

## Determinants of the Patient Choice of Health Care Provider in Bangladesh

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## ABSTRACT

**Background**: In Bangladesh, people have many choices to get healthcare facilities; like formal and informal health care. Patients are free to select any health care professional, from a licensed physician to a conventional faith healer. The major objectives are to examine the association between health care choice (HCC) and related factors.

**Study design and Methods**: A cross-sectional survey was conducted randomly with 230 people in Gopalganj district in Bangladesh. Data were collected by interviewing using a self-reported questionnaire who had been sick for the previous six months and field work conducted from July to December 2023. Descriptive statistics were used to explain their socio-demographic characteristics and factors of health care choice. The significance of the association between each component and healthcare choice has been assessed using the Chi-square test.

**Results**: A chi-square test of independence result, taking into account demographic and socioeconomic variables, indicates that there is a significant relationship between HCC and respondents' education and illness severity (values of  $\chi 2 = 9.053$ , p =.029, and  $\chi 2 = 27.248$ , p =.000, respectively). Other variables, such as gender, location and family income, are not significantly associated with HCC. Out of the 12 variables related to health care, only three—location, relationship with a doctor, and other medical facilities—are statistically significant at the 1%, 5%, and 10% level. These variable values are  $\chi 2 = 8.965$ , p = 0.062,  $\chi 2 = 8.005$ , p =.090, and  $\chi 2 = 10.200$ , p =.037. The remaining nine variables are not significantly associated with HCC.

**Conclusion:** The findings demonstrated that patients received a different type of health care choice (HCC) that is significantly depends on their demand perspective, which is ignored in our country. Given the importance of the variables involved, the government ought to focus on improving the quality of doctor-patient collaboration, providing more hygienic facilities, and expanding medical services in innovative ways for patients.

Key words: Health care choice, Patient, Factors, Bangladesh.

## BACKGROUND

Bangladesh has a diversified healthcare system that includes both formal, such as that provided by the government hospital, private hospital, non-governmental organizations (NGOs), doner agencies and informal, such as that provided through traditional (untrained practitioners, homeopathic, ayurvedic, and unani medicine, medicine shops, kobiraj, religious beliefs, etc...) health practices (Jennings et al.,2021; Ahmed et al.,2015). One of the primary duties of the state is to improve public health and raise the standard of nutrition by offering balanced health and medical care, as stated in Article 15 of the Constitution (1972). Despite having few resources, Bangladesh has been making an effort to mainstream healthcare services that meet international standards (Ali,2020). Since Bangladesh has the lowest current healthcare expenditures (2.63%), public health



spending as a proportion of GDP was 0.66% in 2020 and, regrettably, the greatest percentage of out-of-pocket (OOP) medical expenses (74% of current healthcare spending) among SAARC countries in 2020, according to data from the World Bank. World Health Organization (WHO) reports show that the doctor-patient ratio is only 5.26 per 10000 population where most physicians and healthcare workers are concentrated in urban areas. In rural areas, the World Health Organization (WHO, 2013) estimates that the primary healthcare (PHC) needs of over 80% of the sick population in underdeveloped nations, including Bangladesh, are met by traditional healing methods.

The underlying belief that medical care can be provided by establishing clinics, training facilities, medical colleges, drug supplies, etc. is a common mistake in the many health care policies in developing nations. This only addresses the supply side of the issue (Habtom, G. K., & Ruys, P. 2007). A major problem in developing nations is that, even in the absence of user fees, access to health services is unequal because of many non-financial variables like geography. A demand-driven healthcare system has been put in place that emphasizes the significance of patient healthcare provider choice, as patient choice has not only recently gained relevance in a number of nations but also is a legal right to choose where one receives treatment (Victoor et. al. 2012). A large portion of the current empirical research has focused on examining how price and non-price rationing affect the demand for medical treatment. (Habtom, G. K., & Ruys, P. 2007). The absence of data regarding the demand for health care options in terms of price and non-price factors.

