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Evaluating the Effectiveness of Community Clinics for Improving Health Care Facilities in Rural Areas: A Case Study from Kushtia Districts

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Abstract

Community clinics are seen as essential for primary healthcare in Bangladesh. The goal of this study is to identify and assess the characteristics associated with the rural Bangladeshi population's use of primary healthcare services in community clinics particularly in kushtia districts. The data was provided by residents of Bheramra and mirpur Upazila, a village areas in Bangladesh's Kushtia district. To determine the most significant factors associated with primary care visits to community health clinics, we employed binary logistic regression and a chi-square test. According to the data, the majority of the study's participants (48%), used primary healthcare services supplied by their local community clinic. Many factors influence whether or not a family seeks primary care in a community clinic, including the respondent's age, level of education, marital status, occupation, monthly income, family size, number of members, and breadwinner literacy status. People with lower salaries and less education used community clinic services more frequently than those with higher incomes and more education, according to the study. Finally, community clinics can only be successful with the aid of people from all walks of life and all types of employment who work in rural areas, therefore everyone's active engagement is essential. To provide primary healthcare, community clinics should train their staff to address individual requirements.

1. Introduction

Especially in rural areas, a community clinic a community-based healthcare center—is absolutely essential for primary healthcare in Bangladesh. Every society's or country's healthcare system's most important component is primary healthcare.[1, 2, 3] A basic component of a national health system, its main goal is to provide primary healthcare, thereby promoting general socioeconomic development of the country. The main goal of primary health care is to guarantee that every member of a society has access to necessary health services and commodities for their most urgent health need by means of sustainable, reasonably available resources. Accessible to individuals and their families within the community, primary healthcare emphasizes on maintaining socioeconomic growth through disease prevention and health promotion via community involvement, all at a cost that is reasonable for the country and the society. [6, 7] Thus, the idea of giving underprivileged groups primary healthcare by means of active participation of community members inside the national healthcare system has inspired the construction of community clinics. Apart from guaranteeing fundamental medical treatment for all demographic groups, the constitution states that a main responsibility of the Bangladeshi government is to improve the public health and nutrition of its people.[8, 9] Especially in rural areas, Bangladesh's constitution gives the population's access to quality, responsible healthcare first priority. With over 70% of Bangladesh's population living in rural areas, the rural demographic is the largest one in the nation. Their socioeconomic level is likewise really poor. [10,11] The main issue of rural inhabitants all around is access to healthcare and related services. Particularly in low-income or developing nations, one main reason behind the poorer health of people in rural areas than in their urban counterparts is less access to healthcare.[12,13] Among the public health facilities the government of Bangladesh

makes available to the rural population are the Upazila Health Complex, Union Family Welfare Center, Union Sub-Center, and Community Clinic. Twenty-five fifteen Bangladesh still faces some difficulties even with notable improvement in the general health of its people.[14, 15] The government has taken many actions to address the problems facing the national health system, including building community clinics in rural areas as part of regular basic healthcare. The idea of community clinics was started by the Bangladeshi government to provide rural communities with necessary medical facilities and direct healthcare treatments to the people. From 1996 to 2001, Bangladesh's government sought to establish 18,000 community clinics all throughout the country in order to provide rural people with thorough primary healthcare services. [16,17] Among them, 8,000 started operations and 10,723 were constructed. For every 6,000 people, the government plans to build one community clinic delivering "doorstep" services at the village ward level. The community clinic would be located such that, in thirty minutes' walking time, eighty percent of the village population could reach tithe cabinet of the Government of Bangladesh decided to close community clinics; these stayed closed till 2008. [18] Under the Ministry of Health and Family Welfare, the Government of Bangladesh started the project "Revitalization of Community Health Care Initiatives in Bangladesh" (RCHCIB) in 2009, which aims at establishing 14,000 community clinics.[14] Since then, community clinics, which deliver primary care to millions of individuals daily, have emerged as an essential component of Bangladesh's healthcare framework. [19] The community clinic aims to deliver essential health care services to rural residents, including immunizations, pregnancy and child care, education on nutrition, micronutrient supplementation, sexual and reproductive wellness, birth control, treatment, testing and therapy of minor illness, early detection of transmission-related illnesses, injury and first aid treatment, as well as referrals for more advanced medical facilities. [20,21] Twenty, twenty-one Nowadays, the development of community clinics in rural Bangladesh is regarded as essential elements of national plans and initiatives meant to raise the general state of the country. [22] Most of the population with lesser socioeconomic level cannot afford health treatment since most rural people in Bangladesh are poor.[23] Therefore, the decision to use health care services is influenced by the relative costs of various services, including prescription drugs, consultations, hospitals, and diagnostics. The quality of these services is also a factor.[24,25] This is a One key element affecting health outcomes is the accessibility of healthcare facilities and the use of medical specialists by poor people.[26] Public and private health-care service providers make up Bangladesh's system.[27,28] The government sector (community clinics, Upazila Health Complexes, district hospitals, etc.), traditional medicine (Ayurvedic, Kabiraji, and Homeopathic), NGOs and other nonprofit organizations, local pharmacies, and the private sector (such as private doctors and clinics) are among the several sources the rural population can access for healthcare. [29] The health-care system of the nation mostly determines public or private health-care service usage as well as certain socioeconomic elements, cultural values, and habits.[30] The usage of healthcare providers by rural inhabitants is influenced by a number of factors, which in turn influences the disease burdens and health outcomes of the local populace.[31] People's usage of contemporary healthcare facilities is influenced by a number of factors, including socioeconomic status, geographic closeness, disease patterns, economic and political systems, and environmental issues.[32,33] The aim of this study is to investigate the connections between the utilization of primary healthcare services offered by community clinics in rural Bangladesh and demographic and socioeconomic characteristics.

