

RESEARCH ARTICLE

Factors undermining quality of medical-care services delivered by a physician in today's medical-care market country-wise: Statistical analysis

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Abstract: This study aims to decide factors that are affecting a physician's quality of medicalservices in today's medical-care market country-wise such as Bangladesh. It further describes the relationship among the factors and then decides its influence affecting the physician's quality of medical-care services. Here primary data was collected from patients and patient-attendants in different private and government hospitals found in Dhaka City. This data statistics are used in this study for quantitative research approaches to conduct the goals. The dependent variable "quality of medical-services (PQMCS)" is regressed on six explanatory variables: a) pharmaceutical products promotional impact b) lengthy prescription c) unnecessary test requirements d) spending less time e) poor communication with patients and f) requirements for longer staying in hospital (private hospitals cases) etc. These characteristics were gathered from survey-opinions of patients and patient-attendants. These data statistics are used to decide the validity of the model. All multiple regression assumption tests were found to be valid. According to regression analysis, it was found that each of the explanatory variables have a substantial negative impact on a physician's quality of medical-services in the medical-care market. The analysis from one-way ANOVA reveals that patients and patient-attendants have similar feelings of the six independent variables that undermine a physician's quality of medicalservices on duty. Results from this study can be used by policymakers as well as leaderships of hospitals (government and private) for policy-design and for administrative approaches addressing today's problem of medical-care market in Bangladesh. Since most physicians are employed either in government or in private sector or in both sectors, it is obvious that enforcing effective management systems can be instrumental curtailing the magnitudes of the problem soon. Obviously, in this case both government & private hospitals must work together for the interest of Bangladeshi-society, which can ensure quality & sustainable medical-care market soon in Bangladesh. The findings of this study can be a synopsis of medical-care services in today's business-driven world country-wise where undertaking further study on policy-design can be instrumental.

Keywords: medical-care service-market, Hippocratic oath, misuse of services, economic externalities, deadweight loss

1 Introduction

In today's world, people mostly behave with business-mentality without considering moral obligations in society. The service market, particularly the medical-care market is appeared to be vulnerable. Because of supplying medical-services, physicians or hospitals receive capitation payments, fees-for-services, and other fees. However, today it is the most criticized profession in world-economy country-wise such as Bangladesh [1]. Both internal and external factors in medical-care market-private-sector & public-sector of Bangladesh undermine the quality of medical-services of physicians in profession [1].

However, Akim Rahman's findings [1], particularly, the statistical analysis part was limited only to the identification of these factors, which raises question: how much each of the factors influences the quality of medical-service of a physician in medical-care market?

The answer to the question posed is expected to be uncovered by statistically analyzing the effect of each factor that undermines physicians' quality of medical-service in today's medical-care market. So, the current study takes on the tasks and fills the gap in literature. It further describes the relationship among the factors and then determined its influence affecting a physician's quality of medical-care services.

Based on conveniency and appropriateness statistical analysis and testing, the chosen factors from literature [1] are i) pharmaceutical products promotional impact ii) lengthy prescription

iii) unnecessary test requirements iv) spending less time v) poor communication with patients and vi) requirements for longer staying in hospital.

To the best of my knowledge, there is no *prior* empirical study on exploring factors that undermine quality of medical service provided by a physician. This study, therefore, aims to fill this research gap by empirically exploring a physician's perspectives on factors affecting the quality of medical-care services.

2 Literature review

Quality is a well-recognized concept in our real-life activities. And it can inform us for further efforts to develop effective strategies to improve service systems where medical-care services are no exception [2]. Here the value of services and its relationship with people's lives, quality assurance and quality promotion have received growing attention where patients have increasing expectations from a physician's services in today's medical-care market [1,3]. Since the 21^{st} Century is a business-driven world where both a consumer, *i.e.*, a patient and a service-provider *i.e.*, a physician in the medical-care market are not hesitant to take advantage as opportunity arises.

