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Examining Patient's Behavior to Explain Dissatisfaction towards Healthcare Providers

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This study seeks to check the reasons why patients change their healthcare providers. The respondents were selected from a semi-urban area; a sample size of 347 respondents in 2014. The study found that such behavior is initiated by lack of reliance, poor physical facilities and high cost of the service provider. Therefore, public policies should take the necessary steps to improve healthcare services in both private and public sectors.

Field of Research: Economics

1. Introduction

Nowadays, people are concerned about their health care service and dissatisfaction push them to switch their health care provider for better treatment. And this happens not only in urban areas, but also in semi-urban areas. Hence, it is time to evaluate the quality of health care services. The demand for analysis of health service is gaining momentum with growing awareness about health care, increasing private investment and rising government concern about human capital. This study examines patients' behavior to explain the dissatisfaction of individuals towards health care providers.

A very interesting question to evaluate the healthcare service is: Why patients change the healthcare provider they initially selected? Clearly, patients' switching of healthcare services reveals their dissatisfaction. Both patient's economic condition and slackness in healthcare providers' service can trigger patient's preference to switch. If there is any institutional flaw that leads to switching, incidents other than concern for cost, we have scope for policies regarding better management of healthcare.

Patients might misunderstand the technical quality of a healthcare organization (Donabedian, 1980, 1982) and thereby draw conclusion about its quality judging only the functional aspect that refers to the manner in which services are delivered to the patients. Thus, patient opinion about the quality of a healthcare organization is perception-based (Schneider and White, 2004). But it receives high emphasis in current literature in the evaluation of healthcare (Calnan, 1988) as opposed to traditional approach of assessing the viewpoints of healthcare providers or authorities. Customer (patient) satisfaction may influence the organization's reputation through its impact on overall satisfaction (Mittal and Baldasare, 1996), motivate

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choice of future care provider (Croucher, 1991) and provide important clues to service providers to ensure its competitive position (Curow, 1986). Particularly, customer satisfaction has greater implication in the assessment of the healthcare system of a country like Bangladesh with persistent poor quality in the sector (Andaleeb, 2000; Mahdy, 2009) along with widespread slackness in supervision, low accountability and high corruption rate (Hasin et. al, 2011). Such inefficiencies nearly ruin continuous government assistance in health sector (Bangladesh allotted 1.06% of GDP in 2010 in her budget for public healthcare, World Bank, 2010) and force about 70 percent of our population to be dependent on private healthcare providers that include substantial unqualified providers too (World Bank, 2003). This has facilitated inefficiencies among private healthcare too either in the form of excessive cost or negligence, low quality service, absenteeism, and so on, and has caused a surprisingly high outflow of patients to prefer foreign healthcare providers (World Bank, 2003; Consumers Association of Bangladesh – CAB, 2003).

The objective of this study is to seek answer(s) to a simple question: how does patient's perception about healthcare service quality influence his/her choice of provider? Eliciting consumer preferences is gaining attention for its increased application in policy making in environmental economics (Bateman and Willis, 2001), understanding demand in transport sector (Fowkes, 2000), measuring market demand (Onyango et al. 2004), checking choice models in health sector (Brower and Bateman, 2005), and so on. Such preference-related models may use either revealed preferences data or stated preferences data. However, few studies employ both types of preferences (Verhoef and Franses, 2003). According to Pereira et al. (2007, pp. 26), "Revealed preferences data are drawn from the past behavior of consumers, as observed in market situations, where consumers make real choices. Stated preferences data are obtained through surveys, that is, stated preferences choice games, where consumers state their preferences when faced with choices which may or may not mimic real case scenarios." The advantage of incorporating revealed preference approach is that it emphasizes only on observed consumer behavior to conduct demand analyses without adopting any assumptions about the functional specification of demand or preferences. Conventional studies focus on quantitative measurement of healthcare service quality (Babakus and Manggold, 1992; Sohail, 2003; Andaleeb, 2007). Many researchers have also critically valued the healthcare delivery processes in search of appropriate policy suggestions (Dey and Hariharan, 2008; Krupka *et al.*, 2008). Most of the research has been conducted on urban area. Here, we tried to examine the patient's behavior towards healthcare providers in semi-urban areas. Our sample area was Tultikor Union of South Surma, Sylhet, which has a private hospital within 1 km, a public hospital and other three private hospitals within 5 km along with a couple of private clinics, community clinics etc.