2. Research Model and Method

Data were collected using a structured questionnaire and direct interview method. Bheramara and Mipur Upazila in Kushtia area was selected for data collection on community clinics due to its remote location. A community-oriented cross-sectional survey was conducted in those areas. The literacy rate in this area is significantly lower than the national average for Bangladesh, and the majority of the population lives in poverty.

2.1 Sample Size and Sampling Procedure

From the seventy villages in Bheramara and Mirpur Upazila, ten were randomly chosen. A sample of 281 individuals was obtained from each hamlet employing simple random sampling methods (without replacement). The sample size determination technique has been utilized to ascertain the necessary sample size, represented by $n = z\ pq\ d^2/2$. In this equation, n denotes the projected sample size, z signifies the standard normal deviation, p indicates the proportion of individuals utilizing the community clinic, q represents the proportion of individuals not utilizing it, and d reflects the required degree of precision. The sample size was calculated to be 281 from Bheramara and Mirpur Upazila, with $p = 0.76$, $q = 0.24$, $z = 1.96$, and $d = 0.05$, as established by the pilot survey. A total of 310 questionnaires were disseminated, resulting in the return of 305 completed questionnaires by the respondents, accounting for non-responses and missing cases. Only one participant from each household was selected to reply. Participants were obligated to furnish written informed permission before the commencement of data collection. Data was gathered via a standardized questionnaire that encompassed questions regarding socioeconomic and demographic status.

2.2 Variables

The structured questionnaire contains the question, “Which health care service provider did you utilize for primary health care last time?” This inquiry is classified as a dependent variable within this research. The responses were categorized into seven distinct groups. This study evaluates various independent or explanatory factors, including age, education, gender, respondent occupation, media access, family income, proximity to the community clinic, family size, and other socioeconomic and demographic variables.

2.3 Data Processing and Analysis

All statistical evaluations and data analyses in this study were conducted using IBM SPSS for Windows version 25.0 (IBM Corp., Armonk, NY, USA). A descriptive statistical analysis was conducted to enhance comprehension of the research population concerning the explanatory variables. The Chi-square ($\chi 2$) test, a bivariate statistical approach, was utilised to analyse the link between the utilisation of community clinics for primary health care and other selected variables. The chi-square test is a crucial instrument for assessing the statistical significance of a factor's association with the dependent variable. Researchers employed a multivariate binary logistic regression analysis to ascertain the impact of various factors on individuals' utilisation of a community clinic's primary care services. To facilitate the comprehension and analysis of the logistic regression results, we employed odds ratios (OR) and confidence intervals.

3. Results and Data analysis

The results shed light on the distribution of primary care physicians in rural Bangladesh specific study areas and offer a thorough examination of the essential routes for accessing this kind of treatment [Figure 1]. A structure for involving a broad range of health care service providers is depicted in Figure 1. For primary care, whether for their most recent illness or for another reason, half of the study participants visited the neighborhood community clinic. Of the rural households surveyed, 13% reported using the Upazila Health Complex as an extra choice for their primary medical needs. According to the poll, respondents' primary health care is provided by local pharmacies (4.29%), homoeopathic doctors (6.45%), private clinics/doctors (23%), Ayurvedic doctors (5%), and other service providers (0.99%). The study group consists of individuals from various backgrounds who receive primary health care services from various providers. Numerous demographic and socioeconomic characteristics for this group are listed in Table 1. Table 2 indicates a correlation between respondents' educational qualifications and their usage of primary health-care service facilities from a variety of providers. To determine the frequency of primary care visits to community health facilities, we employed logistic regression analysis. Table 4 displays the findings, whereas Table 3 provides a detailed breakdown of the explanatory and dependent components.