To marginalize this dilemma in medical-care market, the SERVQUAL model has been applied in several countries to measure the service quality in hospitals and health services These countries are Romania [4], Turkey [5], Saudi Arabia [6], Bangladesh [7] and Iran [8]. In these countries, the SERVQUAL model has been used to evaluate beliefs of service quality by medical university students [9, 10] and by patients at hospitals, primary health care centers and other health centers [8, 11].

According to the SERVQUAL model, a service provider must be able to supply five critical elements of service: a) reliability b) assurance c) tangibility d) empathy and e) responsiveness. However, some of these elements are missing in today's medical-care services provided by a physician country-wise such Bangladesh.

A recent study [1] where data statistics were collected from three groups namely patients, attendants of the patients, and the doctors in Bangladesh, shows in Table-1 that 79% attendants show negative perceptions on doctor's cordiality towards patients. On trusting doctors, 78% shows negative beliefs in Bangladesh medical-care service market. The estimated overall weighted mean is 2 (two), which also confirms the current doctor-patient relationship to be poor in Bangladesh. On overall belief that 90% people believe that "*patients-work-for-doctors*" in medical-care market. (see Table 1)

Table 1	Attendant	belief and	l patient f	feeling	toward the	doctors in	Bangladesh

		Attendant Perception			Patient Perception		
Indicators	(+) in %	(-) in %	Mean	(+) in %	(-) in %	Mean	
Delivered treatment cordially	20.0	78.9	2.2	48.2	51.8	3.21	
Delivered treatment with responsibility	30.0	70.0	1.9	22.9	77.1	2.51	
Invested adequate time	24.5	75.5	2.2	26.8	73.2	2.77	
Supplied mental support	30.0	70.0	2.1	49.0	51.0	3.18	
Listened to the patient attentively	20.5	79.5	2.3	33.2	66.8	3.2	
Patient was satisfied with medical-care service	33.0	67.0	1.9	34.6	65.4	2.9	
Described the disease / health issue	30.0	79.0	2.1	27.2	72.8	2.8	
Explained the prescriptions clearly	33.0	67.0	2.0	23.0	77.0	2.9	
Felt like influenced by a pharma/ commission agent	75.2	24.8	2.1	46.0	54.0	3.0	
No discrimination found in services	10.0	90.0	2.0	33.0	67.0	2.9	
Having trust on the doctor as service provider	22.8	77.2	1.9	31.0	69.0	3.1	
Overall feeling: Felt like "doctors-work-for-patients" in healthcare market	15.0	84.6	2.0	35.0	65.0	2.9	

Notes: Respondents = 100 where Public = 30, Private = 60 nonprofit = 10; Source: Author (Rahman, 2022a)

In contrast, 52% of patients, which is smaller than attendant percentage, show negative beliefs on doctors' cordiality issue. On trust issue, 69% patients show negative belief on trusting doctors in Bangladesh. In this case the estimated overall mean is 2.9 (three), which confirms a poor doctor-relationship in Bangladesh. On overall belief - Felt like "*doctors-work-for-patients*" in healthcare market, 65% patients expressed negative perceptions. In other words, 65% people believe that "*patients-work-for-doctors*" in today's medical care market in Bangladesh.

Few studies have investigated service quality in the health sector, but to my knowledge no study has yet been conducted on the quality of medical-care services provided by a physician in a hospital or in a doctor's private chamber. In a recent study, Akim Rahman's findings [1] were limited only to the identification of the factors, which may undermine the quality of medical-services provided by a physician in medical-care market in Bangladesh. In literature [1, 12] the identified factors are i) pharmaceutical products promotional impact ii) lengthy prescription iii)

unnecessary test requirements iv) spending less time v) poor communication with patients and vi) requirements for longer staying in hospital.

Thus, it is reasonable to raise the question: how much each of the factors influences the quality of medical-service of a physician in the medical-care market?

The answer to the question posed is expected to be uncovered by statistically analyzing the effect of each factor that undermines physicians' quality of medical-services in today's medical-care market. So, the current study takes on the tasks and fills the gap in literature. It further describes the relationship among the factors and then determined its influence affecting a physician's quality of medical-services in today's medical-care market.

