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RESEARCH ARTICLE

Doctor-patient relationship: Evidence from Bangladesh

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Abstract

Background and Aims: This study analyses the nature and magnitude of the doctor-patient relationship in Bangladesh, intending to trigger policy discussions for improving healthcare quality. The dearth of research on the nature and degree of this relationship in Bangladesh as well as the global context motivates us to conduct this study.

Method: We use primary data from three different surveys conducted during July to October 2018. The study conducts a public perception survey on 701 individuals at various public places in Dhaka City. In addition, we interview 100 exit-patients from two major public hospitals, four for-profit-private hospitals, and one not-for-profit private hospital in Dhaka City. We also interview a total of 62 doctors of different ladders. Each survey uses a structured questionnaire with a set of questions customized in the Bangladesh context.

Results: The score of the doctor-patient relationship is found quite low from the viewpoint of the public, the patients, and the doctors. However, the score is comparatively high from the doctor's point of view. The results show that lack of optimum time allocation for the patients, not explaining the prescription clearly, and discriminating the patients by their social status are the main factors for a poor relationship with doctors.

Conclusions: The doctor-patient relationship is substantially poor from the public, patients, and the doctors' viewpoints. Orienting the doctors to non-therapeutic care (ie, respectful behavior, privacy, dignity, prompt attention, clear communication) in all levels of medical education and training, and improving working conditions of the hospitals are the crucial policy implications.

KEYWORDS
Bangladesh, doctor's perception, doctor-patient relationship, patient perception, public perception, trust

1 | INTRODUCTION

The outcomes of a surgical or nonsurgical medical procedure depend on an accurate diagnosis of the disease, which is primarily contingent on taking proper history and physical examination of the patient.[1] A doctor can elicit the patient's detailed history if she is cordial, sympathetic, and trustworthy enough to the patient.[2] Additionally, a doctor can motivate her patients to properly follow the

prescription and suggestions by allocating optimum time, providing mental support, behaving indiscriminately, clearly explaining the type of disease, and clarifying the prescription and treatment procedures. The doctor-patient relationship, thus, predictably affects the medical outcomes. A doctor needs to communicate on emotional and cultural affairs to provide satisfactory treatment simultaneously. In contrast, cooperation and compliance by the patients in the treatment process are also crucial for quality healthcare service.[3]

The nature of the relationship between doctors and patients determines the outcome of medical treatments and their efficacy to a large extent.[4] The patient's values and preferences along with the medical facts diagnosed by the doctors are essential for clinical decisions.[5] Evidence shows that shared decision-making results in a good doctor-patient relationship, leading to a better quality of treatment.[6,7] A good doctor-patient relationship and communication are associated with improving the health-related quality of life of the patients living with chronic illnesses like cancer.[6,8-12] In the cases of patient-centered care, most decisions regarding accurate diagnosis, effective treatment, and health outcomes depend on the quality of the doctor-patient relationship.[13,14]

Additionally, a trustworthy relationship between doctor and patient leads to better medical outcomes. In contrast, mistrust between doctor and patient produces sub-optimal medical outcomes. Thus, a doctor-patient relationship is an integral part of healthcare delivery.[15] An inappropriate doctor-patient relationship adversely affects the whole healthcare delivery system by declining citizens' confidence. If a patient relies on a specific doctor, she visits the same physician repeatedly, the doctor-patient relationship becomes deeper.[16] When a patient cannot rely on the health system, she may visit multiple doctors for the same episode of illness for authentication. Lack of confidence in the health system also leads affluent patients to go abroad for treatment purposes.[17] This mistrust may eventually contribute to increasing out-of-pocket (OOP) expenses for health care. Scientific evidence on the doctor-patient relationship is highly imperative for policy discussions. Available literature in the global context concentrated merely on validating the questionnaire to measure doctor-patient relationship.[18-21] Although some literature focuses on the importance of a healthy relationship between doctors and patients, there is a dearth of research on measuring the level of the doctor-patient relationship in the global context. This area also receives little attention in the Bangladesh context. The lack of scientific evidence in both national and international perspectives motivates us to conduct the study. This study aims to assess the existing level of the doctor-patient relationship to generate baseline evidence for policy discussions. The findings of the study are crucial to trigger policy discussions to establish a sound doctor-patient relationship.