In the early 1960s, the economist started talking about and calculating the demand for healthcare. Grossman (1972) asserts that when people purchase health care, they do not so much want health care as they do good health and first constructed a model of the demand for health that is undoubtedly the most significant theoretical foundation for the demand for health care services. Doyle et al. (2020) in their book they showed theoretically, the demand for healthcare and health is based on the consumer utility theory. Anderson (1968), Kroeger (1983), Newbold and Bruce (1995), Henderson et al.(1994), Habtom et al. (2007) has demonstrated that three elements influence the demand for health care services: the need for care (features of perceived sickness), enabling factors (access to health care), and predisposing factors (social or demographic characteristics). In addition, studies conducted by Vuong, Q. H., & Nguyen, T. K. (2015), Kuunibe, N., & Dary, S. K. (2012), Brekke, K. R. et al (2014) the majority of researchers employed bivariate and multivariate analysis, binominal logistic, binary logistic, multinominal logistic, and descriptive analysis to establish this relationship. They also discovered that the factors influencing health care choice were essentially the same.

While prior studies have examined the correlation and dependency between HCC and other variables, our focus is on scale-based tools that allow patients to choose health care demands that were previously unclear in Bangladesh.

Our study on the choice of health care services provider is based on two health care options one is formal health care (government/private health facilities) another is informal health care (alternative/traditional/self-care). In this study we address a question that what socioeconomic variables differentiated individuals who select treatment options? This study aims to determine the relationship between sociodemographic factors as well as health care services that influence patients' selection of healthcare provider and examine the policy recommendation for future health care providing in Bangladesh.

#### The Study design, data and variables

This cross-sectional data was conducted in different person in Gopalganj sadar upazila. Participation in the study was voluntary. Through a self-administrative questionnaire, data were gathered. The data was collected in a 06 months period from July to December 2023. Before completing the questionnaire, respondents were asked if they had been sick in the six months leading up to or during the survey. A total of 230 samples were randomly gathered over this time range. A pre-tested survey was done in rural and urban areas of Gopalganj to 70 people who reported an illness after some adjustment the final questionnaire was used in the selected areas where 37.4% of them live in urban areas, and the remaining 62.2% live in rural areas. In addition to illness related information, data on the demographic and socioeconomic features of the respondents were gathered. Twelve criteria—such as availability and accessibility, cost consideration, the quality and reputation of medical care, and individual preferences—are used to collect information on the characteristics of health facilities. These variables were taken



from various literary works. We have included 12 elements under this area that influenced the patient's demand for or choice of healthcare. The Likert scale is a measurement instrument used to assess people's choices or opinions about specific issues, according to Alkharusi, H. (2022). To address their choice of healthcare provider, we employed a 5-point Likert scale, where 1 denotes no importance for decision-making and 5 denotes most importance for HCC or healthcare decision-making. One-sample t-test, the relative importance index, and a scale of class intervals of the scale composite scores were the three methods suggested for interpreting data from the Likert scale (Alkharusi, H. 2022).

Socio-economic and Demographic Variables					
Variable Name	Unit of Measurement	Supportive Literature			
Health Care Choice	Public/Private	Habtom, G. K., & Ruys, P. (2007).			
	Alternative / Self	Turyamureba et. Al. (2022).			
Severity of Illness	Minor Illness	Muzurura, J. (2018)			
	Medium Illness	Habtom, G. K., & Ruys, P. (2007)			
	Major Illness				
Age	Continuous	Muzurura, J. (2018)			
		Habtom, G. K., & Ruys, P. (2007)			
Gender	Male	Muzurura, J. (2018)			
	Female	Habtom, G. K., & Ruys, P. (2007)			
Resident Area	Rural	Chatterjee, C., Nayak, N. C., Mahakud, J., & Chatterjee, S.			
	Urban	C. (2019).			
Education	No education	Habtom, G. K., & Ruys, P. (2007)			
	Primary	Muzurura, J. (2018)			
	SSC and HSC				
	Higher				
Income	Lower Income	Muzurura, J. (2018)			
	Middle Income	Habtom, G. K., & Ruys, P. (2007)			
	Higher Income	Al Fidah, M. et al (2023)			
Health care related	Variables				
Location		Muzurura, J. (2018), Field, K. S., & Briggs, D. J. (2001).			
Waiting time		Strozzi, F., Garagiola, E., & Trucco, P. (2019).			
Availability of appoi	ntment	Strozzi, F., Garagiola, E., & Trucco, P. (2019).			