To the best of my knowledge, there is no *prior* empirical study on exploring factors that undermine quality of medical-care services provided by a physician. This study, therefore, aims to fill this research gap by empirically exploring a physician's perspectives on factors affecting the quality of medical-care services.

3 Objectives of the study

This study aims to statistically cross-examine the existence of the factors [1] and then measure the influence of each factor i.e., each explanatory variable that undermines a physician's performance in medical-care market in Bangladesh.

The specific goals are as follows:

(1) To examine the factors undermining the quality of medical-care services provided by a physician;

(2) To rank the relative intensity of the factors undermining physician's performance as perceived by the respondents in the survey.

(3) To examine the feeling of the patients and patient-attendants towards the relative intensity of factors undermining a physician's performance by analysis of variance.

4 Research hypotheses development

To achieve the research goals, six hypotheses are formulated. They are as follows:

Ha1: There is a positive relationship between promotional impact of pharmaceutical products and physician's quality of medical-care services.

Ha2: There is a positive relationship between lengthy prescription and a physician's quality of Medical-care services.

Ha3: There is a positive relationship between unnecessary test requirements and the quality of Medical-care services of a physician.

Ha4: There is a positive relationship between spending less time and the quality of medicalservices of a physician.

Ha5: There is a positive relationship between poor communication with patients and quality of Medical-care services of a physician.

Ha6: There is a positive relationship between requirements for longer staying in hospital and quality of medical-care services of a physician.

5 Research method

5.1 Research design

This study used a descriptive survey and causal explanatory design to decide the causeand-effect relationship between a physician's quality of medical-care services and the factors affecting it.

5.2 **Populations and Sample size**

The total population of this study was 150 patients and patient-attendants who took part from hospitals run by the government, private and nonprofit organization where all these hospitals were in Dhaka City.

5.3 Instruments of data collection

This survey used a structured questionnaire. The first section of the survey-form collects organization and respondent information. Part two of the questionnaire holds the above found six items that affect the quality of medical-care services of a physician [12]. In other words, for respondents' assessments, or responses on dependent variable "quality of medical-care services" and on six independent variables namely i) Promotional impact of pharmaceutical product, ii) Lengthy prescription iii) Unnecessary test requirements iv) Spending less time v) Poor communication with patients and vi) Requirements for longer staying in hospital were

incorporated into the survey-questionnaire for data collection. Here each statement required the respondents to rate the attributes in the context of quality of services on a 5-point Likert scale.

5.4 Data analysis techniques

In the medical-care market, particularly in hospitals or in any other medical institution, physicians and nurses take care of their patients. So, this study concentrates only on physicians' roles in the medical-care market where physicians handle answering patients' questions, diagnosis the causes that have made them to be patients, writing prescriptions, and advising patients for ensuring better health-condition etc.

This study uses direct and indirect factors that influence physician's services to evaluate the quality of services. It is well recognized that the quality of medical-care services offered by a physician can be measured based on the feedback by the patient or patient's attendant [1]. Thus, this evaluation is based on factors that can influence a physician's roles such as a) answering patient questions b) diagnosis the causes that have made the individual to be patient c) writing a prescription and d) advising patients for ensuring better health-condition.

Obviously, physician's ability in subject area is not in question in this study. However, factors as mentioned above can influence a physician's roles even if the physician may or may not recognize it in practice. For analysis purposes, these factors [12] are denoted as follows:

Quality of medical-care-services = QMCS

Promotional impact of pharmaceutical product = PIPP

Lengthy prescription = LP

Unnecessary test requirements = UTR

Spending less time = SLT

Poor communication with patients = PCWP and

Requirements for longer staying in hospital = RLSH

So, the mathematical relationship between the dependent variable (QMCS) and the independent variables particularly PIPP, LP, UTP, SLT, PCWP and RLSH can be written as follows:

Quality of medical-care-services = QMCS = f(PIPP, LP, UTR, SLT, PCWP, RLSH).