This article is organized as follows. Section 2 explains the methods. Section 3 presents the results. Section 4 provides discussions and conclusions.

2 | METHODS

2.1 | Data

The study analyses the primary data from three different perspectives (public perception, patient perception, and doctor's perception) to capture the whole gamut of the doctor-patient relationship. However, the study mainly focuses on public perception because the public was more capable of describing the doctor-patient relationship than the exit patients while piloting the data collection instruments (DCIs). This is because the public describes their perception based on their experience with themselves, family members, relatives, neighbors, and friends. In contrast, exit patients describe their perception based on the latest incident. Based on the single population proportion formula with a 95% confidence interval, 50% prevalence, 5% margin of error, 1.5 design effects, and 20% nonresponse rate, the estimated sample size stands at 691. However, we interview a total of 701 respondents in the public perception survey. We collect data on public perception from five major public places (such as railway stations, bus stations, launch terminals, educational institutions, and marketplaces) during July to October 2018. We target to interview 140 respondents from each of the five categories of public places using the convenience sampling technique because a probabilistic sampling method is not appropriate in a public place. However, we interview an additional respondent from one of the public places. The respondents are selected based on a set of criteria, such as age above 18 years, and visited a doctor as a patient or an attendant for the last 5 years.

As the main focus of the study is to assess the doctor-patient relationship from the public point of view, we use an indicative sample size for the patient perception survey and the doctor's perception survey due to resources constraint. The study collects data on patient perception from 100 exit patients of two major public hospitals, four large private hospitals, and one not-for-profit private hospital in Dhaka City. Therefore, it interviews 52 patients from the public, 29 from the for-profit-private, and 19 from the non-profit-private healthcare facilities. We collect data on doctor's perceptions from 62 doctors of seven major public hospitals in Dhaka.

2.2 | Data collection instruments

We use a different set of questionnaire for interviewing each of the three groups of respondents: public, patients, and doctors. Consulting with the relevant literature, we prepare the questionnaires for eliciting their perceptions.[4,15,18] The public, patient, and doctor's perception questionnaires comprise a set of nine central questions, each of which sought responses in 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, and 5 = strongly agree). In addition, we also include a set of questions to capture the perception about the existing malpractices (ie, prescribing avoidable diagnostic tests and drugs, and inducing avoidable operations including cesarean section and intensive care unit [ICU]) of some physicians in their private practice.

In each set of questionnaire, we repeat some questions from the earlier sections to estimate the psychometric impact, that is, to measure the test-retest reliability. In reliability testing, the same respondents are asked the same questions at two different points to measure the response's stability over time. Because this survey involves interviews from outgoing passengers or people standing at public places or exit patients, as mentioned earlier, it is not possible to interview those respondents again. Therefore, as an alternative, we incorporate questions of selected indicators a second time at the end of the questionnaire. We administer the Bangla version of the questionnaire by the trained enumerators for eliciting public and patient perceptions. However, the English version of the questionnaire is self-administered for producing the perception of the doctors.

The research protocol receives ethical approval from the institutional review board of the Institute of Health Economics, University of Dhaka. All participants of the research are fully informed about the procedures and risks involved and solicited their consent to participate. We also guarantee the participants' confidentiality.

2.3 | Data analysis

We use both descriptive statistics and multivariate methods to analyze the quantitative data. We estimate the mean perception score of the doctor-patient relationship. The study defines the percentage of respondents retorting agree or strongly agree as a positive perception score for each indicator. Similarly, it also explains the percentage rating of disagreeing, strongly disagree, or neutral as a negative perception score. We consider the neutral option along with disagreeing and strongly disagree options for defining negative perception. The reason is that usually, an individual in Bangladesh chooses the neutral option if she likes to respond indifferently or not positively.

