospital cost	3.11	0.86	2.82	0.74	3.53	0.75	2.90	0.95
Baksheesh	2.19	1.11	2.48	1.33	2.16	0.93	1.74	0.84

Table 2 Rotated component matrix[a]

	Component							
Items[b]	DSO	NSO	Tangibles (hospital)	Treatment costs	Tangibles (staff)	Access	Process	Baksheesh
x50	0.774	0.236	0.197	−0.034	0.134	0.052	−0.027	−0.036
x51	0.751	0.298	0.149	−0.026	0.188	0.091	0.005	0.088
x46	0.738	0.223	0.224	−0.057	−0.085	0.001	0.201	0.110
x39	0.727	0.236	0.158	−0.086	0.116	0.151	0.177	0.129
x45	0.717	0.148	0.231	−0.149	−0.082	−0.036	0.133	−0.038
x53	0.716	0.249	0.186	−0.032	0.080	0.255	−0.062	0.049
x44	0.716	0.109	0.173	−0.097	0.036	−0.032	0.132	−0.054
x40	0.678	0.132	0.096	−0.019	0.306	0.112	0.198	0.249
x52	0.668	0.185	0.161	−0.051	0.209	0.120	0.099	−0.111
x38	0.645	0.138	0.061	−0.113	0.229	0.225	0.299	0.149
x31	0.638	0.337	0.190	0.020	0.190	0.334	0.029	0.045
x23	0.557	0.280	0.158	−0.023	0.203	0.262	0.168	0.029
x25	0.539	0.114	0.039	−0.091	0.116	0.223	0.349	0.215
x54	0.318	0.754	0.273	−0.083	0.042	0.082	−0.041	0.048
x30	0.364	0.722	0.178	−0.009	0.164	0.244	−0.023	0.014
x29	0.205	0.687	0.119	−0.061	0.315	0.185	0.174	0.018
x55	0.269	0.654	0.312	−0.008	−0.169	0.202	0.089	0.021
x48	0.304	0.612	0.193	−0.021	0.106	−0.116	0.315	0.083
x47	0.332	0.589	0.306	−0.062	0.059	−0.186	0.225	0.224
x24	0.285	0.577	0.110	−0.083	0.340	0.196	0.247	0.075
x6	0.223	0.192	0.694	0.033	0.190	0.108	0.105	0.120
x7	0.306	0.218	0.677	0.052	0.228	0.027	0.159	0.167
x19	0.230	0.325	0.676	0.125	−0.136	0.198	0.077	−0.002
x10	0.215	0.372	0.670	0.111	0.149	0.067	0.068	0.177
x9	0.313	0.276	0.582	−0.006	0.175	0.177	0.161	−0.075
x18	0.209	0.091	0.574	−0.090	0.262	0.116	0.228	−0.085
x58	−0.092	0.010	0.054	0.786	−0.109	−0.054	0.000	0.010
x57	−0.051	−0.048	0.167	0.777	−0.025	−0.024	−0.018	−0.049
x63	−0.088	−0.157	0.265	0.722	−0.103	0.098	−0.059	−0.071
x61	−0.095	−0.015	−0.374	0.635	0.130	−0.067	0.039	−0.024
x60	−0.052	0.049	−0.255	0.474	0.073	−0.007	0.055	−0.293
x17	0.294	0.255	0.316	−0.060	0.709	0.096	0.078	0.055
x16	0.428	0.122	0.266	−0.031	0.704	0.133	0.037	0.073
x4	0.163	0.141	0.201	0.034	0.000	0.688	0.207	0.242
x2	0.409	0.126	0.163	−0.082	0.208	0.619	0.008	−0.023
x3	0.332	0.335	0.210	−0.103	0.340	0.441	0.044	−0.108
x70	0.360	0.182	0.218	0.051	0.086	0.201	0.695	−0.101
x69	0.252	0.177	0.287	0.004	0.025	0.034	0.629	0.047
x62	−0.007	−0.007	0.004	0.207	−0.160	−0.135	−0.076	−0.744
x68	−0.208	−0.355	−0.212	0.039	0.153	0.019	0.127	−0.565

[a]Rotation converged in 8 iterations.

[b]Specific items are provided in Appendix 1.

Extraction method: principal component analysis with Varimax rotation and Kaiser normalization.

DSO = doctors' service orientation: NSO = nurses' service orientation.