Doctor fees		Lavy, V., Germain, J. M., & Mundial, B. (1994)
Diagnostic cost	These items are coded on a 5-	Lavy, V., Germain, J. M., & Mundial, B. (1994)
Medicine cost	point Likert scale.	Lavy, V., Germain, J. M., & Mundial, B. (1994)
Quality of care		Lavy, V., Germain, J. M., & Mundial, B. (1994)
Experienced doctor		Flynn, K. E., Smith, M. A., & Vanness, D. (2006)
Doctor-patient relation		Flynn, K. E., Smith, M. A., & Vanness, D. (2006)
Recommendation/ Reputation		Strozzi, F., Garagiola, E., & Trucco, P. (2019).
Appointment scheduling system		Flynn, K. E., Smith, M. A., & Vanness, D. (2006).
Additional services		Strozzi, F., Garagiola, E., & Trucco, P. (2019).

#### Statistical Analysis:

Karl Pearson initially developed the chi-square test statistic, which may be used to determine if two category variables in a contingency table are related. Singhal, R., and Rana, R. (2015). In this report we use Chi-square test because data is categorical and non-parametric. By using chi square test, we try to find out the association between Health care choice and associating different types of socio-economic and health related variables. In evaluation and research, cross-classified category data are frequently examined. One of the most popular statistical procedures for addressing queries regarding the relationship or distinction across categorical variables is the Karl Pearson family of chi-square tests (Franke & Christie, 2012, Das et. al 2022). The difference between the observed and expected values is examined using the chi-square test. The association between two categorical variables, which may be computed using the provided observed frequency and expected frequency, is shown or, in a sense, checked using the Chi-Square method. The Chi-Square test gives a P-value to help you know the correlation if any two variables. Statistical analysis was done with SPSS 25 version.

The Chi-Square is denoted by  $\chi^2$ . The chi-square formula is:  $\chi^2 = \sum_{i=1}^n (0i - Ei)^2 / Ei$ 

Where, Oi = observed value (actual value) and Ei = expected value.

In this paper our hypothesis is

H<sub>0</sub>: There is no association between HCC and Socio-economic, demographic, health care related variables.

H<sub>1</sub>: There is an association between HCC and Socio-economic, demographic, health care related variables.

**Ethical consideration:** Ethical approval for this study was obtained from the Research Center, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh. Informed consent was obtained from all participants (voluntary participation) prior to data collection. To protect participant confidentiality, all identifying information was removed from the data. Data were stored securely in the Research Center.

## **RESULTS AND DISCUSSION**

Out of the 230 respondents in the sample, around 37.4% stay in urban regions, while the remaining 62.6% do so in rural areas. The age distribution is as follows: the minimum age is 18, the maximum age is 70, and the average age is 26.31. In addition to income, our survey's 25%, 37%, and 38% of respondents, respectively, belong to the



lower, middle- and higher-income groups. About 30% of respondents to this conduct surveys use self-care or alternative forms of informal medical treatment, compared to over 70% who receive formal medical care from public or private hospitals.

#### Likert Scale Composite Score and its descriptive analysis

According to Alkharusi, H. (2022) following interval suggested for interpreting composite average score of Likert Scale data. The table indicates that, of the 12 variables, the average Likert scale score falls within the class interval of 3.43 to 4.23 for 7 of them, indicating that these 7 variables are important for the respondent. The remaining 5 variables, on the other hand, have average scores between 4.24 and 5, indicating that these 5 variables are very important for patients in making decisions about their medical care. Data also shows that the lowest average score is 3.61 for waiting time and highest average score is 4.74 for experienced doctor.

