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Cardiac Patients' Perception of Healthcare Services in Hospitals of Bangladesh

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Abstract

This study explored the perception of cardiac patients about cardiac healthcare services in hospitals of Dhaka, Bangladesh. The study has identified 22 health care service facilities applicable for cardiac hospitals. As noted, the patients are overall satisfied with the facilities but with a varied degree. The most satisfied facilities are i) continuous power supply, ii) clean medical wards, iii) doctors' explanation to the patient & their family, iv) simple and user-friendly paper works, v) timely service, vi) Doctors availability, vii) adequate security system, viii) availability of stretchers/wheelchairs. The moderately satisfied facilities include i) reliable doctors, ii) accurate laboratory test results, iii) good ventilation of the rooms/medical wards, iv) quick admission and provision of bed, vi) prompt emergency services, vii) constant supervision in the ICU, viii) food quality, ix) friendly & cooperative nurses, x) reasonable treatment cost, xi) friendly support staff, xii) nurses availability, xiii) reliable nurses. The least satisfied facility is found to be i) the hospital's supply of medicine and other items. The patients agreed that the hospital where they are treated can be recommended to others. Hence it can be said that the cardiac hospitals in Bangladesh are taking good care of their patients and giving reliable services.

ISSUE

The prevalence of cardiovascular diseases (CVD) is increasing worldwide, particularly in low- and middle-income countries (LMICs). Due to lack of preventive care and screening for CVD risk factors, people in LMICs often develop CVD at a younger age and have poorer outcomes (Gupta, & Yusuf 2019). CVD is major cause of disability in the LMIC of Bangladesh, accounting for 13% of all disability-adjusted life years (DALYs) lost (Alam at el., 2021). Specialized treatment facilities for cardiovascular diseases are mostly located inside Dhaka and other metropolitan areas. As a result, people with heart ailments crowd the city hospitals. In South Asia, cardiovascular diseases (CVDs) are an increasing public health concern. One strategy for dealing with the growing CVDs epidemic is to make health facilities more ready to provide CVDs services (Huda et al., 2024). Male peoples may be considered as the prone to coronary heart disease (CHD). Frequencies of younger CHD respondents may pay attention to health professionals as well as the policy makers. People's physical inactivity may be a cause of epidemic of several chronic diseases like cardiac diseases. Frequencies of hypertensive as well as diabetic cases among such respondents are also alarming (Khandoker et al. 2023).

Bangladesh is one of the emerging developing countries in the world. It has a large population which suffers from poverty, illiteracy and malnutrition. The people are exposed to various health threatening issues and a wide range of diseases, especially cardiac disease (Islam et al., 2017). Cardiac disease is one of the prime causes of morbidity and mortality in Bangladesh have becoming more and more common across the ages as the day progresses (Hossain & Amin, 2023, Rahman, 2010). It seems that although different initiatives and measures have been taken, the outcome has not been up to the mark yet (Kabiruzzaman et al., 2012). In fact, the sector has made advancements over the years with several specialized hospitals and different initiatives and measures. These hospitals are quite adequate with experienced doctors, skilled nurses and sophisticated medical tools (Uddin & Safiullah, 2021).

Even then a significant segment of cardiac patients goes abroad for treatment as well and this incurs a huge loss for the country (Akter et al. 2024, Kumar et al. 2021). While it is true that this section of our health sector is still not up to the same standard in comparison to other more developed nations, many patients do not give it any thought and automatically prefer going abroad for treatment. This phenomenon exists although the sector has made advancements over the years. As patients pursue treatment in local hospitals, a variety of factors, like treatment facilities, costs, hospital environment, quality of the doctors and even proximity to their residences, etc., influence these choices. Hence, it is important to understand the stake-holders perception of the services provided by the hospitals (Andaleeb, 2000).

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Cardiac diseases, such as ischemic heart diseases, stroke, and heart failure are one of the major chronic diseases and are the leading cause of death and disability in Bangladesh. Smoking and smokeless tobacco consumption increases possible risk factors for coronary heart disease among young patients (Rahman & Zaman, 2008). A study of NICVD shows that almost 32% of the hospitalized patients are in between 41 to 50 age group, which suggests that premature occurrence of cardiac diseases is quite common. The mean age of hospitalized cardiac patients is remarkably lower than other related studies done abroad (54.1 years with a standard deviation of 15.3 years). The single most common etiology for heart failure is ischemic heart disease in this population (Kabiruzzaman et al., 2012).

The male to female ratio for this disease in Bangladesh is 8:1, which is higher compared to other countries. The prevalence of cardiovascular disease (CVD) is known to be high in people of South Asian descent (Jabeen & Haque, 2010). High blood pressure is one of the most important direct causes, accounting for 60 percent of all strokes and 50 percent of all heart diseases. Nearly 15 million adults have been suffering from hypertension, among them, 49.0% in urban and 17.0% in rural elderly hypertension population are found aware of their high blood pressure (Hossain, et al., 2012).

The common cardiac disorders encountered in Bangladesh include congenital heart disease, hypertensive heart disease, ischemic heart disease, mitral stenosis, and rheumatic heart disease. Statistics on the incidence of different types of heart ailments is not available for the population of Bangladesh. A cross-sectional study conducted on doctors, nurses and support staff serving at the Emergency Department of a Cardiac Hospital noted that the services provided by the doctors and nurses were adequate (Rashid & Amin, 2011). This was in line with a similar survey conducted on the patients in the institute simultaneously.

However, several problems were identified. About a third of the patients were taken to the emergency services on foot which piled pressure on an already ailing heart, due to a lack of wheelchairs and stretchers. A significant portion of doctors (40%) held the view that support staff were not adequate to run the Emergency Department smoothly. Nurses criticized the lack of proper management, like inadequacy of nurses, scarcity of porters, cleaners in every shift & security problem. Over 22% of the support staff viewed ED as overloaded, which correlates well with doctors' opinion.

A study by Acharya & Sen (1997) attributed the poor performance of the healthcare sector to (i) absence of critical staff, (ii) unavailability of essential supplies, (iii) inadequate facilities, and (iv) poor quality of staffing. The problems of supervision and accountability exacerbate the problems; and if corrupt practices are added to the list, it is not difficult to imagine the predicament of the patients. There are substantial reports that have criticized medical education for emphasizing scientific knowledge over biologic understanding, clinical reasoning, practical skill, and the development of character, compassion, and integrity (Sayeed, 2010).

Literature suggests that patients worldwide do not engage in rational or "consumerist" behavior when searching for or choosing physicians. They instead rely heavily on recommendations from family and friends and engage in limited searches for alternative physicians (Lupton, et al., 1991). But the increasing availability of information with which to evaluate physician quality has the potential to make the process of choosing physicians more active by reducing the cost and time needed to assess the costs and benefits of seeking care from alternative practitioners (Weiss & Blustein, 1996).

When it comes to the treatment of cardiovascular diseases, patients have various choices, as up to 14 different quality hospitals and institutions now provide treatment for cardiac diseases. A variety of factors influence these choices, varying from the treatment facilities, costs, the hospital environment, the quality of the doctors and even proximity to their residences (Hossain et al. 2011). A significant segment of cardiac patients goes abroad for treatment as well and this represents a huge loss for the health sector. While it is true that this section of our health sector is still not up to the same standard in comparison to other more developed nations, many patients do not give it any thought and automatically prefer going abroad for treatment. This phenomenon exists although the sector has made advancements over the years.