For each indicator, to test for a difference in scoring tendencies of the respondents between two categories (ie, male and female), we use the Mann-Whitney test. In contrast, we use the Kruskal-Wallis test for a variable with more than two categories (ie, age, education, and occupation). Moreover, we estimate the mean score for each indicator. We also estimate the weighted mean score for each respondent where the number of questions with the same answer are considered as weight. Finally, we estimate the overall (weighted mean) perception score to measure the overall doctor-patient relationship. We define the perception as negative (ie, poor doctor-patient relationship) when the overall (weighted mean) perception score is below 4, and positive when it is 4 or above.

Additionally, we use a *t*-test to test for a difference in means (overall perception) between two categories (ie, male and female) and one-way analysis of variance (ANOVA) for a variable with more than two categories. In multivariate analysis, we develop three linear regression models for the public, patients, and doctor's perceptions. These models use the socio-demographic variables and all the indicators representing doctor-patient relationship as predictors and the weighted mean (overall perception) score as the dependent variable.

We conduct a psychometric analysis to assess the validity, reliability, and feasibility of the survey instruments. The survey satisfies the feasibility condition because there is a 100% response rate with no missing values. To assess the validity of the survey instrument, we test the construct validity for measuring unidimensionality, that is, the validity of the set of indicators used to elucidate the perception of the respondents on the doctor-patient relationship. The study uses two measures of assessing construct validity—factor analysis and Cronbach's alpha. We use confirmatory factor analysis (CFA) to meet the construct validity criteria assuming that each indicator used to measure the respondents' experience with the doctors or patients could explain the doctor-patient relationship. We test whether all the indicators can describe a single latent construct called "perception." We use CFA instead of explanatory factor analysis (EFA) because we have a priori assumption about the underlying dimensionality of the construct.

The factor loadings estimated from factor analysis measure the correlation between responses to the questions and the unobserved variable called factor or construct (in the case of this study, it is called perception toward the doctors/patients). Different studies have different fixed cutoff points because there is no strict cutoff point for the factor loading. For example, some studies set a substantial factor loading is ≥ 0.4[22,23] while others put it as >0.5.[24] The uniqueness value, which reveals the explanatory power of the factor of each indicator, is also estimated. Lower uniqueness values indicate a higher explanatory power of the element.

The Cronbach alpha coefficient is also estimated to assess the internal consistency reliability or to assess the unidimensionality. The coefficient ranges from 0 (lowest reliability) to 1 (highest reliability), and a higher coefficient indicates a higher unidimensionality of the indicators. The cutoff value of alpha coefficients ranges from 0.6 to 0.8.[25-27] Kappa statistic, which also ranges from 0 to 1, is used to measure the test-retest reliability. According to the literature, Kappa values ranging from 0.41 to 0.60 means moderate, 0.61 to 0.80 substantial, and 0.81 to 1.00 almost perfect response agreement between the first response of the survey and the retest.[25]

3 | RESULTS

3.1 | Public perception toward the doctors

3.1.1 | Socio-demographic background

A majority (77.03%) of the respondents, as shown in Table 1, in the "Public Perception" survey is male. The age of the respondents ranges from 18 to 85 years. However, more than 60% of them are below 40 years of age. Most of the respondents are educated (about 46% have graduation or higher level of education, and almost 40% have secondary and higher secondary level education). About one-third of the respondents are service-holders, followed by business (16.5%), student (14.8%), day labor (14%), and housewives (11.70%).

TABLE 1 Socio-demographic background of the respondents participated in both the public perception survey and the patient perception survey

Attributes		Public perception survey		Patient perception survey	
		n	%	n	%
Gender	Male	540	77.03	59	59
	Female	161	22.97	41	41
Age	18-37	437	62.34	49	49
	38-47	147	20.97	18	18
	48 or above	117	16.69	33	33
Education	Primary or below	104	14.71	13	13
	Secondary or higher secondary	276	39.42	50	50
	Graduation or above	321	45.86	37	37
Occupation	Business	116	16.55	20	20
	Day labor	98	13.98	6	6
	Service	242	34.52	24	24
	Housewife	82	11.70	29	29
	Student	104	14.84	14	14
	Others	59	8.42	7	7