(or Baksheesh) and process features (see Appendix 1 for the measures). *Reliability* values using Cronbach's Alpha were very satisfactory. Given the recommendations of Nunnally (1978), that alpha values should be 0.70 or greater, it was found that only one variable, Baksheesh, had a value less than 0.70. The values are as follows:

Doctors' service orientation	0.95 (based on)	13 indicators
Nurses' service orientation	0.91	7 indicators
Tangibles (hospital)	0.91	6 indicators
Tangibles (staff)	0.87	2 indicators
Access	0.73	3 indicators
Treatment cost	0.80	5 indicators
Baksheesh	0.53	2 indicators
Process features	0.70	2 indicators
Patient satisfaction	0.94	5 indicators

Results

Descriptive statistics

Means and standard deviations are presented in Table 1. The mean of *satisfaction* for the full sample is 3.93 on a five-point scale and has a positive valence, being above the scale mid-point of 3.0. When broken down by public, private and foreign hospitals, the satisfaction rating for foreign hospitals came out substantially higher. Yet, it was surprising that, after all the woes reported about health services in Bangladesh, both public and private hospitals in Bangladesh scored commendably (3.49 and 3.95)—both on positive territory. We feel this is because the two public hospitals chosen—Dhaka Medical College Hospital and Mitford Hospital—are among the oldest hospitals in the country. The three private hospitals are also well-reputed. As a result, there may be a positivity bias in the mean rating of public hospitals that may not hold for other public hospitals, especially in the semi-urban and rural centres. Also, except for two constructs, the standard deviations for the public hospitals in Bangladesh are the highest.

From Table 1, we note that the doctor and nurse service orientation composites were rated high in all three categories (see means) as were tangibles (staff) and access. The similarity in the mean scores for doctors in the public and private hospitals in Bangladesh may be explained by the fact that, given the dearth of doctors, they offer their services to both sectors. A similar finding was reported by Andaleeb (2000b). Essentially, patients are being served by the same doctors in the public and private sectors. Future studies should include a wider set of hospitals to determine whether the obtained service evaluations are corroborated.

We also note that the physical evidence of cleanliness in the public hospitals was rated lower than in the other two categories. Treatment cost is also perceived as low in both public and foreign hospitals, which may be attributed to the different clientele served and their relative income bases. Those opting for foreign hospitals are from the upper income group who are generally much better off. Even so, they may not all be using the very best hospitals overseas, hence the perception of low cost of treatment. For example, many of the Indian hospitals are close by and are deemed better in terms of service but their price may actually be low; however, total costs are inflated by travel, food and accommodation costs.

Regression model

The model being tested is different from the one proposed in view of the factor analysis results. The revised model is represented by the equation:

$$\begin{aligned}\text{Satisfaction} = a &+ b1\ (\text{doctor service orientation}) \\ &+ b2\ (\text{nurse service orientation}) \\ &+ b3\ (\text{tangible hospital}) + b4\ (\text{tangible staff}) \\ &+ b5\ (\text{access composite}) \\ &+ b6\ (\text{treatment cost}) + b7\ (\text{process features}) \\ &+ b8\ (\text{baksheesh}) + \text{error}\end{aligned}$$

As the results indicate (see Table 3), the model for the full sample is significant at $P < 0.001$ ($F_{8391} = 124.40$) and explains 71% of the variation in the dependent variable. Three factors—doctors, nurses and tangibles (facilities)—explain the high percentage of variation in patient satisfaction. The standardized betas indicate that the variable having the greatest impact on patient satisfaction is the 'doctor composite' followed by 'tangible (facilities) composite', and the 'nurse composite'. The measures of each composite (see Appendix 1) ought to provide clear guidance on what patients need from the health care system and how these ought to be incorporated to deliver greater patient satisfaction.

By partitioning the data into the three hospital categories, we found all three models were significant, as indicated by the F-statistics and the R^2 values. The results suggest that a monolithic and standardized health care system is not what patients desire; the needs of each segment differ. For the local public hospitals, for example, five significant factors explained patient satisfaction. In order of importance (reflected in the standardized beta values), they are: doctors, tangibles (facilities), treatment cost, tangibles (staff) and nurses. The model explained 67% of the variation in the dependent variable.

For local private hospitals, in order of importance, there were four significant variables: doctors, baksheesh (facilitation payments), nurses and hospital procedures. The model explained 73% of the variation in the dependent variable.

Finally, for foreign private hospitals, there were four significant variables: doctors' service orientation had the strongest effect, while tangibles (hospital), tangibles (staff) and process features had similar and lower effects on patient satisfaction. Surprisingly, the service orientation of nurses was not significant. We attribute this to the likelihood that it is the doctors that draw patients to foreign hospitals, where their stay may not be very long. Since all concerns are discussed directly with the doctors, who probably give patients more time and attention than at home, the relevance or importance of the nurses diminishes.