There is limited coordinated data on characteristics of the patients' perception in terms of choosing one hospital or doctor over another or even in some cases going abroad for proper treatment. It is important to understand the present perception of cardiac patients regarding various aspects and services received while taking treatment. This affects the mindset of a patient and that of the patient's family and directly relates to customer satisfaction (in general) and in some cases, the recovery and mental satisfaction of the patients or their families. Keeping these in mind, this study tried to identify the perception of cardiac patients of the services offered by the cardiac hospitals. The findings of this study can be useful for hospitals to increase their customer satisfaction and evaluation.

OBJECTIVES

The broad objective of the study is to find out the overall perception of cardiac patients about domestic healthcare services in Bangladesh. Specifically, this study will investigate cardiac patients' perception of the i) hospital management, ii) hospital staff (i.e., doctors, nurses and other members), iii) general facilities, iv) marketing activities of the hospitals.

METHODOLOGY

The research involved both primary, secondary data and pertinent literature review. The secondary data included books, journal articles and reports relevant to this sector. In addition, interviews of doctors and specialists were also

conducted. A total of 197 cardiac patients were surveyed, seeking medical treatment at different hospitals in Bangladesh, using a non-probability convenience sampling technique. The survey is conducted through a questionnaire developed through a coordination schema (Appendix 1). The responses are found reliable and consistent with Cronbach's alpha of 0.836. The study used face validity to identify the variables. Statistical tools like index analysis, t-test, correlation analysis, factor analysis and regression are conducted to analyze the data. The scope of this research includes only the cardiac patients who seek medical treatment in Bangladeshi hospitals with cardiac facilities.

FINDINGS AND ANALYSIS

Respondents' Profile

The study has surveyed 197 cardiac patients of which 59 are females (29.9%) and 138 are males (70.1%). The mean age of the patients is 48.86 years (σ=14.5 years) with a range of 5~95 years. Most of the patients are service holders (81, 41.1%), followed by businesspersons (73, 37.1%). Quite a few of them are in farming (16, 8.1%), teaching (10, 5.1%), banking (8, 4.1%), and other (9, 4.6%) professions. The mean monthly income of the respondents is $468 (σ=$528) with a wide income range ($35~$529).

Most of the respondents have not come across any form of advertisement of the hospitals they have received the service (136, 69%). Those who have seen the advertisement (61, 31%), about 54.1% said it helped them to choose the hospital. Most of the respondents reported that the hospital where they were treated did not get any feedback on their service (126, 64%). It is found that most of the patients have chosen the hospital (130, 66%) after getting positive feedback from their friends and relatives. The hospitals/clinics where the patients get treatment are tabulated below (Table 1).

As noted, the majority have taken service from National Heart Foundation (NHF), a not-for-profit foundation, that gives quality cardiac care at an affordable cost. Evercare and Ibrahim Cardiac are comparatively expensive private hospitals. The BSMMU and NICVD are public hospitals with low cost and give not so good services. Also getting admission is difficult in these hospitals and always there is a long queue. The other specialized hospitals' costs vary from average to high.

Table 1. Name of Hospital/Clinic

Hospital name	Frequency	%
National Heart Foundation (NHF)	79	40.1
Evercare Hospital*	21	10.7
BSMMU	28	14.2
NICVD (National Institute of Cardiovascular diseases)	26	13.2
Ibrahim Cardiac Hospital*	19	9.6
Other specialized hospitals *	24	12.2
Total	197	100.0

Analysis of Simple Variables (Health Care facilities)

The study has identified 22 health care facilities prFvided by the hospitals, and the respondents are asked their satisfaction level to each of them in a 5-point Likert scale (+2: highly satisfied, -2: highly dissatisfied). The mean indices of the responses are tabulated in Table 2. As noted, the patients are overall significantly (α=5%) satisfied with the facilities but with a varied degree. The most satisfied facilities are (μ>1.33): i) continuous power supply (1.66), ii) clean medical wards (1.47), iii) doctors' explanation to the patient & their family (1.41), iv) simple and user-friendly paper works (1.41), v) timely service (1.40), vi) Doctors availability (1.38), vii) adequate security system (1.36), viii) availability stretchers/wheelchairs (1.34).

The moderately satisfied facilities include (1.33≥μ>0.67): i) reliable doctors (1.25), ii) reliable test results of the laboratory (1.25), iii) medical ward is well ventilated (1.25), iv) prompt to provide a bed (1.24), v) can be recommended to others (1.21), vi) prompt emergency services (1.20), vii) constant supervision in the ICU (1.03), viii) food quality is good (0.94), ix) nurses are friendly & cooperative (0.90), x) reasonable treatment cost (0.88), xi) support staff was friendly (0.86), xii) nurses available (0.84), xiii) nurses are reliable (0.84). The least satisfied facility (0.67≥μ>0.33) found to be i) hospital's supply of medicine and other items (0.57).

Table 2. Satisfaction level of health care facilities

Service facilities	Mean	Std. dev.	Service facilities	Mean	Std. dev.
The medical ward is clean.	1.47	0.759	The paper works are simple and user friendly.	1.41	0.850
The hospital is prompt to provide a bed.	1.24	1.059	The food quality provided to patients is good.	0.94	1.063
Doctors are always available to help when needed.	1.38	0.822	The security system in the hospital is adequate.	1.36	0.879
Doctors explains the patient & their family about the condition and medications.	1.41	0.831	Stretchers/wheelchairs are always available.	1.34	0.863
One can totally rely on the doctors for best handling.	1.25	1.037	The rooms/medical ward is well ventilated.	1.25	1.027

The authority was punctual with treatment.	1.40	0.873	Constant supervision is in the ICU.	1.03	0.947
The hospital support staff was friendly.	0.86	1.116	Test results of the hospital laboratory are accurate.	1.25	0.842
Nurses are always available for assistance.	0.84	1.069	There is no power disruptions and backup is available.	1.66	0.757
The nurses are friendly & cooperative.	0.90	1.062	The emergency services in the hospital are provided promptly.	1.20	0.951
Nurses are reliable for best handling.	0.84	1.104	The hospital supplied medicine and other supplies.	0.57	1.386
Cost of the treatment is reasonable (value for treatment).	0.88	1.154	The hospital can be recommended to others.	1.21	1.041

Group Variable Analysis

As noted, there are 22 facility attributes identified in the study (21 specific and one overall). The 21 specific attributes are again grouped into four categories: i) Hospital/Clinic management, ii) Medical facilities, iii) Doctor's service, and iv) Nurse's service (Table 3). This is observed that the patients are most satisfied with doctor's service (μ=1.35), followed by hospital management (μ=1.20) and medical facilities (μ=1.18). They are comparatively less satisfied with nurse's service (μ=0.84). The details of the broad dimensions are elaborated below.