TABLE 2 Public perception and patient perception toward the doctors in Bangladesh

Indicators	Public perception					Patient perception				
	Positive perception		Negative perception		Mean score	Positive perception		Negative perception		Mean score
	%	n	%	n		%	n	%	n	
Provide medical treatment cordially	18.54	130	81.45	571	2.14	52.00	52	48.00	48	3.21
Provide adequate time	11.41	80	88.59	621	1.92	22.00	22	78.00	78	2.51
Provide mental support	18.26	128	81.74	573	2.16	26.00	26	74.00	74	2.77
Listen to the patients attentively	15.69	110	84.36	591	2.09	49.00	49	51.00	51	3.18
Patients are satisfied with the medical care provided	14.98	105	85.01	596	2.05	33.00	33	67.00	67	3.02
Describe the disease clearly	14.11	99	85.87	602	2.07	34.00	34	66.00	66	2.91
Explain the prescriptions clearly	10.98	77	89.02	624	1.98	27.00	27	73.00	73	2.77
No discrimination by social status	11.13	78	88.87	623	1.87	23.00	23	77.00	77	2.77
Having trust on doctors	21.68	152	78.35	549	2.44	37.00	37	63.00	63	3.07
Overall perception	15.20	107	84.81	594	2.08[a]	33.00	33	67.00	67	2.90[a]

[a]Weighted mean score.

3.1.2 | Public perception toward the doctors

More than 80% of the respondents exhibit negative perceptions toward doctors in Bangladesh (Table 2). The estimated overall weighted mean score (2.08) also confirms the existence of the poor doctor-patient relationship. Over three-fourths of the respondents negatively perceive all the indicators, of which one-third have a strong negative perception. The result shows that almost 90% of the respondents offer negative views while asking comments on the following statements: "doctors provide adequate time to the patients," "doctors do not discriminate among the patients by social status," and "doctors clearly explain the prescription." The majority of the respondents even do not have trust in doctors (Table 2).

The results of the multivariate analysis show that all the indicators in the public perception have a significantly (P-value ≤ .01) positive effect on the overall perception score of the doctor-patient relationship (Table 3). For example, when the score of "providing adequate time to the patients" increases by 1 unit, the overall perception score also increases by 0.12 unit, increasing the doctor-patient relationship by increasing positive perception toward the doctors (Table 3).

TABLE 3 The results of the linear regression model of the public perception, and the patient perception toward the doctors in Bangladesh

Indicators	Dependent variable: Overall perception score of doctor-patient relationship			
	Public perception		Patient perception	
	Coefficient (SE)	*P*-value	Coefficient (Std. Err.)	*P*-value
Gender (1 = Female)	−0.01 (0.01)	.67	−0.01 (0.02)	.79
Age group (18-37 years is the reference category)				
38-47 years	−0.03 (0.01)	.06	0.00 (0.02)	.95
48 or above	0.01 (0.01)	.45	−0.01 (0.02)	.49
Education group (primary or below is the reference category)				
Secondary or higher secondary	0.00 (0.01)	.92	−0.01 (0.02)	.56
Graduation or above	0.00 (0.01)	.96	−0.03 (0.03)	.25
Occupation group (unearned is the reference category)				
Business	−0.01 (0.01)	.58	−0.01 (0.02)	.61
Service	−0.01 (0.02)	.49	0.02 (0.02)	.40
Day labor	−0.01 (0.01)	.40	−0.01 (0.03)	.86
Indicators				
Provide medical treatment cordially	0.09 (0.01)	.00	0.09 (0.01)	.00
Provide adequate time	0.12 (0.01)	.00	0.12 (0.01)	.00
Provide mental support	0.10 (0.01)	.00	0.11 (0.01)	.00
Listen to the patients attentively	0.09 (0.01)	.00	0.10 (0.01)	.00
Patients are satisfied with the medical care provided	0.12 (0.01)	.00	0.13 (0.01)	.00
Describe the disease clearly	0.10 (0.01)	.00	0.10 (0.01)	.00
Explain the prescriptions clearly	0.11 (0.01)	.00	0.11 (0.01)	.00
No discrimination by social status	0.11 (0.01)	.00	0.14 (0.01)	.00
Having trust on doctors	0.12 (0.01)	.00	0.11 (0.01)	.00
	Number of observation = 701		Number of observation = 100	
	Prob > F = 0.00		Prob > F = 0.00	
	Adj R-squared = 0.98		Adj R-squared = 0.99	