Variables of HCC	Not important	Little important	Average important	Important	Very important	Average Composite Score
Accessibility and Availability						
Location	4%	5%	12%	49%	30%	3.97
Waiting time	6%	10%	19%	47%	18%	3.61
Appointments Availability	2%	12%	26%	47%	14%	3.58
Medical Cost (MC)	1	I	I	I	I	
Doctor fees	3%	7%	18%	41%	31%	3.91
Diagnostic cost	1%	6%	12%	46%	36%	4.10
Medicine cost	1%	5%	9%	37%	48%	4.25
Quality and Reputation (QR)						
Quality of care	0%	3%	12%	37%	48%	4.30
Experienced doctor	0%	0%	2%	19%	78%	4.74
Doctor-patient relationship	1%	1%	7%	35%	57%	4.45
Review & recommendation	1%	7%	20%	56%	16%	3.77
Personal Preference (PP)						
Appointment system	1%	7%	29%	43%	20%	3.74
Additional services	1%	4%	13%	32%	50%	4.28

#### Average Composite Score of Likert 5-points scale

Sources: Authors' Calculation based on primary data

#### Model Description

The table represent the symbolizes Chi-square values together with significant value which measures by the p-value. Chi-square result shows that gender, living area and income of a family is not associate with health care



choice where p value is greeter than 10% that means we do not reject the null hypothesis.

Name of variable	Value	df	Asymptotic Significance (2-sided)	Significant Status
Gender	1.291ª	1	.256	Accepted Null hypothesis
Living Areas	1.866ª	1	.172	Accepted Null hypothesis
Family Income	2.426 <sup>a</sup>	2	.297	Accepted Null hypothesis
Education	9.053 <sup>a</sup>	3	.029	Rejected Null hypothesis
Severity of illness	27.248a	2	.000	Rejected Null hypothesis

#### Summary of Pearson Chi-square value of demographic and socioeconomic variables

Sources: Output is generated in SPSS and compiling by author

The only few factors that produce a significant p-value of less than 5%, indicating that there is an association between health care choice where we rejected null hypothesis. Value of chi-square for Education of responded shows that there is significant evidence of an association between choice of healthcare (HCC) and education of the respondents,  $\chi^2$  (3, N = 230) = 9.053, p = .029. So, p-value can reject the null hypothesis at 5% significant level and accepted alternative hypothesis. Severity of illness is associated with HCC,  $\chi^2$  (2, N = 230) = 27.248, p = .000. at 1% level of significant where we reject the null hypothesis at 1% significant level.

Chi-Square Tests (HCC and Education)						
	Value	df	Asymptotic Significance (2-sided)			
Pearson Chi-Square	9.053ª	3	.029			
Likelihood Ratio	13.275	3	.004			
Linear-by-Linear Association	3.877	1	.049			
N of Valid Cases	230					
Chi-Square Tests (HCC and S	Severity of Value	df	Asymptotic Significance (2-sided)			
Pearson Chi-Square	27 248 <sup>a</sup>	2				
Likelihood Ratio	32.489	2	.000			
Linear-by-Linear Association	27.079	1	.000			
N of Valid Cases	230					
a. 0 cells (0.0%) have expected	count less t	:han 5. '	The minimum expected count is 11.83.			

Sources: Output is generated in SPSS

#### Pearson Chi-Square test value for health-related factors

Table shows that, which variable is associated with HCC and which is not. First variable nearest location is



significant evidence of an association between choice of healthcare and model value represent  $\chi^2$  (4, N = 230) = 8.965, p = 0.062 that can reject the null hypothesis at 10% significant level. There is a significant relationship between choice of healthcare provider and doctor-patient relation,  $\chi^2$  (4, N = 230) = 8.005, p = .090. that represent acceptance of the alternative hypothesis and reject the null hypothesis at 10% significant level. Another significant evidence of an association between choice of healthcare and additional services of health care like hygienic, good manner etc...  $\chi^2$  (4, N = 230) = 10.200, p = .037 that indicates reject the null hypothesis at 5% significant level.

