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## PUBLIC HEALTH RESEARCH

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### Evaluation of the role of perceived quality and satisfaction of beneficiaries about the health care services and benefits of community clinics in Bangladesh

Shamim Hayder Talukder,<sup>1\*</sup> Shahin Akter,<sup>1</sup> Dina Farhana,<sup>1</sup> Kazi Fayzus Salahin,<sup>1</sup> Shirin Khanam,<sup>1</sup> Md. Mostafizur Rahman,<sup>1</sup> Md Saddam Hossain,<sup>1</sup> Tasneem Islam,<sup>1</sup> Ummay Farihin Sultana,<sup>1</sup> Tasbirul Islam Prodhan,<sup>1</sup> and Sheikh Mohammed Shariful Islam<sup>2</sup>

<sup>1</sup>Eminence Associates for Social Development, 3/6 Asad Avenue, Mohammadpur, Dhaka-1207, Bangladesh.

<sup>2</sup>Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia.

\*For reprint and all correspondence: Shamim Hayder Talukder, Eminence Associates for Social Development, 3/6 Asad Avenue, Mohammadpur, Dhaka-1207, Bangladesh.

Email: ceo@eminence-bd.org

#### ABSTRACT

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<b>Introduction</b>	Bangladesh provides free healthcare to its citizens through 10,723 community clinics which provide one-stop healthcare services that is vital in ensuring primary healthcare. Measuring beneficiary' contentment is crucial to improve the quality of care and the perceived service quality have a significant impact on how often people use those health services. This study focuses on perceived quality and satisfaction of beneficiaries about the primary health care services and benefits of community clinics in Bangladesh.
<b>Methods</b>	A quantitative descriptive survey was conducted from March 2019 to April 2019 in the catchment area of 80 community clinics located at 16 Upazila under eight districts of eight divisions in Bangladesh. The survey compiled local data on client's experience on health care service of community clinics. Besides, Sixteen Upazilas from eight districts were randomly selected for conducting interviews.
<b>Results</b>	Data was provided by a total of 760 female participants, among them majority (41%) belonged to the age group of 18-24 years old, and this very group showed more satisfaction than others (Odds Ratio 1.44). Besides, childless married women were also found to be content with the community clinic services compared to the remaining types of clients (Odds Ratio 1.64). However, gender, education, and economic perspective were positive aspects of getting service from community clinics.
<b>Conclusions</b>	Although there is a challenge balancing psychosocial and medical care, promoting client-oriented care with a focus on the cultural factors of the area is vital. This can be done through community-focused training together with explaining written prescriptions to the beneficiary, including the signs, symptoms, treatment, and referral points. The study findings will enable responsible authority to improve quality of primary health care services, realizing beneficiary' ideas of community clinic service quality.
<b>Keywords</b>	Community Clinic - Client Satisfaction - Healthcare Service - Primary Health Care - Bangladesh.

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## INTRODUCTION

In Bangladesh, around two-thirds of people live in rural areas, with most of them under low socioeconomic conditions.<sup>1</sup> The Government of the People's Republic of Bangladesh has planned to set up 18,000 community clinics (CCs) to provide primary health services in their catchment bounds over the five years of 1996–2001 in the remotest and most challenging areas. Only 8000 CCs began to operate from 1998 to 2001, whereas 10,723 CCs were built.<sup>2</sup> However, in 2001, all CCs were closed and remained inoperative for the next eight years. In 2009, under the 'Revitalization of Community Health Care Programs in Bangladesh, these CCs began to function and have continued ever since.<sup>3</sup> On average, around 6000 people are being served per CC. Besides, the cost of setting up a CC has been reduced by donating land under Public-Private Partnership (PPP) agreements, enabling the rapid establishment of CCs in Bangladesh. The functions of the CCs included promoting health through the provision of basic education in health, nutrition and family planning, and primary management of medical conditions. The development and sustainability of them received high emphasis in the Health Population Nutrition Sector Development Program (HPNSDP). However, the location of CC was anticipated to be within <30 minutes walking distance for 80% of the population. They also act as a referral link for emergency and complicated cases.<sup>2</sup>