Tangible evidence of the facilities also had a relatively strong effect on satisfaction. However, surprisingly, tangibles (staff) had a negative coefficient, suggesting that when doctors and nurses were neat in appearance, patient satisfaction was attenuated. This finding is counterintuitive. We feel that in foreign hospitals, the two concepts—tangibles (facilities) and tangibles (staff)—are not very distinct and blend into each other. However, in Bangladesh, hospital facilities and their staff (especially doctors and nurses) are distinct. To confirm this view we checked the correlations between the two variables.

Table 3 Regression results: satisfaction as dependent variable

	Full sample (n = 400)			Local: public (n = 153)			Local: private (n = 153)			Foreign: private (n = 94)		
	beta	Standard error	Standardized beta	beta	Standard error	Standardized beta	beta	Standard error	Standardized beta	beta	Standard error	Standardized beta
Constant	−0.332			−0.705								
Doctor	0.557***	0.059	0.425	0.488***	0.099	0.358	0.717***	0.079	0.597	0.616***	0.105	0.601
Nurse	0.189***	0.051	0.159	0.209**	0.082	0.182	0.224**	0.076	0.192	−0.034	0.092	−0.033
Tangibles (hospital)	0.338***	0.040	0.345	0.400***	0.077	0.319	0.006	0.073	0.005	0.439**	0.139	0.382
Tangibles (staff)	0.016	0.056	0.010	0.219**	0.098	0.131	−0.063	0.076	−0.050	−0.359**	0.114	−0.313
Access	−0.055	0.043	−0.046	−0.131	0.07	−0.109	0.030	0.062	0.027	0.034	0.080	0.033
Procedures	0.060	0.043	0.048	0.016	0.073	0.012	0.151**	0.063	0.127	0.215**	0.073	0.248
Treatment cost	−0.041	0.029	−0.040	−0.245***	0.064	−1.89	0.055	0.044	0.057	0.019	0.034	0.035
Baksheesh	−0.030	0.024	−0.038	−0.009	0.037	−0.013	−0.149***	0.037	−0.192	0.065	0.041	0.108
	$R^2 = 0.72$			$R^2 = 0.67$			$R^2 = 0.74$			$R^2 = 0.71$		
	$AR^2 = 0.71$			$AR^2 = 0.66$			$AR^2 = 0.73$			$AR^2 = 0.68$		
	$F_{8391} = 124.40$; $P < 0.001$			$F_{8144} = 37.12$; $P < 0.001$			$F_{8144} = 52.36$; $P < 0.001$			$F_{885} = 20.98$; $P < 0.001$		

***$P < 0.001$; ** $P < 0.01$; * $P < 0.05$.

The coefficient correlations are 0.41, 0.62 and 0.80 ($P < 0.001$) for public, private and foreign hospitals. In the case of foreign hospitals, the high correlation coefficient value suggests, as conjectured, the presence of multicollinearity.

Based on our sample, the service orientation of doctors has the greatest effect on patient satisfaction across all three types of hospitals. This factor deserves the most attention from administrators and policy makers responsible for building a better and more patient-centric health care delivery system.

Tangibles (facilities), or the visible aspect of hospitals, was also important in the case of both public hospitals (where looks can often be quite unsightly) and foreign hospitals (where looks are expected to be prim and proper).

The service orientation of nurses is an important factor for ensuring patient satisfaction in Bangladesh. The dearth of nurses, however, is a real problem in the country and the demands made on them are likely to be very substantial. The expectation of consistent services from them, therefore, is an issue that warrants further study.

Interestingly, process features also explained satisfaction with private hospitals in Bangladesh and with foreign hospitals. For the extra costs incurred, patients using these facilities expect the processes to be efficient.

The cost of services is important to the users of public hospitals but not to the users of private or foreign hospitals. To the latter (usually from the upper strata), cost may not be as important in explaining satisfaction as is service quality, lacking which they go overseas. Much of the country's foreign exchange is being lost to foreign hospitals that are costly but better on service features.

Access to health care, surprisingly, had no significant effect on patient satisfaction for any of the hospitals, despite evidence to the contrary. The zero-order correlations, however, were significant and had the correct signs. This finding may be attributed to the fact that we interviewed patients who had been released from hospital and who had access; hence this factor may not have been significant in explaining patient satisfaction.

Finally, 'Baksheesh' emerged as an important factor in the model, but only for the private sector, showing a negative relationship with satisfaction. Patients seeking health care services in the public hospitals may have accounted for this under treatment costs. In foreign hospitals, patients do not expect to make facilitation payments as the cost of treatment covers and ensures good and consistent services.