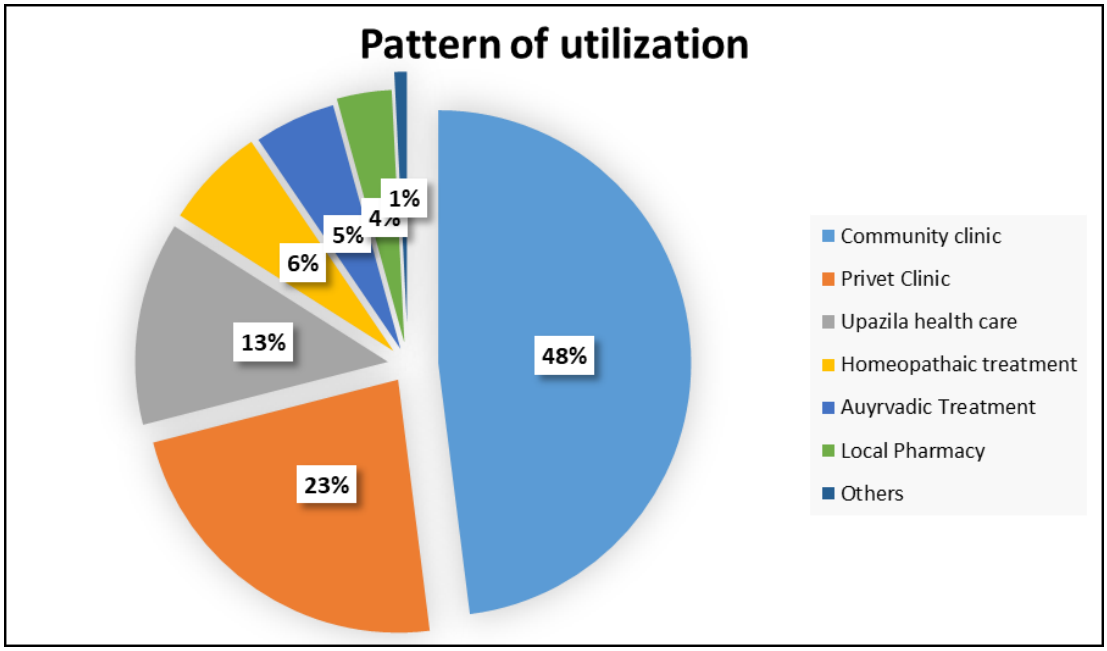

Figure: 1 Pattern of using health care service in study areas

Table:1 Descriptive Statistics

	Health care Service Category		Chi-square value
	Other health care Service	**Community Clinic Service**	
Age of the respondent		6 (24)	
18–24	19 (76)		
25–39	100 (48)	108 (52)	
40 or above	33 (43)	44 (57)	8.25**
Marital status of respondent			
Married	131 (50)	129 (50)	
Unmarried	13 (44) 1	0 (56)	
Others	8 (30)	19 (70)	4.77*
Sex of respondent			
Female	98 (50)	99 (50)	
Male	54 (48)	59 (52)	
Educational qualification of respondent			0.110
Illiterate	66 (46)	78 (54)	
Primary	39 (41)	56 (59)	
Secondary or higher	47 (66)	24 (34)	
Occupation of respondent			
Day labor	22 (34)	42 (66)	11.38***
Job	77 (47)	88 (53)	
Business	53 (65)	28 (35)	
Family income	42 (36)	76 (64)	30.49***
5000 BDT or less			
5001–10,000 BDT	52 (45)	63 (55)	
10,001 or above 58	(75)	19 (25)	
Distance from nearest community clinic			45.42**
Within 2 km 105	(40)	154 (60)	
More than 2 km	47 (92)	4 (8)	

Number of family members			
5 or less	76 (45)	93 (55)	2.54**
More than	5 76 (54)	65 (46)	
Access to media (watch TV/listen radio)			
No	96 (47)	108 (53)	0.95
Yes	56 (53)	50 (47)	
Occupation of the head of family			
Farmer	38 (48)	40 (51)	27.01***
Day laborer	50 (42)	69 (58)	
Business	36 (56)	28 (44)	
Housewife	1 (7)	14 (93)	
Others	27 (79)	7 (21)	
Literacy of the head of family			14.87***
Illiterate	118 (44)	147 (56)	
Literate	34 (76)	11 (24)	
Total	152 (49)	158 (51)	
***Significance Level- p <.01,.05,.10			