- In other words, $QMCS = f(x_1, x_2 \dots x_6)$ where
- x_1 = Promotional impact of pharmaceutical product = PIPP
- x_2 = Lengthy prescription = LP
- x_3 = Unnecessary test requirements = UTR
- x_4 = Spending less time = SLT
- x_5 = Poor communication with patients = PCWP and

 x_6 = Requirements for longer staying in hospital = RLSH

In this study, the techniques ANOVA and OLS are used as follows:

Quality of medical care services (QMCS) = f(PIPP, LP, UTR, SLT, PCWP, RLSH)

So, the linear multiple regression equation is as follows:

QMCS = $\beta_0 + \beta_1$ PIPP + β_2 LP + β_3 UTR + β_4 SLT + β_5 PCWP + β_6 RLST + € where QMCS is the dependent variable. β_i (where i = 0, 1, 2 ... 6) are the coefficients and € is an error variable and PIPP, LP, UTR, SLT, PCWP and RLSH are independent variables.

6 Findings and discussions

6.1 Demographic information of respondents

Survey questionnaires were distributed to 150 patients and patient-attendants in three hospitals (a government hospital, private hospital, and nonprofit runs hospital). However, 148 responses were collected where two respondents fell behind completing the Survey Form. The completed questionnaires were collected on the spot after completion by the respondents. Table 2 supplies respondent demographics where 75% respondents were patients, and 25% respondents were patient-attendants. Sixty-five respondents (65%) have bachelor's degrees.

Table	e 2 Demographic information	Demographic information on respondents				
Character	Respondents' Profile	Frequency	Percentage			
	Diploma	45	30.40			
Education	Bachelor's degree	70	47.23			
	Master's degree	33	22.30			
	30 – 40 years	12	8.11			
4 22	41 - 50 years	22	14.86			
Age	51 – 60 years	37	25.00			
	61 – 70 years	77	52.02			
Tunes of respondents	Patients	102	68.92			
Types of respondents	Patient-attendants	46	31.08			

6.2 Reliability

For ensuring the reliability of the data collection, the Cronbach's coefficient alpha (α) was used to evaluate the internal consistency among items included in each factor. As a general guideline, an instrument's internal consistency should be at least 0.70. Table 3 shows that all variables' alpha (α) values are greater than the threshold value. Therefore, the result shows that the questionnaire is more dependable.

Table 3	Reliability test		
Variables	Number of items on the scale	Cronbach's on the Alpha	Decision
Quality of medical care services	8	0.924	Reliable
Pharm. products promotional impacts	10	0.824	Reliable
Lengthy prescription	10	0.735	Reliable
Unnecessary test requirements	10	0.905	Reliable
Spending less time	10	0.910	Reliable
Poor communication with patients	10	0.902	Reliable
Requirements for longer staying in hospital	10	0.914	Reliable
Overall	58	0.949	Reliable

6.3 Regression assumption tests

In this study data were checked for confirming Classical Linear Regression assumption before conducting the regression analysis, which is discussed in this section.

6.3.1 Test of normality

The Shapiro Wilk test is a non-graphical test whereby if the test results are insignificant i.e., above 0.05, it implies that the data used in this study follows the normal distribution. However, when the p-value for variable is less than 0.05 or equal to (p-value ≤ 0.05 , which shows significant), it shows that the data is not good for the OLS analysis. On normality test here, the statistical measures are hypothesized as follows:

- H₀: Normal distributed errors
- H_a: Nonnormal distribution error

	Tabl	e 4 Test	of normality	у		
	Kolmo	gorov-Smir	nov	Shapiro-Wi	lk	
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	0.082	148	.015	0.989	148	0.325

The results obtained from the Shapiro-Wilk test in Table 4 show that all the variables had a p-value greater than (0.05). Therefore, it can be concluded that the residual value is normally distributed so that the regression analysis procedures have been fulfilled.

6.3.2 Test for multicollinearity

According to Gujarati and Porter (1999), explanatory variables should not show a high correlation with each other because that may cause unrealistic results during regression. The Variance Inflation Factor (VIF) and Tolerance were used in this study to see if there was a multicollinearity effect between the variables.