Table 3. Group variable findings

Service facilities	Mean	Std. dev.	Service facilities	Mean	Std. dev.
Hospital management	1.20	0.243	Nurse's Service	0.86	0.035
The medical ward is clean/hygienic.	1.47	0.759	Nurses are always available for assistance.	0.84	1.069
The rooms are well ventilated/ lighted.	1.25	1.025	The nurses are friendly & cooperative.	0.90	1.062
The food quality provided to patients is good.	0.94	1.063	Nurses are reliable for best handling.	0.84	1.104
The security system in the hospital is adequate.	1.36	0.879	Medical Facilities	1.18	0.362
The hospital is prompt to provide a bed (Patient-to-capacity ratio).	1.24	0. 059	Constant supervision is in the ICU.	1.03	0.947
The paper works are simple and user friendly.	1.41	1.850	Test results of the hospital laboratory are accurate.	1.25	0.842
The authority was punctual with services.	1.40	0.873	Power supply and backup is available.	1.66	0.757
The hospital support staff was friendly.	0.86	1.116	The emergency services in the hospital are provided promptly.	1.20	0.951
Cost of the treatment is reasonable (value for treatment).	0.88	1.154	The hospital supplied medicine and other supplies.	0.57	1.386
Doctor's Service	1.35	0.085	Good support services (Stretchers/wheelchairs).	1.34	0.863
Doctors are always available to help when needed.	1.38	0.822	Overall (mean of 21 variables)	1.17	0.277
Doctors explains the patient & their family about the condition and medications.	1.41	0.831	The hospital can be recommended to others (overall satisfaction).	1.21	1.041
One can totally rely on the doctors for best handling.	1.25	1.037			

Hospital/Clinic Management

The hospital management is measured in terms of i) Hygiene/cleanliness, ii) Food quality, iii) Patient-to-Capacity ratio, iv) Security, v) Ventilation, vi) staff service, vii) Service punctuality, viii) Paperwork & ix) Cost rationality. The patients felt that the wards are clean and tidy (μ=1.47), there is enough light and air in the rooms (μ=1.25), and the rooms are not too crowded (patient-to-bed capacity) (μ=1.24). They also agree that the security measures are adequate (μ=1.36). However, the satisfaction level is comparatively low with the food quality provided by the hospital management (μ=0.94). Several patients mentioned that they bring their own food from home.

Regarding financial administration and processing the respondents are happy with the punctuality of the services (μ=1.40). Also, they found the formalities and paper works are easy to complete and that the procedures are hassle free (μ=1.41). The patients are to some extent satisfied with the staff demeanor of the hospital they are treated (μ=0.86). However, the respondents are not very satisfied with the treatment cost rationale (μ=0.88). Overall, the respondents were quite satisfied with the hospital management (μ=1.20), but there are scopes to improve in staff service and medical expenses.

Medical Facility

The medical facility is measured by the variables i) Medicine stores, ii) Laboratory services, iii) Intensive Care Unit (ICU), iv) Support service, v) Emergency management & vi) Power

Supply. Patients are most satisfied with the power supply and its backup (μ=1.66). They noted that power failures are a rarity at hospitals. They are in general pleased with the support services (Stretchers/wheelchairs) of the hospitals (μ=1.34) and the laboratory services of the hospitals and find the test results reliable (μ=1.25). They also noted their satisfaction with emergence services availed at the cardiac units (μ=1.20) and ICU care (μ=1.03). But the patients are least satisfied with the medicine pharmacy (μ=0.57). Patients need to get medicines prescribed by the physicians from outside sources. Overall, the respondents were quite satisfied with the hospital facilities (μ=1.18). Hospitals do, however, need to improve the convenient provisions of medicines for patients.

Physician Services

This was measured by the variables i) friendliness, ii) reliability & iii) availability. The patients are overall highly satisfied (μ=1.35) with the physician services of the hospital they are treated. The patients are satisfied the most with the physicians' friendliness (μ=1.41), and availability (μ=1.38), but also quite satisfied with physicians' reliability (μ=1.25).

Nursing Services

This was measured by the nurses i) friendliness, ii) reliability & iii) availability. The results indicated that the patients are somewhat satisfied with the overall nursing services (μ=0.86). They found the nurses in the hospital to some extent friendly (μ=0.90), reliable (μ=0.84) and available (μ=0.84) as per the patients' requirements. Hence there is scope for the hospital to improve in the areas of nursing services.

Overall Satisfaction

To sum up the findings on the hospital management, the study tried to find out the overall satisfaction level on the quality of the services the hospital offered by asking for their agreement that the services offered are of a satisfactory level and they would recommend the hospital to others. It is found that they are likely to recommend the hospital to others (μ=1.21). This is also supported by calculating the mean index of the 21 variables of the study (μ=1.17). We can further conclude that the patients are highly satisfied with physician services (μ=1.35), quite happy with the hospital management (μ=1.20) and facilities available (μ=1.18). However, for the nursing services there is still room for improvement (μ=0.86).

DEMOGRAPHY WISE ANALYSIS

Gender

Per Gender no perceptional difference is observed regarding the hospital facilities except the attribute 'The doctors helped me & my family to explain my condition & medicines' at 5% level of significance (Appendix 2). Here the females are found more positive towards doctors (μ=0.97) than the males (μ=0.76).

Age

Age wise also no perceptional difference is observed regarding the hospital facilities except the attribute 'Constant supervision is in the ICU' at 5% level of significance. Here a positive weak correlation (r=0.144) is observed, meaning the more the patients are the more positive attitude towards the ICU services.

Household (HH) Head Occupation

The study made ANOVA analysis to see the occupation wise response difference of the patients. Occupation wise the patients are grouped into i) service (81, 41.1%), ii) business (73, 37.1%) iii) farming (16, 8.1%), iv) teaching (10, 5.1%), v) banking (8, 4.1%), and vi) other (9, 4.6%). The analysis showed no mean response difference regarding the occupation at a significant level of 5% (Appendix 3).

Household (HH) Income

Household (HH) income wise also relationship is observed with the hospital facilities at 5% level of significance.

Location Wise Responses

The study tried to find out the response of the patients based on their home location: Urban (U), Non-Urban (NU). The findings in this respect are quite interesting (Appendix 4). It is noted that in eight cases a significant difference in responses is observed (α=0.05). These are i) The authority is punctual with treatment, ii) The nurses are always available to help, iii) The nurses are friendly and cooperative, iv) The nurses are reliable, v) The treatment cost is reasonable (costs against quality), vi) The hospital security system is adequate, vii) The ward/room is well lighted/ ventilated, viii) There are no power disruptions. In each of these cases (or non-significant cases) the urban patients are more conservative in agreement with the facility attributes. In other words, they are more critical and cautious in their observations. The non-urban residents are more positive in this regard.

Hospital (Admitted) Wise Responses

The study tried to find out the response of the patients based on their admitted hospitals. Here a major response difference is observed among the admitted patients. It is noted that the patients admitted in Evercare, NHF, Ibrahim cardiac are, in general, found to receive better services (Appendix 5).

Hospital (Admitted) Versus Residence Location of Responses

Some unique significant observations are noted between the variables' patients' hospital choice and their location of residence (Table 4). As observed, most of the urban patients are admitted in Evercare, Ibrahim Cardiac and other specialized hospitals, which are comparatively expensive. On the other hand, non-urban patients are admitted more in less expensive NICVD, NHF and BSMMU.