However, the emphasis on care quality in CC has grown in Bangladesh's efforts to enhance its health care delivery system. And when evaluating the effectiveness of health care and health outcomes, patient satisfaction has long been regarded as a crucial factor. Dagger and Sweeney(2006)<sup>4</sup> revealed that services or client satisfaction could dramatically improve the quality of life of the patient and help service providers to recognize issues that the clients can solve. Additionally, study<sup>5</sup> have shown that unhappy clients are more likely to complain to the establishment or ask for help from them to avoid cognitive dissonance and poor health service experiences. In this case, even disappointment can have significant consequences. Patients who are unlikely to follow treatment regimens may fail to turn up for follow-up care. In extreme cases, they might resort to the use of negative word that may dissuade others from obtaining health care services from the current system or encourage them to pursue from private health care facilities or in abroad.

However, cultural standards and principles influence primary healthcare and services.<sup>6</sup> A study

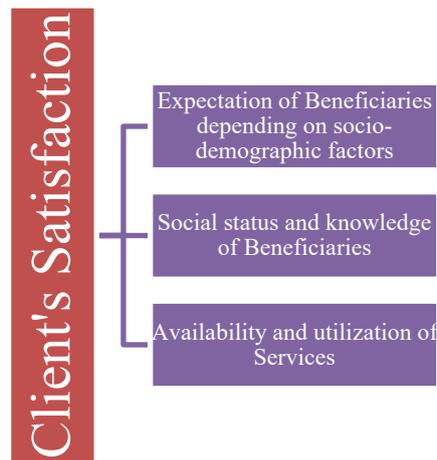
found that Bangladeshi cultural values primarily affect the standard of service and primary care satisfaction.<sup>5</sup> Another study<sup>7</sup> showed that expectations and assessments of quality are highly individualistic and complex in developing countries, in the sense that the parameters or elements used to assess quality change with time and context. In addition to socioeconomic characteristics, perceptions of abilities and competencies, management and managerial attributes of the CCs, satisfaction with the interpersonal skills and behaviors of care professionals, health education, and women's health concerns have had significant impacts on the use of community clinic services. However, limited data have been presented on the quality of services and neighborhood clinic clients' satisfaction together with their policy implications. And these study reports often portray targeted small numbers and are restricted to achieving specific narrow-minded goals that are not appropriate for policy implications. The quality of health care in the community clinic is now an emerging area of research and policy concern for government initiatives. Measuring patient satisfaction with CC services will play a key role in the further improvement of quality care. Evidence on client's satisfaction on the quality of services in CCs is essential, particularly in developing countries like Bangladesh, where many people still have limited access to primary healthcare facilities.

Therefore, we conducted this study to identify client's satisfaction with the quality of CCs services together with evaluating the perception of beneficiaries regarding the services and benefits of CCs. The study further focused on the exploration of underlying gaps that creates barriers in delivering quality services, describing the status of equipment and logistics used in the CCs to provide PHC services, and discussing the gap-suit recommendation for further improvement of quality services delivery in CCs.

## METHODS

### Conceptual Framework

The behavioral model<sup>8</sup> of Andersen and Newman in 1973, revised later in 2005, revealed three sets of factors,<sup>9</sup> such as (1) predisposing factors for instance age, gender, race / ethnic group, and social status, have been identified for the visit to and satisfaction of a health facility, (2) enabling factors to include conditions that promote or facilitate social status, (3) individual determinants of utilization. We have conducted this research based on Andersen and Newman's behavioral model and identified these three sets of factors in it. (Figure 1)



**Figure 1** The behavioral model of Anderson and Newman

The research is driven by a conceptual structure adapted from this model. In order to capture the well-run view of clients' satisfaction on the Community Clinic Services in Bangladesh, the expectation based on different socio-demographic factors, social status and knowledge of beneficiaries, and availability and utilization of services have been measured by interviews. However, the survey questionnaire was developed and checked by the researcher before the survey started. The questionnaire was checked and validated by the Social Science Research Council (SSRC), Ministry of the Planning, Government of Bangladesh. The interview questionnaire (structured) included race, culture, economy, knowledge, attitude, belief ineffectiveness, age, gender roles, health facilities, social status, and social roles among the broad list of factors. These factors are known to influence the choice and satisfaction of the services of the beneficiaries. Therefore, based on these considerations, the perception of the expectation and knowledge of beneficiaries and the experience of health services led to a comprehensive understanding of the client's satisfaction rate regarding Community Clinic Services in the catchment areas. In addition, the model explained underlying gaps that creates barriers in delivering quality services, and health behaviors that influence health outcomes. The framework highlighted that lifestyle habits are the direct cause of health outcomes relative to perceived health status, measured health status, and client satisfaction.