The results of the nonparametric significance test (ie, Mann-Whitney test/Kruskal-Wallis test) of the indicators of the public perception reveal a significant difference in scoring tendencies between males and females, and people with different age groups in all the indicators. The results are also similar for the people with different occupations in 6 out of 9 indicators and people with varying levels of education in 5 out of 9 indicators (results not shown in table). Although the multivariate analysis shows that there is no significant effect of gender, age, education, and occupation on the overall perception score, the results of the *t*-test and one-way ANOVA reveal opposite scenarios except for the "education level." The overall mean perception score is significantly (*P*-value ≤ .01) lower among the male (1.98) than the female (2.42) respondents (results not shown in table). In other words, the male respondents have a significantly higher negative perception than the female respondents toward the doctors. The results show that the level of negative perception is substantially higher among the older (1.86) and the younger (2.08) compared to the middle age (2.25) groups (results not shown in table). There is no significant difference in the overall negative perception score among the respondents of different education levels. The level of negative perception increases substantially with the increase in the level of education for some indicators, such as "doctors provide adequate time," "listen to patients attentively," and "having trust in doctors." The negative perception score is significantly (*P*-value ≤ .01) higher among the businessman and service holders than the day labor and unearned respondents (results not shown in table).

The study also presents the public perception regarding the healthcare prescribing behavior of physicians in the private hospitals of Bangladesh. The study finds that 82% of people believe that physicians prescribe unnecessary "diagnostic tests" to the patients of the private hospitals (results not shown in table). Three-fourth of the respondents also have the perception that physicians prescribe surplus "medicine" to the patients. Moreover, a majority (86.39%) of the respondents also think that doctors perform unnecessary "cesarean section" in childbirth in private health facilities. About half of the citizens also negatively perceive the doctors due to their malpractices, such as suggesting unnecessary "ICU" or performing unnecessary surgical operations on the patients (results not shown in table).

3.2 | Patient perception toward the doctors

3.2.1 | Socio-demographic background

In the patient perception survey, in addition to asking nine central questions administered to elicit the patients' perception of the doctors, we ask them about their socioeconomic characteristics. Most of the patients are male (59%), and almost half are below 40 years of age (Table 1). More than one-third of patients have graduated or higher level of education, and half of them have secondary or higher secondary education. Less than one-third of the patients are housewives, followed by service holders (24%) and businessmen (20%), etc.

3.2.2 | Patient perception toward the doctors

Overall, based on the general information comprising of nine different indicators, 67% of patients have negative perceptions while about 33% of patients have positive perceptions of the physicians (Table 2). The estimated overall weighted mean score (2.90) also unveils a poor doctor-patient relationship from the patient's point of view. Nearly 80% of the patients report that doctors do not provide enough (needed) time during the consultation, discriminate among the patients of different social echelons, and do not clearly explain the prescription. It is worth mentioning that, as public perception, it reveals the lowest mean score (strong negative perception) for these three indicators (Table 2). Nevertheless, more than half of the patients have positive insight that doctors cordially provide medical treatment. About half of the patients exhibit positive insight to the indicator "doctors listen to the symptoms of the diseases attentively and try to understand" (Table 2). More than 60% of the patients report that they are not satisfied with the medical treatment of the doctors, and they even do not have trust in doctors.

The multivariate analysis exhibits similar results like the public perception that all the indicators have a significantly (P-value ≤ .01) positive effect on the overall perception score of the doctor-patient relationship (Table 3). For example, when the score of "no discrimination by social class" increases by one unit, the overall perception score increases by 0.14 units, increasing positive perception toward the doctors (Table 3).