Table 4. Hospital/Clinic and Location Crosstabulation

Hospital/Clinic		Location		Total
		Urban	Non-urban	
Other Specialized (Square, Lab Aid, Popular)	Count	16	8	24
	% within Hospital/Clinic	66.7%	33.3%	100.0%
	% within Location	15.4%	8.6%	12.2%
	% of Total	8.1%	4.1%	12.2%
BSMMU (Bangabandhu Seikh Mujib Medical University)	Count	13	15	28
	% within Hospital/Clinic	46.4%	53.6%	100.0%
	% within Location	12.5%	16.1%	14.2%
	% of Total	6.6%	7.6%	14.2%
NICVD	Count	8	18	26
	% within Hospital/Clinic	30.8%	69.2%	100.0%
	% within Location	7.7%	19.4%	13.2%
	% of Total	4.1%	9.1%	13.2%
Ibrahim Cardiac Hospital	Count	15	4	19
	% within Hospital/Clinic	78.9%	21.1%	100.0%
	% within Location	14.4%	4.3%	9.6%
	% of Total	7.6%	2.0%	9.6%
National Heart Foundation	Count	36	43	79
	% within Hospital/Clinic	45.6%	54.4%	100.0%
	% within Location	34.6%	46.2%	40.1%
	% of Total	18.3%	21.8%	40.1%
Evercare Hospital	Count	16	5	21
	% within Hospital/Clinic	76.2%	23.8%	100.0%
	% within Location	15.4%	5.4%	10.7%
	% of Total	8.1%	2.5%	10.7%
Total	Count	104	93	197
	% within Hospital/Clinic	52.8%	47.2%	100.0%
	% within Location	100.0%	100.0%	100.0%
	% of Total	52.8%	47.2%	100.0%

Hospital Type Wise Responses

The hospitals where the patients are admitted can be divided into three types: Public (NICVD, BSMMU), ii) Private (Evercare, Ibrahim Cardiac, Other Specialized), iii) Not-for-profit (NHF). An ANOVA test is carried out to see the response difference among these three types of hospitals (Appendix 6). It is noted that in ten cases significant differences in responses are observed (α=0.05). These are i) The medical ward is clean, ii) The nurses are always available to help, iii) The nurses are reliable, iv) The food provided is of good quality, v) Stretchers/ wheelchairs are provided whenever needed, vi) The ward/room is well lighted/ ventilated, vii) The ICU is under constant supervision, viii) The hospital lab test results are reliable, ix) The hospital stores supply medicine & other items. x) The paper works were simple & user-friendly. In each of these cases private and not-for-profit patients are more positive in agreement with the facility attributes except nurses' availability and reliability. In other cases, no significant mean response differences are observed.

MARKET PERSPECTIVE OF THE PATIENTS

Market perspective measures customers' perception regarding promotion and cost of other hospitals where the patients could have been admitted on a scale of +2 (strongly agree) to -2 (strongly disagree). Ten attributes are considered in this respect. The mean indices are found to vary across dimensions in terms of value and significance (Table 5). The respondents weakly agree that neither they have come across active advertisements by the hospitals (μ=0.37) nor are they very much influenced by such communication (μ=0.26). Rather, they are to some extent influenced by word-of-mouth (Friends/relatives) while forming any notion about other hospital services (μ=0.41). Respondents thus believed that hospitals should undertake more promotional activities to disseminate information (μ=1.11), and that such activities will improve the perception of people on different hospital services (μ=0.91).

Respondents perceive, not very strongly, that service quality increases with medical expenses (μ=0.33) and decreases as the services become cheaper (μ=0.26). Also, they are not sure if the cost of service is reasonable or not in hospitals other

than where they have taken treatment (μ=0.09). They are also doubtful if they could have received better treatment in other hospitals/clinics (μ=-0.12). The responses noted that the patients are indecisive to choose other hospitals in the future for treatment (μ=0.08). All these phenomena may be contributed due to lack of information to the respondents as hospitals do not take an active stance to communicate with the general masses.

Table 5. Market perspective of the patients

Variables	μ	σ	Sig. (2-tailed)
The hospitals/clinics are promoted through advertisements.	0.37	1.45	0.000
The advertisements have created a positive image in my mind.	0.26	1.04	0.001
Friends/relatives have favorably mentioned other hospitals.	0.41	1.51	0.000
Hospitals should promote more aware people of their facilities.	1.11	1.16	0.000
Advertising will create a positive image of the hospitals.	0.91	1.24	0.000
More costly hospitals can get me better service.	0.33	1.35	0.001
Less costly hospitals would get the patients fewer quality facilities.	0.26	1.29	0.005
I could have got better treatment in other hospitals/clinics.	-0.12	1.31	0.194
The costs in other hospitals are fair compared to the quality of service.	0.09	1.15	0.265
I may choose other hospitals in the future.	0.08	1.33	0.392

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study tried to explore the overall perception of cardiac patients about healthcare services in hospitals of Dhaka city of Bangladesh. Specifically, this study investigated the perception of patients about hospital management, hospital staff (i.e. doctors, nurses and other members), finance and processing, and market perspective of the patients. A total of 197 cardiac patients were surveyed, undertaken medical treatment at different hospitals in Bangladesh, using a non-probability convenience sampling technique. The scope of this research includes only the cardiac patients who seek medical treatment in hospitals with cardiac facilities in capital Dhaka, Bangladesh.

The study has identified 22 health care facilities provided by the hospitals, and the respondents are asked their satisfaction level to each of them in a 5-point Likert scale (+2: highly satisfied, -2: highly dissatisfied). As noted, the patients are significantly (α=5%) satisfied with the facilities (μ=1.17) but with a varied degree. The most satisfied facilities are (μ>1.33): i) continuous power supply (1.66), ii) clean medical wards (1.47), iii) doctors' explanation to the patient & their family (1.41), iv) simple and user-friendly paper works (1.41), v) timely service (1.40), vi) Doctors availability (1.38), vii) adequate security system (1.36), viii) availability stretchers/wheelchairs (1.34).

The moderately satisfied facilities include (1.33≥μ>0.67): i) reliable doctors (1.25), ii) reliable test results of the laboratory (1.25), iii) medical ward is well ventilated (1.25), iv) prompt to provide a bed (1.24), v) can be recommended to others (1.21), vi) prompt emergency services (1.20), vii) constant supervision in the ICU (1.03), viii) food quality is good (0.94), ix) nurses are friendly & cooperative (0.90), x) reasonable treatment cost (0.88), xi) support staff was friendly (0.86), xii) nurses available (0.84), xiii) nurses are reliable (0.84). The least satisfied facility (0.67≥μ>0.33) found to be i) hospital's supply of medicine and other items (0.57).

Again the 21 specific attributes are grouped into four categories: i) Hospital/Clinic management, ii) Medical facilities, iii) Doctor's service, and iv) Nurse's service. It is observed that the patients are most satisfied with doctor's service (μ=1.35), followed by hospital management (μ=1.20) and medical facilities (μ=1.18). They are comparatively less satisfied with nurse's service (μ=0.84). Regarding hospital management the patients felt that the wards are clean and tidy (μ=1.47), there is enough light and air in the rooms (μ=1.25), and the rooms are not too crowded (patient-to-bed capacity) (μ=1.24). They also agree that the security measures are adequate (μ=1.36). However, the satisfaction level is comparatively low with the food quality provided by the hospital management (μ=0.94). Several patients mentioned that they bring their own food from home.

Regarding financial administration and processing, the respondents found the formalities and paperwork are easy to complete and that the procedures are hassle free (μ=1.41). Also, they are happy with the punctuality of the services (μ=1.40). The patients are not very satisfied with the treatment cost rationale (μ=0.88). However, the respondents are to some extent satisfied with the staff demeanor of the hospital they are treated (μ=0.86). Overall, the respondents were quite satisfied with the hospital management (μ=1.20), but there are scopes to improve in staff service and medical expenses.

Regarding the medical facility, patients are most satisfied with the power supply and its backup (μ=1.66). They noted that power failures are a rarity at hospitals. They are in general pleased with the stretchers/wheelchairs support services of the hospitals (μ=1.34). They are satisfied with the laboratory services of the hospitals and find the test results reliable (μ=1.25). They also noted their satisfaction with emergency services availed at the cardiac units (μ=1.20) and ICU care (μ=1.03). But the patients are least satisfied with the medicine pharmacy (μ=0.57). Patients need to get medicines prescribed by the physicians from outside sources. Overall,

the respondents were quite satisfied with the hospital facilities (μ=1.18). Hospitals do, however, need to improve the convenient provisions of medicines for patients.