#### Summary of Chi-square tests results of Health-related factors

Name of variable	Value	df	Asymptotic Significance (2- sided)	Significant Status
Location	8.965 <sup>a</sup>	4	.062	Rejecting Null Hypothesis (H <sub>0</sub> )
Doctor-patient relationship	8.055 <sup>a</sup>	4	.090	
Additional services	10.200 <sup>a</sup>	4	.037	
Waiting time for appointments	1.992 <sup>a</sup>	4	.737	
Weekend appointments	3.153 <sup>a</sup>	4	.533	-
Doctor fees	1.541 <sup>a</sup>	4	.819	
Diagnostic cost	.824 <sup>a</sup>	4	.935	Accepted Null Hypothesis (H <sub>0</sub> )
Medicine cost	1.925 <sup>a</sup>	4	.750	
Quality of care	.876 <sup>a</sup>	4	.831	
Experienced doctor	2.843 <sup>a</sup>	4	.584	
Reviews and Recommendations	2.628 <sup>a</sup>	4	.622	
Appointment scheduling system	6.670 <sup>a</sup>	4	.154	

Sources: Output is generated in SPSS and compiling by author

There was no significant relationship between choice of healthcare provider (HCC) with waiting time for appointments,  $\chi^2$  (4, N = 230) = 1.992, p = .737, availability of appointments  $\chi^2$  (4, N = 230) = 3.153, p = .533, doctor's fees,  $\chi^2$  (4, N = 230) = 1.541, p = .819, diagnostic cost,  $\chi^2$  (4, N = 230) = .824, p = .935, medicine cost,  $\chi^2$  (4, N = 230) = 1.925, p = .750, quality of care,  $\chi^2$  (3, N = 230) = .876, p = .831. experienced doctors,  $\chi^2$  (4, N = 230) = 2.843, p = .584, reviews and recommendation,  $\chi^2$  (4, N = 230) = 2.628, p = .622, appointment schedule system,  $\chi^2$  (4, N = 230) = 6.670, p = .154. In this case of insignificancy model accept the null hypothesis.

## **CONCLUSION AND POLICY RECOMMENDATION**

Based on the result of the finding in this survey, the research reveals that education of the respondents, severity of illness, location, doctor-patient relation, additional services of the medical care are statistically significant in the choice of health care (HCC). All of these have a profound policy and theoretical implications.

It seems that the most significant factor influencing a person's choice of healthcare provider is their level of education. By eliminating poverty, it raises people's quality of life and has a positive social impact on both society and individuals (Islam, R. 2014). People always try to choose their medical alternative to their severity



of illness. As much health available is usually our goal when allocating resources for health care, but it also important to whom benefits accrue. As a result, many nations, notably the Netherlands, Norway, and Sweden, employ severity or concepts like to necessity as a criterion for determining priorities (Barra et al. 2020).

Other socio-economic factors like living area, gender, and income are not associate with choosing health care. Considering health care related variable like location, doctor-patient relation, additional services are associated with HCC significantly but cost of care (doctor fees, diagnostic fees, medicine cost) waiting time, experienced doctor, quality of care etc... are insignificantly associated with HCC.

According to this study, the health system should be improved in places where people from different socioeconomic backgrounds may get proper medical care at a reasonable cost. Policymakers ought to draw close attention to the demand side of healthcare, as here is where patients are most responsive to their needs. Given the strong correlation between a doctor-patient relationship, doctors should be careful of their consulting time and gentle attitude toward their patients. In addition to this patient, HCC is very concerned about other services provided by the health care provider, such as hygienic conditions, amenities, and ample space for providing medical care; therefore, the total environment of the health care provider needs to be improved.

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