Ho: There is a multicollinearity problem

Ha: There is no multicollinearity problem

As shown in Table 5, all the VIF column values are less than ten, and Tolerance values are greater than ten, showing no multi-collinearity between the explanatory variables. As a result, we did not reject the null hypotheses. Here the VIF values should be less than 5 to guarantee collinearity is not an issue in your model.

Table 5	Collinearity statistics	
Model	Collinearity Statistics Tolerance	VIF
Pharmaceutical products promotional impact	0.477	1.047
Lengthy prescription	0.567	1.140
Unnecessary test requirements	0.966	1.067
Spending less time	0.534	1.022
Poor communication with patients	0.433	1.011
Requirements for longer staying in hospital	0.943	2.08

Notes: Dependent variable: Quality of medical care services (QMCS)

VIF is the reciprocal of the tolerance value ; small VIF values shows low correlation among variables under ideal conditions VIF < 3. However, it is acceptable if it is less than 10. Hair *et al.* (2011) proposed that multicollinearity exists if the VIF value is greater than five and the tolerance value is below 0.20.

My view is that a VIF of even five indicates there is quite a problem with the independent variables being highly correlated with each other. Ten is absurdly high, which means it is exceedingly difficult to sensibly interpret the regression coefficients. It depends upon the model, in my case, I want to keep specific indicators and took "5" as the maximum level of VIF as a reference. The regression results lose meaning with levels of collinearity that high - indeed authors like Ringle say VIF of 5 is OK but if you are modelling a bunch of IVs that correlate with each other at like r = 0.80 or more it becomes pointless.

6.3.3 Correlation analysis

The Pearson correlation matrix result in Table 6 shows a positive correlation between the dependent and independent variables. The relationship between Quality of medical-care services and the predictor variables was found to be positively correlated and significant.

 Table 6
 Pearson correlation coefficient

	PIPP	LP	UTR	SLT	PCWP	RLH	QMCS
Pharm products promotional impact (PIPP)	1						
Lengthy prescription (LP)	0.001	1					
Unnecessary test requirements (UTR)	0.616**	-0.025	1				
Spending less time (SLT)	0.647**	0.022	0.536**	1			
Poor comm. with patients (PCWP)	0.091	0.205*	0.115	0.121**	1		
Requirements for longer staying (RLH)	0.172**	0.211*	0.211**	0.146	0.146	1	
Quality of medical care services (QMCS)	0.707**	0.402**	0.220**	0.634**	0.659**	0.502**	1

Notes: ** Correlation is significant at 0.01 level 2 tailed; * Correlation is significant at 0.05 level 2 tailed.

6.3.4 Multiple regression analysis

(1) Coefficient of determination

The coefficient of determination shows the proportion of variance in the dependent variable (QMCS) explained by the study's explanatory variables. Table 7 shows 78.1 % of the changes in the QMCS could be attributed to the combined effect of the predictor variables. However, 21.9 % of the variance is explained by other factors that are not covered in the study.

Table 7Fornell-Lecker criterion

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	0.888	0.788	0.781	0.30308

Notes: Predictors: PIPP, LP, UTR, SLT, PCWP and RLH; Dependent Variable: Quality of medical care services (QMCS)

(2) Overall significance of the model

The ANOVA tests whether the overall regression model fits the data well. If the p-value is < 0.05, the regression model is a good fit for the data. So, Table 8 shows that the p-value < 0.05. Thus, it is found that the model is statistically significant with ($R^2 = 0.788$, F(5, 142) = 105.773, p < 0.000).

Table 8 Overall model fit						
Model	Some of Squares	df	Mean Square	F-value	Sig.	
Regression	48.579	5	9.176	105.773	0.000	
Residual	13.033	142	0.092			
Total	61.633	147				

Notes: Predictors: PIPP, LP, UTR, SLT, PCWP and RLH; Dependent Variable: Quality of medical care services (QMCS)

(3) Hypothesis testing

A significant test is performed to decide whether independent variables influence the dependent variable. If the p-value is below 0.05, the results have a significant effect. The results of the significance test are shown in Table 9.