Our focus is on individual choice making and the role of perceived quality of healthcare organizations in this process. Healthcare providers are considered as heterogeneous based on their service qualities and deviant behaviors of individuals are attempted to be explained by their perception about these qualities along with their socio-economic conditions.

This research paper was organized in such a order that section 2 discusses Literature Review, section 3 explains the Methodology and the Model, section 4 explains the Findings of the Research and at the last, section 5 shows the Summary and Conclusions.

2. Literature Review

Frequent attempts are there to quantify healthcare quality incorporating customer satisfaction under varied environment that influences perception of satisfaction as well as definition of healthcare system (Badri et al. 2009, Naidu, 2009). The issue of customer satisfaction is being carried out from the analysis of Total Quality Management (TQM) of business organizations to two special sectors – education and healthcare with a view to establish a generalized structure to evaluate different types of activities of different educational and healthcare organizations (Rashid and Jusoff, 2009). Later developments led us to establish perception-based scales, like SERVQUAL and SERVPERF that possess standardized and scientific tools for the measurement of the quality of service (Parasuraman et al., 1988; Cronin and Taylor, 1992). Public healthcare system in Bangladesh is widely criticized for its low quality service initiated by absentee physicians (World Bank, 2003), presence of intermediaries (Hasin *et al.*, 2011), unpunished corruption (Hasan, 2005), and so on. The paper (Rahman and Kutubi, 2013) attempted to identify the service quality activities conducted on patients of different hospitals in Dhaka city that influence patient's satisfaction with private hospitals. This research was also conducted on urban areas. Service quality of healthcare system depends on organizational efficiency of the hospitals, clinics and other service providers that involves both individual activities and overall organizational system. Such organizational performance is strongly related to customer satisfaction and researchers identified service quality as the most important factor to approach customer satisfaction (Narang, 2010). Various instruments for the quality assessment of healthcare system have been evaluated in the literature (Haddad et al., 1998b; Baltussen et al. 2002; Duong et al. 2004).

3. Methodology and Model

Instead of measuring contribution of perception based factors on scales like SERVQUAL or SERVPERF, we examined the relative effectiveness of some established perception-based factors defining healthcare service quality on patient's behavior. Patient's behavior is defined by his/her action that changes the healthcare provider chosen first. In this sense, our analysis was based on consumer's revealed preference of healthcare service provider. A patient undergoing treatment under the supervision of any formal or informal healthcare provider can opt for changing the provider if (i) the patient is highly dissatisfied with the healthcare provider or (ii) the patient deems the cost as too expensive.

Debates are still on about the efficiency of scales like SERVQUAL or SERVPERF in measuring healthcare service quality in terms of reliability, validity and predictability as well as generality (Cronin and Taylor, 1992; Jain and Gupta, 2004; Schnieder and White, 2004; Kaul, 2007; Narang, 2008). Also, it has been observed in various qualitative research factors related to consumer satisfaction in healthcare, education, and so on that such services should be designed with the consideration of socio-economic structure, culture, etcetera. (Aldana et al., 2001; Atkinson and Haran, 2005). We mainly followed Andaleeb (2007) and Sadiq (2003) with necessary modifications to incorporate some intuitions of other researchers along with local health workers and service providers. The questionnaire for measuring five factors of service quality contained 27 questions (***reliability*** had 8