Table: 2 Utilization of primary health care service by different educational status of respondent

Educational qualification	Primary Health care facility							Total
	Community Clinic	Upazaila health Complex	Privet Clinic	Ayurveda Physician	Homeopathic Physician	Local Pharmacy	Others	
Illiterate	78	25	2	7	13	17	2	144
Primary	56	15	4	1	5	14	0	95
Secondary	24	27	13	0	2	4	1	71
Total	158	67	19	8	20	35	3	310

Table: 3 Description of the Variables

	Explanatory variables and their categories	
Dependent variables	Variables	Categorise
From which health-care service provider, Respondent utilized primary health care last time? 0=Other than community clinic 1=Community clinic	X1=Age of the respondent	1=18–24 2=25–39 3=40 or above
	X2=Marital status of respondent	1=Unmarried 2=Others 3=Married
	X3=Educational qualification of respondent	1=Illiterate 2=Primary 3=Secondary or higher
	X4=Occupation of respondent	1=Day labour 2=Housewife 3=Others
	X5=Family income	1=5000 BDT or less 2=5001–10,000 BDT 3=10,001 or above
	X6=Distance from nearest community clinic	1=Within 2 km 2=More than 2 km
	X7=Number of family members	1=5 or less 2=More than 5
	X8 =Occupation of the head of family	1=Farmer 2=Day labourer 3=Business 4=Housewife 5=Others
	X9=Literacy of the head of family	1=Illiterate 2=Literate

Table: 4 Logistic regression model Results

Explanatory variables	Coefficient (β)	OR	P-value
Age			
18–25		1	
26–40	0.72	1.2	0.3
41 or above	1.2	2.89	0.17
Marital status			
Married		1	
Unmarried	0.95	2.45	0.17
Others	0.21	1.87	0.6
Educational qualification			
Illiterate	0.04	1.05	0.97
Primary education	0.78	2.8	0.09
Secondary or higher (RC) 1.00		1	
Occupations			
Labor	1.6	2.9	0.03
Job	0.7	1.7	0.17
Others (RC)		1	
Family income			
6000 BDT or less	0.87	2.51	0.01
6001–12,000 BDT	0.88	2.2	0.05
12,001 or above (RC)		1	
Distance from community clinic			
Within 2 km	2.41	16.2	0
More than 2 km (RC)		1	
Number of members			
5 or less	0.59	1.72	0.3
More than 5 (RC)		1	
Head of the Household income			
Farmer	1.27	3.49	0.04
Business	0.89	2.38	0.17
Day labor	1.05	2.45	0.01
Housewife			
Others (RC)	2.21	17.2	0.08
		1	0.03
Head of family Literacy			
Illiterate	0.31	1.49	0.6
Literate (RC)		1	

4. Overall Discussion

Whether it was for an emergency or an illness, survey participants were asked to identify the physicians or medical facilities they had most recently visited for routine care. The survey results indicated that 48% of respondents in the research area utilized primary healthcare facilities from the local community clinic in addition to other public or private healthcare options. The healthcare landscape in the rural areas of Bangladesh's in study areas Kushtia district's Bheramara and Mirpur Upazila has been significantly altered by community clinics. It collectively addresses the issues of nutrition, family planning, and general wellness, thereby enhancing public health in these regions. A substantial transformation in Bangladesh's healthcare system has commenced with the establishment of community clinics in the most remote rural regions. Nineteenth year Community clinics have been instrumental in the development of rural health care by offering services to marginalize and low-income communities. It has triggered a substantial transformation in Bangladesh's healthcare system. Patients frequently express satisfaction with community clinics' services due to their availability at no cost. As a result, the number of patients seeking medical attention at these clinics is consistently increasing. The Government Upazila Health Complex is a critical source of fundamental healthcare services for the rural population, providing free essential healthcare facilities and drugs. Primary care was sought at the Upazila Health Complex by 13% of respondents to this survey. The local pharmacy is typically situated in close proximity to the village market or another gathering place. Small pharmacies in rural regions frequently employ village physicians who specialise in primary care and medicine. Some 4% of survey respondents indicated that they acquired their primary care prescription prescriptions and supplies from a nearby pharmacy. The villages acknowledge homoeopathy as a form of treatment. Only 6% of respondents visited a primary care physician who practiced homoeopathy. When consulting with a private physician or clinic, you may incur substantial medical expenses. The percentage of residents in our research area who utilise private clinics and doctor's offices (23%) may be attributed to the fact that the majority of them have high incomes. Approximately 1% of respondents utilised alternative service providers, while 3% of respondents received primary care from ayurvedic physicians (Kabiraj) (Figure 1). The utilisation of primary healthcare services from community clinics and other health-care service providers is significantly influenced by demographic and socioeconomic factors, as illustrated in Table 1. The principal care provider for older responders was more likely to be the community clinic, as indicated by the study's findings. A disproportionately significant proportion of the patients seen in community clinics are individuals between the ages of 25 and 39. The results of a logistic regression analysis indicate that the probability of utilising primary health care is 1.99 times higher for individuals aged 25–39 and 2.78 times higher for those aged 40 and above compared to the 15–24 age group (Table 4). According to Table 1, respondents' marital status is one of the primary socioeconomic factors that influences their utilisation of primary health care services at community clinics. The results suggested that individuals with lower incomes and education levels utilised community clinic services more frequently than those with higher incomes and education levels. Education is a critical element in the resolution of health care concerns. Table 2 indicates that respondents with only a primary education were more likely to utilise community clinic services than those with no formal education, as well as those with a secondary or higher level of education. The Chi-square test results indicate that the educational attainment of the respondents is statistically correlated with their utilisation of primary health care services from community clinics (Table 1). Individuals who have completed additional years of education are more inclined to priorities their health and seek out healthcare facilities that provide exceptional care. In Table 4, the odds ratio for illiterate respondents to utilise primary health care facilities from community clinics was 1.05 times higher than