The results show that the estimated overall mean perception score is not significantly different among the different socio-demographic indicators groups (Results not shown in table). Unlike the public perception, there is no significant difference in scoring tendencies between males and females, people with different age groups, people with different occupations, and people with varying levels of education in all indicators (results not shown in table). Similar results reveal from the multivariate analysis that there is no significant effect of gender, age, education, and occupation group on the overall perception score (Table 3).

The study finds no significant difference in perception scores between the public and the private hospitals. The negative perception is higher toward the doctors in public hospitals than the private hospitals in 8 out of 9 indicators, but the difference is not statistically significant (results not shown in table).

TABLE 4 Doctor's perception toward the patients in Bangladesh, and Confirmatory factor analysis (CFA) and Cronbach alpha coefficients estimated from doctor's perception data

	Positive perception		Negative perception			Factor analysis		Cronbach alpha coefficients	
Indicators	%	n	%	n	Mean score	Factor loadings	Uniqueness	Interitem correlation	Cronbach alpha
I have freedom of treatment	77.42	48	22.58	14	3.77	0.35	0.20	0.32	0.79
I can play vital role for choosing treatment protocol	87.10	54	12.90	8	4.08	0.44	0.33	0.31	0.78
Patients/attendants respect me properly	58.06	36	41.94	26	3.39	0.78	0.30	0.26	0.73
Patients/attendants are highly cooperative	29.03	18	70.97	44	2.85	0.70	0.21	0.28	0.75
Patients listen to me carefully	62.90	39	37.10	23	3.47	0.77	0.43	0.27	0.74
Patients follow my instructions carefully	48.39	30	51.61	32	3.11	0.79	0.29	0.26	0.73
Patients/attendants are well-behaved.	32.26	20	67.75	42	2.93	0.84	0.28	0.25	0.72
I do not face unnecessary questions from the patients	82.26	51	17.75	11	3.95	0.81	.24	0.35	0.81
I have proper safety if any unexpected incident occurs	22.58	14	77.42	48	2.08	0.65	0.32	0.30	0.87
Overall perception	55.55	34.4	44.45	27.6	3.37a	0.68	0.29	0.29	0.77

[a]Weighted mean score.

3.3 | Doctors' perception toward the patients

3.3.1 | Socio-demographic background

In the "Doctor's Perception" survey, we collect data from 62 physicians of seven government hospitals in Dhaka City. Among these physicians, about 68% (42 out of 62) physicians of government (ie, public) hospitals also engage in private practice, and the remaining 32% of physicians only provide care to the patients in public hospitals. More than three-fourth of the physicians are male (77.4%), and nearly one-fourth (22.6) are female. More than half of the respondents are 24 to 34 years old. Most doctors (61.3%) have MBBS degrees, while only 17.7% and 20.9% of physicians have post graduate education (FCPS and MD/MS degrees). More than one-third of the physicians have 11 to 28 years of experience in the medical profession (results not shown in table).

3.3.2 | Doctor's perception toward the patients

Table 4 presents the overall perception of doctors toward the patient in Bangladesh, measuring through nine different indicators. The estimated overall weighted mean score (3.37) shows a poor doctor-patient relationship (Table 4). About 77% of doctors have disagreed that they have proper safety if any unexpected incident occurs. However, more than 80% of the physicians express their positive views while asking comments on: "I can play a vital role in choosing treatment protocol," and "I do not face unnecessary questions from the patients." About 71% of the physicians report that patients or attendants are not cooperative in the treatment process (Table 5).

The multivariate results reveal that all the indicators except "patients/attendants respect me properly" in the doctor's perception have significantly (*P*-value ≤ .01) positive effect on the overall perception score of the doctor-patient relationship (Table 5). Interestingly, this result is quite similar to the public perception and the patient perception. For example, when the score of "patients/attendants are well behaved" increases by one unit, the overall perception score also increases by 0.13 unit, which increases the doctors' positive perception of the patients.