#### Survey Methodology

This quantitative descriptive survey design was followed to collect data between March 2019 and April 2019 in the catchment area of 80 community clinics located at 16 Upazila under eight districts of eight divisions in Bangladesh. The survey was completed in a multistage cluster sampling process:

the first stage cluster involved the eight divisions of Bangladesh; then, the next cluster was assembled with 64 districts; and the final stage of the cluster included the Upazilas under them. Now, the study selected eight districts randomly from each division. For selecting the two Upazilas, a random sampling method from each randomly identified district was applied. The clients were enrolled following the simple random sampling technique. So, the value of allowable margin of error,  $d=0.045$ , was applied, and this margin of error made the estimate more precise. The design effect  $deff=1.5$  was considered here. The maximum sample size ( $n$ ) with given error margins (precision) was found 712, assuming 7% non-respondent, the total sample calculated as 760, including randomly from the community clinics under the survey. Participants with experience of receiving services from the community clinics were selected. The interviews were conducted in five CCs from each Upazila, and the clinics were also selected randomly. From each CC, 10 clients were interviewed after they had completed consultation services from service providers to reach the survey's target. Moreover, 50 observation data were collected from community clinics to randomly assess the facilities' status from all interviewed community clinics.

#### Survey Model

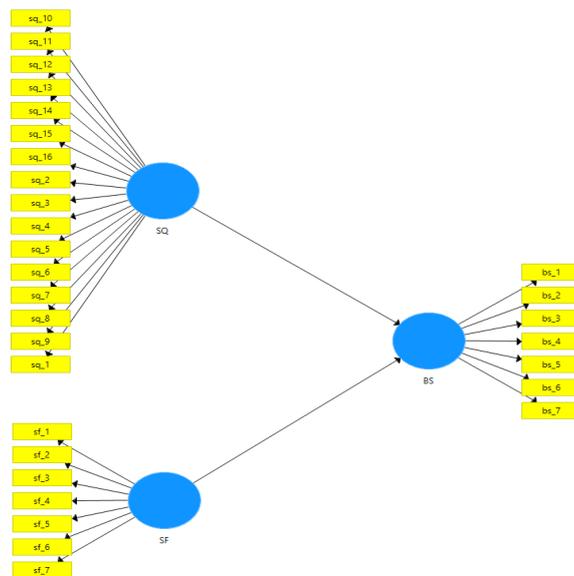
Client satisfaction is based on the client experience, which they usually gain while receiving services.<sup>10</sup> Besides, improved quality of services leads the clients towards satisfactory experiences. Another scholar has claimed in his analytical study "defining client satisfaction relates to a particular relationship between the service predicted and the service received. Client satisfaction can be reached up to the service predicted based on service quality and service feature, which are more enduring and less situationally oriented based on client's attitudes."<sup>11</sup>

Though satisfaction and quality of service are commonly interrelated, satisfaction may also depend on the different dimensions of service and

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socio-demographic, clients' cultural status, and the cost of the services.<sup>12</sup> This model is consistent with Wilson et al. (2008)<sup>13</sup> and others. Our survey model

has been developed based on these models, and the variables of our model are projects on the following table. (Figure 2)



**Figure 2** Benefisharies satisfaction

### Variables

The following table will summarize the variables for the path analysis. (Table 1)