The patients are highly satisfied (μ=1.35) with the physician services of the hospital they are treated. In this respect the patients are most satisfied with the physicians' friendliness (μ=1.41), and availability (μ=1.38), but also quite satisfied with physicians' reliability (μ=1.25). Regarding nursing services, the patients are somewhat satisfied (μ=0.86). They found the nurses in the hospital to some extent friendly (μ=0.90), reliable (μ=0.84) and available (μ=0.84). Hence there is scope for the hospital to improve in the areas of nursing services.

Overall, it is found that the patients are likely to recommend the hospital to others (μ=1.21). This is also supported by calculating the mean index of the 21 variables of the study (μ=1.17). We can conclude that the patients are highly satisfied with physician services (μ=1.35), quite happy with the hospital management (μ=1.20) and facilities available (μ=1.18). However, for the nursing services there is still room for improvement (μ=0.86).

Per gender no perceptional difference is observed regarding the hospital facilities except the attribute 'The doctors helped me & my family to explain my condition & medicines. Here the females are found more positive (μ=0.97) than the males (μ=0.76). Age wise also no perceptional difference is observed regarding the hospital facilities except the attribute 'Constant supervision is in the ICU'. Here a positive weak correlation (r=0.144) is observed meaning that with age the patients have a more positive attitude towards the ICU services.

Occupation wise the patients are grouped into i) service (81, 41.1%), ii) business (73, 37.1%) iii) farming (16, 8.1%), iv) teaching (10, 5.1%), v) banking (8, 4.1%), and vi) other (9, 4.6%). The analysis shows no mean response difference regarding the occupations at a significant level of 5%. Household (HH) income wise also no correlation is observed regarding the hospital facilities at 5% level of significance.

The study tried to find out the response of the patients based on their home location: Urban (U), Non-Urban (NU). It is noted that in eight cases a significant difference in responses is observed (α=0.05). These are i) The authority is punctual with treatment, ii) The nurses are always available to help, iii) The nurses are friendly and cooperative, iv) The nurses are reliable, v) The treatment cost is reasonable (costs against quality), vi) The hospital security system is adequate, vii) The ward/room is well lighted/ ventilated, viii) There are no power disruptions. In each of these cases (or non-significant cases) the urban patients are more conservative in agreement with the facility attributes. In other words, they are more critical and cautious in their observations.

The study tried to find out the response of the patients based on their admitted hospitals. Here major response difference is observed among the admitted patients. It is noted that the patients admitted in Evercare, NHF, Ibrahim cardiac are, in general, found to receive better services. Some unique significant observations are noted between the variables' patients' hospital choice and their location of residence. As observed, most of the urban patients are admitted in Evercare, Ibrahim C and other specialized hospitals, which are comparatively expensive. On the other hand, non-urban patients are admitted more in less expensive NICVD, NHF and BSMMU.

The hospitals where the patients are admitted can be divided into three categories: Public (NICVD, BSMMU), ii) Private (Evercare, Ibrahim Cardiac, Other Specialized), and iii) Not-for-profit (NHF). The ANOVA test noted that in ten cases significant differences in responses is observed (α=0.05). These are i) The medical ward is clean, ii) The nurses are always available to help, iii) The nurses are reliable, iv) The food provided is of good quality, v) Stretchers/ wheelchairs are provided whenever needed, vi) The ward/room is well lighted/ ventilated, vii) The ICU is under constant supervision, viii) The hospital lab test results are reliable, ix) The hospital stores supply medicine & other items. x) The paper works were simple & user-friendly. In each of these cases private and not-for-profit patients are more positive in agreement with the facility attributes except nurses' availability and reliability. In other cases, no significant mean response differences are observed.

Market perspective measures customers' perception regarding promotion and cost of other hospitals where the patients could have been admitted on a scale of +2 (strongly agree) to -2 (strongly disagree). The respondents weakly agree that neither they have come across active advertisements by the hospitals (μ=0.37) nor are they very much influenced by such communication (μ=0.26). Rather, they are to some extent influenced by word-of-mouth (Friends/relatives) while forming any notion about different hospital services (μ=0.41). Respondents thus believed that hospitals should undertake more promotional activities to disseminate information (μ=1.11), and that such activities will improve the perception of people at different hospital and their services (μ=0.91).

Respondents perceive, not very strongly, that service quality increases with medical expenses (μ=0.33) and decreases as the services become cheaper (μ=0.26). Also, they are not sure if the cost of service is reasonable or not in hospitals other than where they have taken treatment (μ=0.09), or they could have got better treatment in other hospitals/clinics (μ=-0.12). Also, they are reluctant to choose other hospitals in the future for treatment (μ=0.08). All these phenomena may be contributed to the respondents as hospitals do not take an active stance to communicate to the general masses.

Finally, it can be said that the cardiac hospitals in Bangladesh are giving adequate and acceptable healthcare services to its patients. The patients and their kins are overall satisfied with the services of the hospitals and their management and

facilities. With government support and subsidies, patients of different income groups can receive treatment from these hospitals. The hospitals also can think of improving their expertise keeping ties with the global cardiac research institutions through linkage, cooperation, research, training and technology transfer.

APPENDIX 1. COORDINATION SCHEMA

Parameters	Complex Variable	Simple Variable	Value	Question number
Health care service facility	Hospital/clinic management	Hygiene/Cleanliness	Likert Scale	6
		Lighting & ventilation		
		Food		
		Security		
		Patient-to-capacity ratio		
		Service punctuality	Likert scale	
		Staff service/behavior		
		Paperwork		
		Cost/Expenses		
	Facilities	Medicine pharmacy	Likert Scale	
		Laboratory		
		Intensive care unit (ICU)		
		Supporting equipment		
		Emergency unit		
		Alternative power supply		
	Nursing services	Friendliness	Likert scale	
		Availability		
		Reliability		
	Physician services	Friendliness	Likert scale	
		Reliability		
		Availability		
	Overall satisfaction	Refer this hospital to others	Likert scale	
Market Perspective	Communicating customers	Usage of promotion	Likert Scale	7
		Impact of promotion		
		Word-of-mouth promotion		
	Cost	Proportion to quality		
		Cost rationality		
	Choices	Other hospital services		
		Choice of other hospitals		

APPENDIX 2. GENDER WISE RESPONSES

Facilities	Gender	μ	σ	Sig.	Facilities	Gender	μ	σ	Sig.
The medical ward is clean.	F (59)	1.46	0.73	0.91	The hospital can be recommended to others.	F (59)	1.17	1.10	0.74
	M (138)	1.47	0.78			M (138)	1.22	1.02	
I am provided with a bed promptly.	F (59)	1.24	1.01	0.99	The food provided is of good quality	F (59)	0.86	1.18	0.55
	M (138)	1.24	1.08			M (138)	0.97	1.01	
The doctors are always available to help.	F (59)	1.41	0.77	0.76	The hospital security system is adequate.	F (59)	1.27	0.91	0.35
	M (138)	1.37	0.85			M (138)	1.40	0.87	
The doctors helped me & my family to explain my condition & medicines.	F (59)	1.22	0.97	0.04	Stretchers/wheelchair provided whenever needed.	F (59)	1.41	0.81	0.43
	M (138)	1.49	0.76			M (138)	1.30	0.89	
The doctors are reliable.	F (59)	1.29	1.10	0.74	The ward/room is well lighted/ ventilated.	F (59)	1.03	1.05	0.06
	M (138)	1.23	1.01			M (138)	1.34	1.01	
The authority is punctual with treatment.	F (59)	1.39	0.85	0.90	The ICU is under constant supervision.	F (59)	.88	.966	0.16
	M (138)	1.41	0.89			M (138)	1.09	0.94	
The Hospital support staff was friendly.	F (59)	0.78	1.16	0.52	The hospital lab test results are reliable.	F (59)	1.15	1.00	0.34
	M (138)	0.89	1.10			M (138)	1.29	0.77	