There is no significant difference in scoring tendencies for all the nine indicators between male and female doctors, doctors with different age groups, doctors with different educational qualifications, and doctors with diverse experience in the medical profession (results not shown in table). The results show that the estimated overall mean perception score is not significantly different among the doctors with different socio-demographic characteristics. Like the patient perception, the multivariate analysis shows that there is no significant effect of gender, age, education, and experience of the doctors on the overall perception score (Table 5).

3.3.3 | Psychometric analysis: Public perception, patient perception, and doctor's perception survey

The values of factor loadings estimated from factor analysis revealed that almost all the indicators are highly correlated (0.70 or higher) to the factor in all the three surveys. In other words, all these indicators can measure the doctor-patient relationship (Tables 4 and 6). Moreover, the uniqueness values for the indicator also disclose that the explanatory power of the factor to most of the indicators is very high. For instance, in the public perception survey, for the indicator rating "the doctors cordially provide medical treatment to the patients," the uniqueness value 0.37 means that the factor explains 63% of the variance in the responses to this indicator. The values of Cronbach alpha coefficients are nearly 0.80 for all the indicators in all the three surveys (Tables 4 and 6). Thus, the results confirm that the indicators measure a unidimensional construct. The results also show that the inter-item correlation is greater than 0.50 for all the indicators,

TABLE 5 The results of the linear regression model of the doctor's perception toward the patients in Bangladesh

Indicators	Dependent variable: Overall perception score of doctor-patient relationship	
	Coefficient (Std. Err.)	*P*-value
Gender (1 = Female)	−0.06 (0.05)	.25
Age group (24-34 years is the reference category)		
35-45 years	0.04 (0.07)	.57
46 or above years	0.07 (0.09)	.47
Highest educational qualification group (MBBS is the reference category)		
FCPS	−0.01 (0 .06)	.89
MD/MS	0.01 (0.06)	.93
Experience in medical profession group (1-5 years is the reference category)		
6-10 years	0.02 (0 .05)	.63
11 or above years	0.01 (0.09)	.92
Indicators		
I have freedom of treatment	0.12 (0.02)	.00
I can play vital role for choosing treatment protocol	0.08 (0.03)	.01
Patients/attendants respect me properly	0.03 (0.02)	.25
Patients/attendants are highly cooperative	0.10 (0.02)	.00
Patients listen to me carefully	0.08 (0.03)	.01
Patients follow my instructions carefully	0.11 (0.03)	.00
Patients/attendants are well-behaved.	0.13 (0.03)	.00
I do not face unnecessary questions from the patients	0.09 (0.02)	.00
I have proper safety if any unexpected incident occurs	0.09 (0.02)	.00
	Number of observation = 62	
	Prob > F = 0.00	
	Adj R-squared = 0.94	

TABLE 6 Confirmatory factor analysis (CFA) and Cronbach alpha coefficients estimated from public perception data, and patient perception data

	Public perception				Patient perception			
	Factor analysis		Cronbach alpha coefficients		Factor analysis		Cronbach alpha coefficients	
Indicators	Factor loadings	Uniqueness	Inter-item correlation	Cronbach alpha	Factor loadings	Uniqueness	Inter-item correlation	Cronbach alpha
Provide medical treatment cordially	0.79	0.37	0.56	0.92	0.84	0.30	0.59	0.93
Provide adequate time	0.75	0.43	0.56	0.92	0.57	0.67	0.64	0.93
Provide mental support	0.73	0.47	0.57	0.92	0.75	0.43	0.60	0.93
Listen to the patients attentively	0.80	0.36	0.55	0.92	0.83	0.31	0.59	0.93
Patients are satisfied with the medical care provided	0.79	0.37	0.55	0.92	0.82	0.32	0.59	0.93
Describe the disease clearly	0.63	0.60	0.58	0.92	0.77	0.41	0.60	0.93
Explain the prescriptions clearly	0.60	0.65	0.59	0.92	0.76	0.43	0.60	0.93
No discrimination by social status	0.62	0.62	0.58	0.92	0.65	0.58	0.62	0.93
Having trust on doctors	0.75	0.44	0.56	0.92	0.77	0.41	0.61	0.93
Overall value	0.72	0.48	0.57	0.92	0.75	0.43	0.61	0.93

confirming that the indicators can measure a single unidimensional construct. Kappa statistic, which measures test-retest reliability, ranges from 0.77 to 0.87 in this study. These results indicate that the response agreement is almost perfect between the first response of the survey and the retest.[25]