questions, ***empathy*** 7, ***responsiveness*** 4, ***tangibility*** 4 and ***expenditure*** had 4 questions), each rated on a 5.0 point Likert scale (where point 0 indicates "strongly disagree" and point 5 indicates "strongly agree"). We used principal component analysis to reduce attributes in each dimension to derive measurement for our desired factors. However, our model may suffer from heteroskedasticity for income inequality, individual specific difference in distance from service providers, type of disease, and so on. We avoided including data from patients of sudden injuries, blood hemorrhage (*stroke*), heart failure, appendicitis, and so on, who have very little time and space to choose between healthcare service providers. We also collected data from Tultikor Union of South Surma, Sylhet, which has a private hospital within 1 km, a public hospital and another three private hospitals within 5 km, along with couple of private clinics and community clinics. As noted earlier, Bangladesh's healthcare system includes formal service providers like public and private hospitals, community clinics, private clinics, along with various informal service providers like practitioners of Homeopathy, *Ayurvedi*, *Kabiraji* and *Hekimi*, spiritual or faith healers and dispensary workers. We collected data from households in the area and incorporated a dummy (***private health care seekers***) that takes the value 1 if the patient first seeks health related help from a private service provider. As we have avoided data from floating people, patients seeking medical help from private providers first definitely have better socio-economic and cultural status than others. This research was conducted using 347 respondents, among them, 165 male and 182 female patients. Since it is a primary data, the sample size was limited due to limited budget, a larger sample size could yield better results. Data was collected between August to September in 2014. In our sample, 47 patients seeking private healthcare service earn more than taka 1000 per week whereas this number is 29 for patients going to other healthcare organizations.

We also incorporated two more dummies in our set of explanatory variables to control types of diseases and types of patients. Critical diseases, like cardio-vascular diseases, paralysis, kidney troubles and cancer require special attention, equipment and experts. Dummy variable, ***usual diseases*** take the value zero for these diseases. Also, we incorporated other dummy chronic patients that take the value one for patients who have been suffering from a disease for a longer period of time (at least six months).

We therefore considered a heteroskedastic probit model:

$$y_i^* = x_i'\beta + \varepsilon_i$$

Where i indicates a patient, $y^* = 1$ is the patient's decision to change the healthcare provider, x is the set of independent variables containing the predictive factors of patient's satisfaction, β a corresponding coefficient vector and ε is a normally distributed error term satisfying

$$E[\varepsilon_i] = 0$$

$$V[\varepsilon_i] = \sigma_i^2 = [\exp(z'\gamma)]^2$$

and $\text{cov}[\varepsilon_i, \varepsilon_j] = 0, \; i \neq j$

Where z is a t × 1 vector of regressors determining the variance of the heteroskedastic error term, and γ is the corresponding coefficient vector (Cornelißen, 2005). We considered only the dummy variable private facility users in our z matrix. In this model, the dependent variable is switch –that takes the value 1 if the patient has switched his/her health service provider once while taking the service and 0 otherwise. Following the definition, it is obvious that we revealed the preference model. Here, heteroskedastic probit model was used because it is a perception-based study and its pdf is continuous. Individual effect is present in the sample. It is obvious that individuals within the sample are different depending on income, distance and type of emergency.

4. Findings

Our probit regression converges within 4 iterations and show good significance (based on Wald χ^2 criteria: $\chi^2(7) = 22.85$ which is significant at 5 percent level of significance). Regression results are presented in table 3 while table 1 describes a detailed break-down of instruments along with factor scores and table 2 provides a brief variable description.

Table 2 depicts that reliability, tangibility and expenditure have high positive means for patients who have switched their healthcare service provider. Also, it shows that switching is prominent in all types of service providers though it occurs more for private providers. This table also reveals that there are a few critical patients (38) and even fewer chronic patients (4). Respondents were from rural area having lower levels of education. More than 77 percent of these patients were more than 25 years old, but only 10 percent had more than 10 years of schooling and less than 55 percent had 5 years of schooling. There were 165 male and 182 female patients in the sample of 347 respondents. Among them, 234 are currently married. The rest are single (unmarried, separated or widowed). Only about 24 percent of the patients in our sample seek healthcare from public facilities while about 20 percent go to various informal healthcare service providers. Thus, about 56 percent patients are dependent on private healthcare services.