that of respondents with secondary or higher education, and it was 2.8 times higher for respondents with elementary education. The individuals in the study area earned a meagre amount of money each month due to their occupations as either day laborers or farmers. The study found a significant correlation between the frequency with which individuals utilized primary healthcare facilities at community clinics and their employment and monthly income. Day labourers are 2.9 times more likely than those in business and service to seek primary healthcare at community clinics, as seen in Figure 4, while housewives are 1.7 times more likely to do so. Respondents with family incomes of 5,000 BDT or less were 2.51 times more likely to utilise primary health care services at the community clinic than those with family incomes of 10,000 BDT or more. Respondents with incomes between 5,001 and 10,000 BDT were 2.22 times more likely to utilise these services. The study found that individuals from low-income households in the region opted for community clinics for primary health care due to the abundance of free services and medications they offer. Rural residents from lower socioeconomic circumstances who require medical care are increasingly turning to community clinics. The distance to the nearest physicians is a critical factor in determining whether or not to utilise healthcare facilities. The villagers are hesitant to seek primary care at the Upazila Health Complex or any other hospital or clinic, as the majority of community clinics are accessible by foot. The results of the study suggest that individuals are more inclined to choose a community clinic for primary care if it is situated in close proximity to their residence. Respondents who lived within 2 km of the nearest community clinic accessed the primary health-care services provided by these clinics 16.04 times more frequently than those who lived more than 3 km away, as determined by logistic regression analysis (Table 4). The number of family members in a rural area is a substantial factor in the decision-making process regarding health treatment. The number of family members and the utilisation of health care services at community clinics are correlated in this investigation. Table 4 illustrates that families with five or fewer members are 1.72 times more likely to seek primary healthcare in community clinics than those with six or more members. The chief of the household's occupation and educational background have a substantial impact on the selection of the primary medical care provider for the family members, as the head of the household is typically responsible for this decision. The study illustrates a robust correlation between the literacy and occupation of the household head and the utilisation of fundamental healthcare services from community clinics. This conclusion is supported by the data obtained from both the logistic regression analysis (Table 4) and the Chi-square test (Table 1).

5. Conclusion

In summary, the primary objective of this paper is to identify and assess the factors that are linked to the utilization of primary healthcare facilities by the rural population of Bangladesh at local community clinics. The study indicates that the decision of individuals in rural Bangladesh to pursue primary healthcare at community clinics is contingent upon a variety of factors. The following are included: the number of family members, the respondent's occupation, and the literacy level of the family chief, the respondent's age, marital status, the respondent's occupation, the monthly family income, and the distance to the nearest clinic. The results suggest that individuals with lower socioeconomic status are more likely to utilize the health care services provided by community clinics than those with higher socioeconomic status. Despite the difficulty of the endeavor, the government was able to provide essential health care to all citizens by opening a community clinic. Despite the increasing prevalence of community clinics, a significant number of them are experiencing a shortage of competent personnel, and some

have facilities that are either outdated or insufficient. It is essential to involve individuals with the requisite skill set in order to guarantee that rural communities receive the necessary healthcare. In rural areas, community clinics must have management teams that consist of individuals from a diverse range of backgrounds and professions, as community engagement is fundamental to the clinic's success. It is essential to initiate public education initiatives in order to increase the utilization and awareness of the health services offered by community clinics in rural Bangladesh.

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