The nurses are always available to help.	F (59)	0.90	1.08	0.63	There are no power disruptions.	F (59)	1.64	0.80	0.85
	M (138)	0.82	1.07			M (138)	1.67	0.74	
The nurses are friendly and cooperative.	F (59)	0.95	1.12	0.70	The emergency services are provided promptly.	F (59)	1.12	0.97	0.45
	M (138)	0.88	1.04			M (138)	1.23	0.95	
The nurses are reliable.	F (59)	1.02	1.08	0.13	The hospital stores supply medicine & other items.	F (59)	.36	1.35	0.15
	M (138)	0.76	1.11			M (138)	.66	1.40	
The treatment cost is reasonable (costs against quality).	F (59)	0.86	1.06	0.91	The paper works were simple & user friendly.	F (59)	1.44	0.77	0.74
	M (138)	0.88	1.20			M (138)	1.40	0.88	

APPENDIX 3. OCCUPATION WISE MEAN DIFFERENCE

Facilities	Occupation	N	μ	σ	Sig.	Facilities	Occupation	N	μ	σ	Sig.
The ward where I stayed was clean.	Service	81	1.44	0.742	0.503	I would recommend this hospital to others.	Service	81	1.11	1.095	0.782
	Business	73	1.51	0.784			Business	73	1.32	.984	
	Banker	8	1.63	0.518			Banker	8	1.13	1.126	
	Teacher	10	1.60	0.516			Teacher	10	1.50	.707	
	Farmer	16	1.50	0.816			Farmer	16	1.13	1.088	
	Other	9	1.00	1.000			Other	9	1.11	1.269	
	Total	197	1.47	0.759			Total	197	1.21	1.041	
I was provided a bed promptly.	Service	81	1.22	1.107	0.428	The food provided to patents was of good quality	Service	81	.96	1.123	0.635
	Business	73	1.22	1.031			Business	73	1.03	.971	
	Banker	8	1.38	1.061			Banker	8	.88	.991	
	Teacher	10	1.10	1.197			Teacher	10	.50	.972	
	Farmer	16	1.69	.793			Farmer	16	.94	1.237	
	Other	9	.78	1.093			Other	9	.56	1.130	
	Total	197	1.24	1.059			Total	197	.94	1.063	
There is always doctors to help me whenever I needed.	Service	81	1.21	.945	0.212	The security system in the hospital was sufficient	Service	81	1.27	1.000	0.251
	Business	73	1.47	.728			Business	73	1.41	.779	
	Banker	8	1.50	.535			Banker	8	1.38	.744	
	Teacher	10	1.70	.483			Teacher	10	1.60	.516	
	Farmer	16	1.44	.892			Farmer	16	1.69	.479	
	Other	9	1.67	.500			Other	9	.89	1.269	
	Total	197	1.38	.822			Total	197	1.36	.879	
The doctors helped me & my family to understand about my condition and medicines.	Service	81	1.31	.931	0.701	The hospital provided for a stretcher/ wheelchair whenever I needed one	Service	81	1.37	.813	0.806
	Business	73	1.47	.783			Business	73	1.25	.983	
	Banker	8	1.38	.518			Banker	8	1.50	.756	
	Teacher	10	1.70	.483			Teacher	10	1.60	.699	
	Farmer	16	1.50	.894			Farmer	16	1.38	.806	
	Other	9	1.33	.707			Other	9	1.22	.667	
	Total	197	1.41	.831			Total	197	1.34	.863	
I could completely rely on my doctors for my best handling.	Service	81	1.22	1.061	0.777	The ward where I stayed was well ventilated.	Service	81	1.32	.920	0.610
	Business	73	1.22	1.096			Business	73	1.16	1.190	
	Banker	8	1.63	.518			Banker	8	.88	.991	
	Teacher	10	1.60	.516			Teacher	10	1.50	.527	
	Farmer	16	1.19	1.109			Farmer	16	1.44	.892	
	Other	9	1.11	1.054			Other	9	1.00	1.225	
	Total	197	1.25	1.037			Total	197	1.25	1.027	

The authority was punctual with my treatment.	Service	81	1.31	.931	0.494	I was under constant supervision while in ICU.	Service	81	.88	1.029	0.146
	Business	73	1.45	.867			Business	73	1.15	.877	
	Banker	8	1.88	.354			Banker	8	1.75	.463	
	Teacher	10	1.60	.699			Teacher	10	1.00	.943	
	Farmer	16	1.38	.806			Farmer	16	1.00	.894	
	Other	9	1.22	.972			Other	9	.89	.928	
	Total	197	1.40	.873			Total	197	1.03	.947	
The Hospital support staff was friendly.	Service	81	.65	1.226	0.248	I could completely rely on the test results from the hospital lab.	Service	81	1.28	.884	0.525
	Business	73	.99	1.074			Business	73	1.15	.861	
	Banker	8	1.00	1.069			Banker	8	1.63	.518	
	Teacher	10	.70	.823			Teacher	10	1.40	.699	
	Farmer	16	1.31	.873			Farmer	16	1.38	.719	
	Other	9	.89	.928			Other	9	1.00	.866	
	Total	197	.86	1.116			Total	197	1.25	.842	
There was always nurse to help me whenever I needed.	Service	81	.81	1.163	0.343	There were no power disruptions during my stay.	Service	81	1.72	.675	0.381
	Business	73	.71	1.020			Business	73	1.59	.847	
	Banker	8	1.38	.744			Banker	8	1.88	.354	
	Teacher	10	1.30	.483			Teacher	10	1.80	.422	
	Farmer	16	1.06	1.237			Farmer	16	1.75	.577	
	Other	9	.78	.833			Other	9	1.22	1.302	
	Total	197	.84	1.069			Total	197	1.66	.757	
The nurses were friendly and cooperative.	Service	81	.95	1.128	0.687	The emergency services at my hospital were provided immediately.	Service	81	1.11	.962	0.361
	Business	73	.77	1.074			Business	73	1.33	.914	
	Banker	8	1.25	.707			Banker	8	1.38	.916	
	Teacher	10	1.00	.816			Teacher	10	1.50	.850	
	Farmer	16	1.13	1.088			Farmer	16	.94	.998	
	Other	9	.78	.833			Other	9	.89	1.167	
	Total	197	.90	1.062			Total	197	1.20	.951	
I could completely rely on my nurses for my best handling.	Service	81	.84	1.145	0.639	The hospital stores supplied medicine and other supplies.	Service	81	.74	1.340	0.366
	Business	73	.75	1.115			Business	73	.45	1.365	
	Banker	8	1.00	.926			Banker	8	.50	1.604	
	Teacher	10	1.40	.966			Teacher	10	1.10	1.101	
	Farmer	16	.88	1.088			Farmer	16	.19	1.682	
	Other	9	.67	1.000			Other	9	.11	1.453	
	Total	197	.84	1.104			Total	197	.57	1.386	
Cost of my treatment was reasonable (costs against quality).	Service	81	.86	1.191	0.864	The paper works were simple and user friendly.	Service	81	1.33	.987	0.619
	Business	73	.82	1.171			Business	73	1.45	.782	
	Banker	8	1.38	.744			Banker	8	1.50	.756	
	Teacher	10	.90	1.197			Teacher	10	1.60	.516	
	Farmer	16	1.00	1.211			Farmer	16	1.63	.619	
	Other	9	.78	.972			Other	9	1.11	.782	
	Total	197	.88	1.154			Total	197	1.41	.850	