Discussion

A comprehensive model of patient satisfaction has many policy implications in regard to identifying patient needs, developing standards, designing services systems and processes, establishing employee and patient roles in service delivery, enhancing training programmes, managing demand and capacity, and delivering the needed quality of services. To these ends, measuring service quality and satisfaction is very important.

As might be expected, service orientation of doctors came out as the strongest factor influencing patient satisfaction in all three types of hospitals. This is not surprising. Usually in Bangladesh, patients' experiences on this factor are not very positive. Since most of the reputed physicians in the country serve multiple hospitals, they are incapable of giving due time and attention to patients. Previous studies from Aldana *et al*. (2001) and Rahman *et al*. (2002) also identified long waiting time and insufficient consultation time as factors contributing to patient dissatisfaction in Bangladesh. Yet, the overall ratings of doctors in our study are positive. Whether this represents a positivity bias among patients evaluating the 'exalted' doctor, whether it is due to the sample from Dhaka City, whether it is the reputed hospitals that were selected, or whether it is because no better service is expected anywhere else in the country, the higher than expected ratings have plausible explanations.

Given the important role of doctors in patient satisfaction, policy makers in Bangladesh ought to initiate a professional development programme (PDP) for physicians to provide required technical and behavioural training. According to the World Bank (2003), there is little documented evaluation of the quality of physician care in Bangladesh, in both the public and the private sectors. PDP is a proven step in developed countries; thus, customized versions of such programmes have a place in Bangladesh that must be vigorously pursued. Combining this approach with periodic certification requirements ought to go a long way in improving health care provision in the country. The practice of limiting the maximum number of patients to be visited by a physician in a day could also be imposed in both the public and private hospitals. While this measure might lead to an increase in costs per patient visit, the gains from quality treatment due to lower patient loads should be reflected in fewer mistakes, fewer returns for additional service, and hence lower overall costs.

The significant contribution of nurses to patient satisfaction in Bangladesh also ought to be noted. Unfortunately, the number of nurses in Bangladesh today imposes serious constraints on health service delivery. Currently there are only eleven nurses for 100,000 people in Bangladesh compared to 94 in India and 103 in Sri Lanka (Ministry of Health and Family Welfare 2004). In addition, the nurses are also not equipped with the right behavioural and technical skills. Rahman *et al*. (2002) indicate that patients were very dissatisfied with their behaviour and inefficiency. Our findings for urban areas do not support such a strong position: patients were not 'very' dissatisfied with them. We hasten to add, however, that a larger sample covering hospitals in rural areas may provide alternative insights.

Bangladesh and its development partners (e.g. the World Bank and WHO) have recently taken steps to further the development of nurses by conducting behavioural change courses and introducing nursing standards at different hospitals. However, much more needs to be done. There is a general notion in Bangladesh that people entering the nursing profession usually come from the lower socio-economic strata. Coming with attitudes and concepts from their world of struggle, their attitudes may be difficult to change. While such a belief is debatable, there is no denying that the nursing profession should be accorded more social status to attract others, especially from the upper strata, to provide this vital service. This might be accomplished by offering a higher salary, fringe benefits, free technical and behavioural training, free placement of their services in the country and abroad, and promoting their role and status more widely. The private health sector is better resourced to actively pursue and promote higher nursing standards and to guide the health care sector in this regard.

It is also pertinent to note that health care service providers and planners in Bangladesh are often more concerned about the cost of health care rather than its quality. They feel that people in Bangladesh do not want to pay more for higher service quality. This study suggests that cost is not a significant contributor to patient satisfaction, especially for the private sector and for those availing of foreign hospitals: instead the quality of service is much more important. Consequently, policy makers must recognize that a class of patients prefers quality services to a cheaper but inferior solution that may add to future costs. It may be useful, therefore, to look at health service delivery from a market segment perspective where costs are emphasized to a specific segment and service is emphasized to others, but with the right balance that meets minimum standards.

The matter of Baksheesh represents a double-edged issue for the health care system; while it increases the efficacy of services received, it also serves as a disadvantage to those who are unable or unwilling to accommodate this demand, and thereby receive lower levels of services. Hospitals could outlaw this practice, but only if they can make alternative arrangements to better compensate service providers, especially the lower level staff.

A comment about the measures we used in this study is also pertinent. The derived factors used in the analysis are different from the ones originally proposed, yet they make clear sense in that people apparently evaluate medical care not so much by service factors but by personages or service providers when such personages are identified in the scales. Since we used the terms 'doctor' or 'nurse' (instead of staff or personnel) in this study, instead of assessing hospital services along the service quality dimensions initially posited, respondents assessed the personages and evaluated them comprehensively along the service dimensions. This raises interesting questions about how service recipients evaluate services (by provider categories or by service dimensions) that need to be examined in future research.