4 | DISCUSSION AND CONCLUSIONS

The nature and degree of the doctor-patient relationship regulate the quality of healthcare. A congenial doctor-patient relationship increases the likelihood of desired health outcomes by ensuring quality healthcare. Thus, it plays a vital role in developing a strong healthcare delivery system in a country. The study finds that the score obtained for doctor-patient relationship from the public, patients, and doctors' viewpoints is quite low. The public perception toward the doctors is alarmingly negative. Most (84.8%) of the people have expressed their negative perception of the doctors. This research reveals that discriminating the patients by socio-economic status, and not allocating adequate time for consultation are the most crucial factors for the poor doctor-patient relationship. The majority of the respondents claim that they are not satisfied with the medical care provided by the doctors, and do not have a trustworthy relationship with them. The results show that lack of clear communication in describing the disease and explaining the prescription clearly to the patients or attendants are important factors for creating such a negative perception toward the doctors. Allocating fewer minutes to the patient for clearly describing the disease as well as a prescription is dictated by, as evidenced, the factors like poor governance, shortage of health workforce, and lack of comprehensiveness.[28]

Two-third of the patients expressed their negative views toward the doctors. It seems that patients have a better perception of doctors than the public. However, there is some possibility of over-reporting positive views as patient perception is specific to a particular doctor. On the contrary, public perception is derived from the accrued experience with himself/ herself, family members, relatives and neighbors, and media. Like a public perception survey, lack of optimum time allocation and communication gap is also reported as a poor relationship with the physicians. Patients also maintain that the doctors are neither sympathetic nor supportive to them.

The disaggregated results with sex, age, education level, and occupation of the citizens obtained from the public perception survey show that the negative perception score is substantially higher among the male, older, younger, businessman, and service holders compared to their respective counterparts. There is no significant difference in the overall negative perception score among the respondents of different education levels. However, results from the patient perception show opposite scenarios that the patients' overall perception toward the doctors is not significantly different between male and female, people with different age groups, people with different occupations, and people with varying levels of education. The study finds no significant difference in perception scores between the public and the private hospital. The negative perception is found to be highest toward the doctors in public hospitals than the private hospitals in 8 out of 9 indicators, but the difference is not statistically significant. More

precisely, patients are quite dissatisfied, especially with the non-therapeutic care received from the public hospitals. Similar findings are found in a previous study.[29] There is little emphasis on the medical education curriculum in Bangladesh to orient the students regarding these crucial factors. People also perceive that physicians are involved in various malpractices, including the irrational prescription of a diagnostic test, medicine, cesarean section, and ICU in private healthcare facilities.

The doctor-patient relationship is very poor from both public and the patients' point of view, while this relationship is not so bad from the physicians' perspective. More than half of the physicians positively perceive the patients, while about 44% have a negative insight into the patients. Lack of cooperation of the patients and not ensuring proper safety to the doctors are the reasons for developing negative perception.

Although the findings of this study are not directly comparable to other studies due to the paucity of evidence with similar settings, it has important policy implications. This study suggests that government and the relevant authorities should adopt some measures to develop a congenial relationship between the doctors and patients: proper equipping and staffing the government healthcare facilities especially the emergency units, enacting law for improving safety and security of the doctors, orienting doctors to non-therapeutic care in all levels of medical education and training, and improving working conditions of the hospitals.

5 | LIMITATIONS

Due to resource constraints, the study is confined to a limited number of samples in the patient perception survey and the doctors' perception survey. The patient perception survey is centered on a few hospitals in Dhaka City. The doctor perception survey is also focused on Dhaka City. Further study with a larger sample is important to generalize the results for better policy prescription.

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CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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TRANSPARENCY STATEMENT

The corresponding author of the article affirms that this manuscript is honest, accurate, and transparent, that there is no omission of any important aspects of the study, and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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