Table 3 reveals that patients are used to switching their healthcare service providers based on their perception about reliability, tangibility and expenditure of these organizations. It is found in this study that a patient is likely to switch a healthcare organization the most (probability rises by 0.07 per point rise in expenditure factor) if he/she feels it is charging highly and unduly. As we have included consultancy fee, charges of diagnostic tests and costs for drugs under expenditure factor along with all sorts of rents, we suspect that patients may find various unseen costs and exaggerated expenditures only when they are taking the service. This may work as a push factor.

Tangibility possesses the second greater threat for the healthcare providers as the chances are also more by 0.07 for a patient to change his/her healthcare provider for one point degradation in the factor. Here again, we have included some features, like availability of good sanitary facilities, regularity of assisting staffs, water condition, and so on, that generally remain unseen until anyone has the chance to go through a treatment process.

Reliability cause patients to become more likely (by 0.06) to change their decision of taking healthcare from certain organization, it is the third perceived significant satisfaction factor. Here too, we find that a patient can better know about the sincerity and regularity of physicians and other staffs only when he/she receives treatment. Both empathy and responsiveness carry wrong signs with insignificant values. Thus, it is possible that they are not evaluating good manners and follow up observations or visiting regulation as they value various expenses, recovery rate, doctor's availability, and so on.

Table 1: Factor analysis of the instrument

Items	Component Score Coefficient Matrix	Communalities after Extraction
Reliability		
Diagnostic tests were necessary	0.18	0.13
Good supply of drugs	0.17	0.11
Specialist physician service	0.35	0.47
First treatment was correct	0.28	0.30
Doctors are available in time of need	0.31	0.37
Health care facility is accessible	0.18	0.13
Doctor's appointment is available	0.28	0.30
Recovery rate is satisfactory	0.20	0.15
Empathy		
Patient receives updates	0.16	0.21
Patient understands his/her condition	0.23	0.43
Stuffs explain medicine	0.22	0.38
Assistance are available	0.26	0.55
Respect for patient	0.25	0.49
Compassion to patient	0.25	0.48
Support to patient	0.18	0.27
Responsiveness		
Good diagnosis	-0.36	0.32
Quick diagnostic tests	-0.34	0.27
Observation and follow up	0.47	0.52
Good visiting regulation	0.43	0.44
Tangibility		
Clean premise	0.29	0.73
Regularity among assisting staffs	0.28	0.69
Good dwelling facilities	0.30	0.79
Good sanitation and water	0.29	0.73
Expenditure		
Consultation fee is justified	0.31	0.58
Charges for diagnostic tests are justified	0.36	0.76
Costs for drugs are justified	0.33	0.63
Rents are justified	0.28	0.47

Notes: Extraction Method: ***Principal Component Analysis*** with single factor extraction. Rotation Method: ***Varimax*** with ***Kaiser Normalization***.

Table 2: Descriptive statistics of major variables

	Switched healthcare service provider					Did not switch healthcare service provider				
Variable	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max
Reliability	110	0.25	1.11	-2.73	3.43	235	0.13	0.92	-2.47	3.76
Responsiveness	110	-0.14	1.05	-3.31	3.17	237	0.07	0.97	-2.91	2.34
Tangibility	110	0.19	1.10	-2.55	3.02	236	0.09	0.94	-2.55	1.92
Empathy	109	0.03	0.96	-2.46	2.49	235	0.01	1.02	-2.06	4.14
Expenditure	109	0.30	1.06	-1.54	3.15	237	0.14	0.94	-1.54	3.15
Healthcare type:	Private: 64 informal: 46				Public &	Private: 132 informal: 105				Public &
Disease type:	Usual:				101	Usual:				208
	Critical: 9					Critical: 29				
	Chronic:				2	Chronic:				2
Patient type:	Occasional: 108					Occasional: 235				