APPENDIX 4. LOCATION WISE RESPONSES [URBAN (U), NON-URBAN (NU)]

Facilities	Location	μ	σ	Sig.	Facilities	Location	μ	σ	Sig.
The medical ward is clean.	U (104)	1.43	0.75	0.50	The hospital can be recommended to others.	U (104)	1.09	1.11	0.08
	NU (93)	1.51	0.78			NU (93)	1.34	0.95	
I am provided with a bed promptly.	U (104)	1.15	1.03	0.24	The food provided is of good quality	U (104)	0.84	1.10	0.15
	NU (93)	1.33	1.09			NU (93)	1.05	1.02	

The doctors are always available to help.	U (104)	1.32	0.80	0.25	The hospital security system is adequate.	U (104)	1.19	0.94	0.00
	NU (93)	1.45	0.84			NU (93)	1.55	0.77	
The doctors explained me & my family my condition & medicines.	U (104)	1.45	0.72	0.42	Stretchers/wheelchair provided whenever needed.	U (104)	1.31	0.84	0.64
	NU (93)	1.35	0.94			NU (93)	1.37	0.89	
The doctors are reliable.	U (104)	1.17	1.13	0.28	The ward/room is well lighted/ ventilated.	U (104)	1.09	1.04	0.02
	NU (93)	1.33	0.93			NU (93)	1.43	0.98	
The authority is punctual with treatment.	U (104)	1.28	0.91	0.04	The ICU is under constant supervision.	U (104)	1.06	0.93	0.67
	NU (93)	1.54	0.82			NU (93)	1.00	0.97	
The Hospital support staff was friendly.	U (104)	0.82	1.08	0.59	The hospital lab test results are reliable.	U (104)	1.15	0.87	0.09
	NU (93)	0.90	1.16			NU (93)	1.35	0.80	
The nurses are always available to help.	U (104)	0.68	1.20	0.03	There are no power disruptions.	U (104)	1.54	0.85	0.02
	NU (93)	1.02	.87			NU (93)	1.80	0.62	
The nurses are friendly and cooperative.	U (104)	0.76	1.16	0.04	The emergency services are provided promptly.	U (104)	1.19	0.95	0.93
	NU (93)	1.06	0.92			NU (93)	1.20	0.96	
The nurses are reliable.	U (104)	0.66	1.24	0.02	The hospital stores supply medicine & other items.	U (104)	.57	1.36	0.99
	NU (93)	1.03	0.89			NU (93)	.57	1.43	
The treatment cost is reasonable (costs against quality).	U (104)	0.71	1.16	0.03	The paper works were simple & user friendly.	U (104)	1.32	0.87	0.10
	NU (93)	1.06	1.12			NU (93)	1.52	0.82	

APPENDIX 5. ADMITTED HOSPITAL WISE ANALYSIS

Facilities	Hospital admitted	μ	σ	Sig.	Facilities	Hospital admitted	μ	σ	Sig.
The ward where I stayed was clean.	Others (24)	1.46	0.59	0.00	Recommend the hospital to others.	Others (24)	0.71	1.12	0.25
	BSMMU (28)	1.46	0.70			BSMMU (28)	1.25	1.08	
	NICVD (26)	0.77	1.08			NICVD (26)	1.27	0.83	
	Ibrahim C (19)	1.42	0.77			Ibrahim C (19)	1.16	1.17	
	NHF (79)	1.63	0.62			NHF (79)	1.30	1.07	
	Apollo (21)	1.76	0.54			Apollo (21)	1.33	0.86	
	Total (197)	1.47	0.76			Total (197)	1.21	1.04	
I was provided a bed promptly.	Others (24)	1.29	0.91	0.08	The food provided to patents was of good quality	Others (24)	0.58	0.93	0.00
	BSMMU (28)	1.57	0.69			BSMMU (28)	0.64	1.10	
	NICVD (26)	0.85	1.26			NICVD (26)	0.38	1.20	
	Ibrahim C (19)	1.37	0.83			Ibrahim C (19)	0.63	1.01	
	NHF (79)	1.11	1.22			NHF (79)	1.20	0.98	
	Apollo (21)	1.57	0.68			Apollo (21)	1.71	0.56	
	Total (197)	1.24	1.06			Total (197)	0.94	1.06	
There was always doctor to help me whenever I needed.	Others (24)	1.00	0.83	0.01	The security system in the hospital was sufficient	Others (24)	0.75	1.20	0.00
	BSMMU (28)	1.50	0.69			BSMMU (28)	1.32	0.72	
	NICVD (26)	1.04	0.87			NICVD (26)	1.27	0.92	
	Ibrahim C (19)	1.68	0.48			Ibrahim C (19)	1.32	0.67	
	NHF (79)	1.41	0.91			NHF (79)	1.52	0.85	
	Apollo (21)	1.71	0.46			Apollo (21)	1.67	0.48	
	Total (197)	1.38	0.82			Total (197)	1.36	0.88	
The doctors helped me & my family to understand about my condition and medicines.	Others (24)	1.17	0.64	0.04	The hospital provided for a stretcher/wheelchair whenever I needed one	Others (24)	1.13	0.80	0.01
	BSMMU (28)	1.54	0.69			BSMMU (28)	0.93	0.90	
	NICVD (26)	1.15	0.83			NICVD (26)	1.23	0.86	
	Ibrahim C (19)	1.32	0.58			Ibrahim C (19)	1.21	0.54	
	NHF (79)	1.42	1.01			NHF (79)	1.54	0.93	
	Apollo (21)	1.86	0.36			Apollo (21)	1.57	0.60	
	Total (197)	1.41	0.83			Total (197)	1.34	0.86	