Accordingly, by looking down at the standardized beta coefficients column, it is observed that process ($\beta = 0.380$, p < 0.000), Promotional impact of pharmaceutical product (PIPP) with ($\beta = 0.373$, p < 0.000), Lengthy prescription (LP) ($\beta = 0.240$, p < 0.000), Unnecessary test requirement (UTR) ($\beta = 0.230$, p < 0.000), Spending less time (SLT) ($\beta = 0.230$, p < 0.000), (0.230), Poor communication with patient (PCWP) ($\beta = 0.378$, p < 0.000) and Request for longer staying in hospital (RLSH) ($\beta = 0.311$, p < 0.000) respectively is positively

Model			Standardized Coefficients Beta	t	Sig.		
(Constant)	-1.791	0.382		-4.687	0.000		
PIPP	0.331	0.050	0.373	6.678	0.000		
LP	0.314	0.089	0.139	3.515	0.000		
UTR	0.232	0.067	0.240	4.740	0.000		
SLT	0.214	0.049	0.230	4.407	0.001		
PCWP	0.255	0.040	0.378	4.441	0.000		
RLH	0.321	0.021	0.311	9.471	0.000		

 Table 9
 Variables' level of significance

Notes: Dependent Variable: Quality of medical care services (QMCS)

related to Quality of medical-care services offered by a physician in medical-care market in Bangladesh. Further, the 'sig' column tells whether the variable is making a statistically significant unique contribution. If p < 0.05, it shows that the variable is making a significant and unique contribution to the prediction of the dependent variable.

(4) ANOVA

The results of the ANOVA test are shown in Table 10. It has been seen that factors such Promotional impact pharmaceutical products, Lengthy prescription, Unnecessary test results, Spending less time, Poor communication with patient and Requirement for longer staying in hospital had the value of an insignificant value of more than 0.05, showing the same point of view about the factors influencing Quality of medical-care services of a physician in medical-care market in Bangladesh.

	Table 10ANO	OVA resu	ılts		
	Sum of Squares	df	Mean Square	F-value	Sig.
Between Groups	0.036	2	0.018	0.033	0.967
Within Groups	78.581	145	0.542		
Total	78.617	147			
Between Groups	0.041	2	0.020	0.256	0.782
Within Groups	12.004	145	0.083		
Total	12.044	147			
Between Groups	0.075	2	0.038	0.083	0.921
Within Groups	65.076	145	0.438		
Total	65.077	147			
Between Groups	0.092	2	0.046	0.094	0.910
Within Groups	71.081	145	0.490		
Total	71.087	147			
Between Groups	0.802	2	0.401	0.096	0.384
Within Groups	60.306	145	0.445		
Total	60.022	147			
Between Groups	0.911	2	0.341	0.098	0.546
Within Groups	78.001	145	0.556		
Total	78.022	147			
	Between Groups Within Groups Total Between Groups Within Groups Total	Table 10ANGSum of SquaresBetween Groups0.036Within Groups78.581Total78.617Between Groups0.041Within Groups12.004Total12.044Between Groups0.075Within Groups65.076Total65.077Between Groups0.092Within Groups71.081Total71.087Between Groups0.802Within Groups60.306Total60.022Between Groups0.911Within Groups78.001Total78.022	Table 10 ANOVA result Sum of Squares df Between Groups 0.036 2 Within Groups 78.581 145 Total 78.617 147 Between Groups 0.041 2 Within Groups 12.004 145 Total 12.044 147 Between Groups 0.075 2 Within Groups 65.076 145 Total 65.077 147 Between Groups 0.092 2 Within Groups 71.081 145 Total 71.087 147 Between Groups 0.802 2 Within Groups 60.306 145 Total 0.802 2 Within Groups 60.306 145 Total 0.911 2 Within Groups 78.001 145 Total 78.001 145 Total 78.001 145	Table 10 ANOVA results Sum of Squares df Mean Squares Between Groups 0.036 2 0.018 Within Groups 78.581 145 0.542 Total 78.617 147 0 Between Groups 0.041 2 0.020 Within Groups 12.004 145 0.083 Total 12.044 147 0 Between Groups 0.075 2 0.038 Within Groups 65.076 145 0.438 Total 65.077 147 0.490 Between Groups 0.092 2 0.046 Within Groups 71.087 147 0.490 Between Groups 0.802 2 0.401 Within Groups 60.306 145 0.445 Total 60.022 147 0.341 Between Groups 0.911 2 0.341 Within Groups 78.001 145 0.556 Total	Table 10 ANOVA results Sum of Squares df Mean Squares F-value Between Groups 0.036 2 0.018 0.033 Within Groups 78.581 145 0.542 0.033 Total 78.617 147 0 0.020 0.256 Within Groups 0.041 2 0.020 0.256 Within Groups 12.004 145 0.083 0.083 Total 12.044 147 0 0.083 Between Groups 0.075 2 0.038 0.083 Within Groups 65.076 145 0.438 0.083 Total 65.077 147 0.094 0.094 Between Groups 0.092 2 0.046 0.094 Within Groups 71.087 147 0.445 0.445 Between Groups 0.802 2 0.401 0.096 Within Groups 60.306 145 0.445 0.445 Total