Finally, since the study was conducted in Dhaka City, we caution against generalizing the results to the context of the entire country. The models also compare the better hospitals in the city and the ones selected abroad. They may be considered as benchmark hospitals against which services of others could be compared and improved.

Conclusion

We contend that improving medical care in Bangladesh requires attention to service features that are regularly rated by patients. These features include doctors, nurses, tangibles, process features, etc. However, additional organizational and extra-organizational issues that play a vital role must also be addressed to improve the health care system. For example, studies are needed to examine the influence of political elements, the commitment of the higher authorities of the MOHFW (especially those in the Directorate of Health), the cooperation and coordination achieved with affiliated ministries such as the Ministry of Establishment (for recruitment purposes) and the Ministry of Finance (which makes funds available), and the role and quality of involvement of the development partners (e.g. the World Bank, USAID, WHO, UNFPA, etc.). Changes in attitudes and practices at these higher tiers of the health design and delivery system, where human, financial, technical and policy matters are negotiated, are essential for the health care system to respond optimally and provide the needed services to deliver patient satisfaction.

More specifically, the influence of party politics (who gets hired, who approves purchases), corruption at the MOHFW and Directorate of Health (who gets foreign or local training, who gets posted where, who is recommended for promotion, etc.), conditions imposed by the Ministry of Establishment and Ministry of Finance (in matters of recruitment, purchase of expensive diagnostics equipment and related budgetary

matters), and the purported interfering, imposing and intrasigent nature of the development partners also need to be examined. Failures at these levels have significant ramifications for any improvements at the service delivery level. An example is the recent imbroglio in Bangladesh between the development agencies and the MOHFW in regard to the right approach to health care service delivery, which has led to much bickering, conflict and stoppage of funds for staff salaries and purchases of essential drugs (*The Daily Star* 2006). Many feel this has seriously undermined the health and family planning progamme in Bangladesh. Unless these intertwined and networked structures of power and influence see eye-to-eye and demonstrate a spirit of collaboration and goal orientation to fulfill their mission of alleviating Bangladesh's health challenges, changes at the service delivery level may remain seriously encumbered.

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Appendix 1

Independent variables: items measuring determinants of patient satisfaction

Doctors' service orientation:

X50: Doctor was willing to answer any question.
X45: Doctors explained the purpose of the diagnostic tests.
X46: Doctors explained the test results.
X44: Doctor gave clear advice to patients about the prescriptions.
X51: Doctor listened to you attentively.
X53: Doctor was caring.
X39: Doctors provided logical answers to questions about my condition.
X52: Doctor appropriately discussed your previous condition.
X40: You felt safe in the hands of the doctors.
X31: Doctors attended to you sincerely whenever needed.
X38: Doctors were competent in diagnosing the problem.
X23: Doctors followed up on the treatment.
X25: Doctors provided correct treatment the first time.

Nurses' service orientation:

X54: Nurses were caring.
X30: Nurses attended to you sincerely when needed.
X29: Nurses were quite willing to respond when needed.
X48: Nurses communicated patients' needs to doctors.
X55: Nurses gave individual attention to patients.
X24: Nurses administered treatment in a timely manner.
X47: Nurses communicated patients' needs to doctors.

Tangibles (hospitals):

X6: Hospital was visually appealing.
X10: Cabin/ward, beds and floors were clean.
X19: Toilets and bathrooms were clean.
X7: Hospital premises were neat and clean.
X9: Health care centres had modern equipment.
X18: Operation theatre and instruments were clean.

Tangibles (staff):

X16: Doctors were clean in appearance.
X17: Nurses were clean in appearance.

Access:

X4: It was easy to get a bed/cabin.
X2: Hospitals had adequate number of doctors.
X3: Hospitals had adequate number of nurses.

Process:

X70: Patient records were well maintained.
X69: Patient release procedure was properly followed.

Treatment costs:

X57: Doctors' consultation fee was high.
X58: Lab test fee was high.
X61: Drug cost was high.
X60: Travel cost was high.
X63: Accommodation cost was high.

Baksheesh:

X68: To receive good service required payment of Baksheesh (extra payment).
X62: A higher price had to be paid to obtain better nursing service.

Measures of dependent variable (satisfaction):

X71: You were pleased with the hospital's services.
X72: Treatment outcome was good for you.
X73: Overall, the quality of services was excellent.
X74: You would recommend the services of this hospital to your friends/relatives.
X75: In future, if you feel unwell, you will return to this hospital for services.