I could completely rely on my doctors for my best handling.	Others (24)	.83	1.13	0.19	The ward where I stayed was well ventilated.	Others (24)	1.13	0.99	0.00
	BSMMU (28)	1.43	0.74			BSMMU (28)	1.32	0.48	
	NICVD (26)	1.12	1.07			NICVD (26)	0.27	1.46	
	Ibrahim C (19)	1.37	0.83			Ibrahim C (19)	1.32	0.75	
	NHF (79)	1.24	1.18			NHF (79)	1.51	0.96	
	Apollo (21)	1.57	0.68			Apollo (21)	1.48	0.75	
	Total (197)	1.25	1.04			Total (197)	1.25	1.03	
The authority was punctual with my treatment.	Others (24)	1.17	0.92	0.21	I was under constant supervision while in ICU.	Others (24)	0.75	1.19	0.00
	BSMMU (28)	1.50	0.75			BSMMU (28)	0.75	0.89	
	NICVD (26)	1.31	1.01			NICVD (26)	0.65	0.80	
	Ibrahim C (19)	1.32	0.48			Ibrahim C (19)	0.89	0.81	
	NHF (79)	1.38	0.99			NHF (79)	1.25	0.90	
	Apollo (21)	1.81	0.40			Apollo (21)	1.48	0.87	
	Total (197)	1.40	0.87			Total (197)	1.03	0.95	
The Hospital support staff was friendly.	Others (24)	0.58	0.93	0.00	I could completely rely on the test results from the hospital lab.	Others (24)	0.67	0.87	0.00
	BSMMU (28)	1.25	0.89			BSMMU (28)	1.29	0.66	
	NICVD (26)	0.15	1.32			NICVD (26)	1.12	0.91	
	Ibrahim C (19)	0.89	0.81			Ibrahim C (19)	0.95	0.78	
	NHF (79)	0.89	1.20			NHF (79)	1.41	0.86	
	Apollo (21)	1.38	0.74			Apollo (21)	1.71	0.46	
	Total (197)	0.86	1.12			Total (197)	1.25	0.84	
There is always nurses to help whenever needed.	Others (24)	0.71	1.00	0.00	There were no power disruptions during my stay.	Others (24)	1.04	1.20	0.00
	BSMMU (28)	1.21	0.92			BSMMU (28)	1.64	0.68	
	NICVD (26)	0.69	0.93			NICVD (26)	1.81	0.49	
	Ibrahim C (19)	1.05	0.71			Ibrahim C (19)	1.68	0.48	
	NHF (79)	0.51	1.20			NHF (79)	1.77	0.73	
	Apollo (21)	1.76	0.45			Apollo (21)	1.76	0.45	
	Total (197)	0.84	1.07			Total (197)	1.66	0.76	
The nurses were friendly and cooperative.	Others (24)	0.75	0.99	0.02	The emergency services at my hospital were provided immediately.	Others (24)	0.79	0.98	0.06
	BSMMU (28)	1.29	0.90			BSMMU (28)	1.04	1.00	
	NICVD (26)	0.65	0.98			NICVD (26)	1.27	0.92	
	Ibrahim C (19)	1.11	0.74			Ibrahim C (19)	0.95	0.97	
	NHF (79)	0.72	1.12			NHF (79)	1.33	0.96	
	Apollo (21)	1.38	0.97			Apollo (21)	1.52	0.68	
	Total (197)	0.90	1.06			Total (197)	1.20	0.95	
I could completely rely on my nurses for my best handling.	Others (24)	0.54	1.10	0.01	The hospital stores supplied medicine and other supplies.	Others (24)	0.21	1.285	0.00
	BSMMU (28)	1.25	0.84			BSMMU (28)	-0.50	1.427	
	NICVD (26)	0.96	0.82			NICVD (26)	0.00	1.497	
	Ibrahim C (19)	0.89	0.99			Ibrahim C (19)	0.63	.955	
	NHF (79)	0.59	1.25			NHF (79)	0.95	1.218	
	Apollo (21)	1.33	0.97			Apollo (21)	1.62	.921	
	Total (197)	0.84	1.10			Total (197)	0.57	1.37	
Cost of my treatment was reasonable (costs against quality).	Others (24)	0.58	1.10	0.46	The paper works were simple and user friendly.	Others (24)	0.67	1.01	0.00
	BSMMU (28)	1.14	0.71			BSMMU (28)	1.11	1.03	
	NICVD (26)	0.92	1.23			NICVD (26)	1.46	0.71	
	Ibrahim C (19)	0.74	1.10			Ibrahim C (19)	1.37	0.60	
	NHF (79)	0.82	1.27			NHF (79)	1.65	0.73	
	Apollo (21)	1.14	1.20			Apollo (21)	1.76	0.54	
	Total (197)	0.88	1.154			Total (197)	1.41	0.85	

APPENDIX 6. TYPE WISE RESPONSES [GOVERNMENT (G), PRIVATE (P), NOT-FOR-PROFIT (NP)]

Facilities	Type	μ	σ	Sig.	Facilities	Type	μ	σ	Sig.
The medical ward is clean. *	G (54)	1.13	0.95	0.00	The hospital is recommendable.	G (54)	1.26	0.96	0.22
	P (66)	1.52	0.66			P (66)	1.03	1.07	
	NP (77)	1.66	0.60			NP (77)	1.32	1.07	
	Total (197)	1.47	0.76			Total (197)	1.21	1.04	
I am provided with a bed promptly.	G (54)	1.22	1.06	0.30	The food provided is of good quality. *	G (54)	0.52	1.15	0.00
	P (66)	1.39	0.80			P (66)	0.92	1.01	
	NP (77)	1.12	1.24			NP (77)	1.25	0.95	
	Total (197)	1.24	1.06			Total (197)	0.94	1.06	
The doctors are always available to help.	G (54)	1.28	0.81	0.54	The hospital security system is adequate.	G (54)	1.30	0.82	0.11
	P (66)	1.44	0.70			P (66)	1.23	0.94	
	NP (77)	1.40	0.92			NP (77)	1.52	0.85	
	Total (197)	1.38	0.82			Total (197)	1.36	0.88	
The doctors explained me & my family my condition & medicines.	G (54)	1.35	0.78	0.85	Stretchers/ wheelchairs are provided whenever needed. *	G (54)	1.07	0.89	0.01
	P (66)	1.42	0.61			P (66)	1.27	0.69	
	NP (77)	1.43	1.02			NP (77)	1.57	0.92	
	Total (197)	1.41	0.83			Total (197)	1.34	0.86	
The doctors are reliable.	G (54)	1.28	0.92	0.97	The ward/room is well lighted/ ventilated. *	G (54)	0.81	1.18	0.00
	P (66)	1.24	0.95			P (66)	1.29	0.84	
	NP (77)	1.23	1.19			NP (77)	1.52	0.97	
	Total (197)	1.25	1.04			Total (197)	1.25	1.03	
The authority is punctual with treatment.	G (54)	1.41	0.88	0.94	The ICU is under constant supervision. *	G (54)	0.70	0.84	0.00
	P (66)	1.42	0.70			P (66)	1.02	1.02	
	NP (77)	1.38	1.00			NP (77)	1.27	0.90	
	Total (197)	1.40	0.87			Total (197)	1.03	0.95	
The Hospital support staff was friendly.	G (54)	0.72	1.24	0.57	The hospital lab test results are reliable. *	G (54)	1.20	0.79	0.00
	P (66)	0.92	0.88			P (66)	1.09	0.84	
	NP (77)	0.90	1.21			NP (77)	1.42	0.86	
	Total (197)	0.86	1.12			Total (197)	1.25	0.84	
The nurses are always available to help. *	G (54)	0.96	0.95	0.00	There are no power disruptions.	G (54)	1.72	0.60	0.06
	P (66)	1.14	0.88			P (66)	1.47	0.86	
	NP (77)	0.51	1.21			NP (77)	1.78	0.74	
	Total (197)	0.84	1.07			Total (197)	1.66	0.76	
The nurses are friendly and cooperative.	G (54)	0.98	0.98	0.17	The emergency services are provided promptly.	G (54)	1.15	0.96	0.12
	P (66)	1.05	0.94			P (66)	1.05	0.94	
	NP (77)	0.73	1.20			NP (77)	1.36	0.95	
	Total (197)	0.90	1.06			Total (197)	1.20	0.95	
The nurses are reliable. *	G (54)	1.11	0.84	0.04	The hospital stores supply medicine & other items. *	G (54)	-0.26	1.47	0.00
	P (66)	0.88	1.07			P (66)	0.73	1.27	
	NP (77)	0.61	1.25			NP (77)	1.01	1.16	
	Total (197)	0.84	1.10			Total (197)	0.57	1.39	
The treatment cost is reasonable (costs against quality).	G (54)	1.04	0.99	0.49	The paper works were simple & user friendly. *	G (54)	1.28	0.90	0.00
	P (66)	0.80	1.13			P (66)	1.21	0.89	
	NP (77)	0.83	1.28			NP (77)	1.68	0.72	
	Total (197)	0.88	1.15			Total (197)	1.41	0.85	

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