**Table 1** Variables for Research Model

Questions	Indicators
Is it a complex process for registration?	Service Quality (SQ)
Do you need to wait for a long time after registration to get services?	
Were you informed about the waiting time to meet the service provider?	
Is there any line or serial for getting service from a service provider?	
Do you have easy access to enter the service provider's room?	
Did the service provider listen to you attentively?	
Did the service provider answer your query willingly?	
Did the service provider discuss the background of your diseases?	
Did the service provider examine you with the required time?	
Did the service provider explain your diseases properly, and did you understand?	
Did the service provider explain about investigation properly?	
Did the service provider explain about prevention and cure of diseases?	
Did the service provider explain the drug's dosage time and procedure properly?	
Did the service provider explain the side effect of drugs?	
Did you feel secure when taking treatment from the community clinic?	Service Feature (SF)
Did the service provider follow up on your diseases?	
No instrument	
Stethoscope	
BP machine	
Weight machine	
Thermometer	
Height machine	Clients Satisfaction (CS)
Blood glucose measurement machine	
What is your opinion about the environment of the community clinic?	
What is your opinion about the hygiene & cleaning of community clinics?	
What is your opinion about the toilet service of the community clinic?	
What is your opinion about maintaining privacy for patient information in a community clinic?	
What is your opinion about easy access to have information from the community clinic?	

What is your opinion about the quality of services in a community clinic?

What is your opinion about women and child-friendly services in community clinics?

**Data Analysis**

Due to the results' non-normal nature, the survey tested the model using partial least square structural equation modeling (SEM-PLS, 3.1). SEM-PLS multivariate analysis then tested the latent path models.<sup>14</sup> Model estimation was performed with  $r^2$  and  $Q^2$ , as well as effect size was  $f^2$  which identified exogenous construction's path effect on endogenous construction.<sup>14</sup>

The demographic characteristics of the participants are presented in Table 2. 41% of the clients were aged between 18-24 years. Only 2% of the clients were aged under 18 years. 38% were pregnant women, 30% were mothers of children aged 0 to 2 years, and 29% were mothers of children older than 2 years. 7% of the clients were illiterate, 27% were educated up to grade 5, about 51% up to grade 10, 11% completed higher secondary school, and 4% were graduates. Most of the clients (96%) were housewives.

**RESULTS**

*Demographic Characteristics of the Clients*

**Table 2** Demographic Characteristics of the Clients

Characteristic	Type	%	n
Client Age Group	Up to 17	2	15
	18 - 24	41	310
	25 - 29	22	167
	30 - 49	31	235
	50+	4	33
Client Types	Pregnant woman	38	292
	Mother of 0-2 years' child	30	228
	Mother of > 2 years' child	29	224
	Married (no child) women	2	16
Client Education	Illiterate	7	54
	Up to grade 5	27	208
	Up to grade 10	51	384
	SSC and HSC (higher secondary school)	11	82
	Graduate & above	4	29
Client Occupation	Others (Polytechnic, vocational, etc.)		3
	Housewife	96	728
	Service	2	14
	Others (Agriculture, Business, etc.,)	2	18

**Multivariate Normality, Reliability and Validity**

The SEM-PLS test results show that the data set is not as usual as the p-value of Mardia's multivariate coefficient of less than 0.05. All values (in Table 3) for Cronbach's alpha, composite reliability, and rho-A are all above the threshold of 0.70.<sup>14</sup> These

findings suggest that the designs are accurate and well-executed. AVE for each build is above 0.50, shows the converging validity.<sup>14</sup> Finally, all VIF values are less than 3, suggesting the lack of multicollinearity issues among the survey designs.

**Table 3** Reliability Analysis

Variables	Number of Items	Cronbach's Alpha	Composite Reliability	Rho-A	Average Variance Extracted	Variance Inflation Factor
Service Quality	16	0.939	0.948	0.947	0.529	1.022
Service Feature	7	0.822	0.871	0.752	0.516	1.022
Beneficiaries Satisfaction	7	0.721	0.860	0.797	0.686	-

Item loading and cross-loading have been recorded to validate the constructive discriminatory

validity (see Table 4). In addition, the value of the Fronell-Larcker criterion for each contract is less

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than 0,70 to determine the discriminatory validity of each construction.<sup>14</sup> The HTMT ratio is significantly less than 0.90 to prove unequal validity for survey

designs.<sup>15</sup> Table 4 indicates that the survey has evidence of discriminatory validity.