7 Discussion and interpretation of the findings

The model analysis results revealed that the entire hypothesis in the Quality of medical-care services is significant and makes a unique contribution to the prediction of the dependent variable. This finding is supported by the study of (Juran, 1992; S. Shanmugapriya and Subramanian, 2015). The summary of the regression model and hypothesis test is presented in Table 11.

8 Conclusion

Based on statistical analysis, this study aims to decide the factors that are introduced in literature by the current author on affecting the quality of medical-care services offer by a physician in today's medical-care market country-wise such as Bangladesh. It further examines and describes the relationship among the factors and then decides its influence affecting the physician's quality of medical-care services. Here primary data was collected from patients and patient-attendants in different private and government hospitals found in Dhaka City. This data statistics are used in this study for quantitative research approaches to conduct the goals. The dependent variable "quality of medical-services (PQMCS)" is regressed on six explanatory variables: a) pharmaceutical products promotional impact b) lengthy prescription c) unnecessary

Нурс	thesis	P-value	Decision
Ha1:	There is a positive relationship between promotional impact of pharma products and physician's quality of medical-care services.	0.000	Accepted
Ha2:	There is a positive relationship between lengthy prescription and a physician's quality of medical-care services.	0.000	Accepted
Ha3:	There is a positive relationship between unnecessary test requirements and the quality of medical-care services of a physician.	0.000	Accepted
Ha4:	There is a positive relationship between spending less time and quality of medical-care services of a physician.	0.000	Accepted
Ha5:	There is a positive relationship between poor communication with patients and quality of medical-care services of a physician.	0.000	Accepted
Ha6:	There is a positive relationship between requirements for longer staying in hospital and quality of medical-care services of a physician.	0.000	Accepted

Table 11	Summary	of Hypot	hesis Testing
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test requirements d) spending less time e) poor communication with patients and f) requirements for longer staying in hospital (private hospitals cases) etc. These characteristics were gathered from survey-opinions of patients and patient-attendants. These data statistics are used to decide the validity of the model. All multiple regression assumption tests were found to be valid. According to regression analysis, it was found that each of the explanatory variables have a substantial negative impact on a physician's quality of medical-services in the medical-care market. The analysis from one-way ANOVA reveals that patients and patient-attendants have similar feelings of the six independent variables that undermine a physician's quality of medicalservices on duty. Results from this study can be used by policymakers as well as leaderships of hospitals (government and private) for policy-design and for administrative approaches addressing today's problem of medical-care market in Bangladesh. Since most physicians are employed either in government or in private sector or in both sectors, it is obvious that enforcing effective management systems can be instrumental curtailing the magnitudes of the problem soon. Obviously, in this case both government & private hospitals must work together for the interest of Bangladeshi-society, which can ensure quality & sustainable medical-care market soon in Bangladesh. The findings of this study can be a synopsis of medical-care services in today's business-driven world country-wise where undertaking further study on policy-design can be instrumental.

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