Table 3: Heteroskedastic probit model for revealed preference to health care system (Sample size 347 with 108 switching health facility at least once)

Dependent variable: Revealed preference to health care system	Coefficient	P value	dy/dx	P value
Reliability	0.24	0.03	0.06	0.02
Responsiveness	-0.12	0.25	-0.03	0.25
Tangibility	0.28	0.02	0.07	0.01
Empathy	-0.16	0.19	-0.04	0.17
Expenditure	0.31	0.00	0.07	0.01
Usual Diseases	0.66	0.17	0.14	0.08
Chronic Patients	0.86	0.38	0.23	0.38
Constant	-1.36	0.01	0.12	0.02
$\ln\sigma^2$				
Private Health Care Seekers	0.66	0.02	0.06	0.02
Likelihood test for $\ln\sigma^2 = 0$: (prob. > $\chi^2 = 0.02$)	$\chi^2(1) = 5.83$		Predict (Switch) = 0.30	

The assumption of heteroskedasticity is proved by the highly significant (1 percent level) χ^2 test for the variance model. Even if we include per person earning (taka amount for last seven days), we do not have our results greatly changed (Table – 4, Appendix I). The result shows that patients going to private health care services have more than sixty five percent probabilities to switch healthcare service provider. However, it is not certain that these

patients are going towards public health facilities. Nonetheless, we can at least deduce that though the private healthcare providers are enjoying high demand for their services, they are not delivering them properly and justly with a resulting dissatisfaction among their patients so high that they switch their primary decision for healthcare. So our findings indicate that, not only public health care but also private health care facilities should be supervised properly.

5. Summary and Conclusions

We have shown that for people dwelling in a semi-urban area and having access to multiple healthcare facilities, there are dissatisfactions among the patients generated by lack of reliability, tangibility and cost effectiveness that lead at least some of them to switch the healthcare service providers they initially chose. We also found a higher flow of patients to private healthcare facilities coupled with a high probability of switching behavior that may lead to incomplete treatment, informal treatment or re-admission in public healthcare facilities. Because of the resource constraint and a fast growing population, Bangladesh has to depend on private healthcare facilities. Though there are signs that the private sector is attracting more patients, it is unfortunate that it is not always providing quality services. This may be a reason behind the huge number of patients seeking medical help abroad.

It has been revealed that not only private healthcare providers but also public facilities may become expensive for patients. It is very difficult to get our health system cleaned from intermediaries and unseen costs. But steps are necessary to control the illegal dealings in public healthcare service, as well as unseen costs in private organizations. It is evident that both public and private healthcare facilities are suffering severe management problems as patients are getting annoyed with poor management of cleanliness, utility services, absenteeism from work, and so on. Because of budget constraint and limited time, the sample size could not be increased. Further researches should cover rural areas as well as the whole of the Bangladesh health sector in order to improve health care service quality.

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Appendix I

Table 4: Heteroskedastic probit model for revealed preference to health care system controlled by both private health care seekers and earnings in last seven days

Dependent variable: Revealed preference to health care system	Coefficient	P value	dy/dx	P value
Reliability	0.25	0.03	0.06	0.02
Responsiveness	-0.12	0.24	-0.03	0.24
Tangibility	0.30	0.02	0.07	0.01
Empathy	-0.17	0.18	-0.04	0.17
Expenditure	0.32	0.00	0.08	0.00
Usual Diseases	0.66	0.18	0.14	0.09
Chronic Patients	0.92	0.35	0.24	0.36
Constant	-1.38	0.01		
$\ln\sigma^2$				
Private Health Care Seekers	0.67	0.02	0.13	0.02
Earning in last seven days (Taka)	0.00	0.45	0.00	0.45
Likelihood test for $\ln\sigma^2 = 0$: (prob. > $\chi^2 = 0.03$)	$\chi^2(1) = 6.79$	Predict (Switch) = 0.30		