**Table 4** Outer Loading and Cross Loadings

	Client Satisfaction	Service Feature	Service Quality
bs_1	0.782		
bs_2	0.712		
bs_3	0.833		
bs_4	0.724		
bs_5	0.794		
bs_6	0.753		
bs_7	0.821		
sf_1		0.808	
sf_2		0.761	
sf_3		0.755	
sf_4		0.754	
sf_5		0.847	
sf_6		0.813	
sf_7		0.744	
sq_10			0.767
sq_11			0.782
sq_12			0.749
sq_13			0.715
sq_14			0.791
sq_15			0.765
sq_16			0.785
sq_2			0.730
sq_3			0.740
sq_4			0.731
sq_5			0.779
sq_6			0.750
sq_7			0.802
sq_8			0.811
sq_9			0.769
sq_1			0.794
Fronell-Larcker Criterion			
Clients Satisfaction	0.431	-	-
Service Feature	0.513	0.562	-
Service Quality	0.441	0.546	0.627
Heterotrait-Monotrait Ratios			
Clients Satisfaction	-	-	-
Service Feature	0.464	-	-
Service Quality	0.773	0.112	-

### Path Analysis

The  $r^2$  value for the two input variables (i.e., Service Quality and Service Feature) on the CS explains that Service Quality and Service Feature an average 40% percent change in CS. The predictive relevance ( $Q^2$ ) value for the model's part is the average 0.469 indicating a medium predictive relevance.<sup>16</sup>

According to Cohen (1988),<sup>10</sup> an  $f^2$  value of 0.02, 0.15, and 0.35 for significant exogenous indicates weak, moderate, and strong effects, respectively. In our survey, the effect size ( $f^2$ ) of the SF shows a significant strong impact on the CS, and the effect size ( $f^2$ ) of the SQ shows a significant moderate effect on the CS.

**Table 5** Hypothesis testing

Hypothesis	Coefficient	t-values	Sig.	Decision	$Q^2$	$r^2$	$f^2$
1 SF → CS	-0.458	14.794	<0.001	Accept	0.469	0.400	0.343
2 SQ → CS	0.375	14.177	<0.001	Accept			0.229

Survey standardized path values, t-values, and significance levels are shown in Table 5. The path coefficient between SQ and CS ( $\beta = 0.375, p = <0.001$ ) suggests an important and positive influence of SQ on CS. The path value for SF on CS ( $\beta = -0.458, p = <0.001$ ) indicates that the effect of SF on BS is negative and statistically important. The

survey showed that the overall level of satisfaction with health care is very positive, but the standard of service satisfaction can also be enhanced. On the other side, the service feature indicates a negative indicator, i.e. there would be a need to enhance the service feature. If the service function increases, the satisfaction of the recipients may increase.

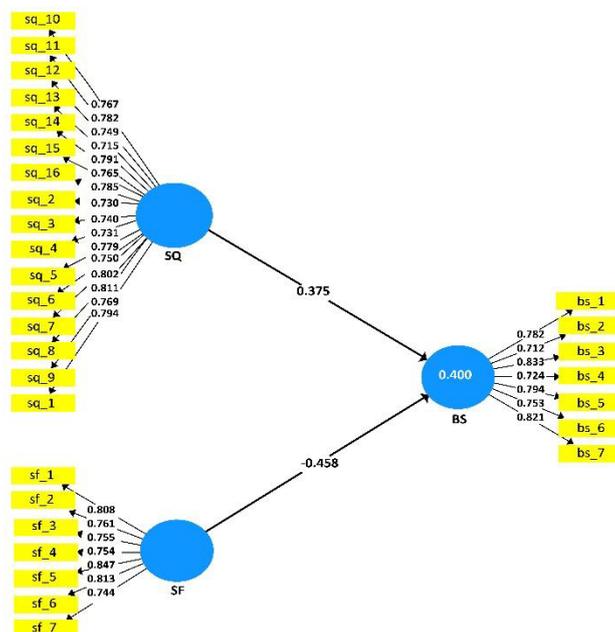


Figure 3 Research model

Table 6 showed the odds ratio with 95% confidence intervals (Cis) of CC’s satisfaction level. After adjusting potential confounding factors, satisfaction about CC is more of the “Married (No Child) Women” compare with the reference category. However, “Mother of >2 Years Child”

showed less satisfaction associated with the reference category. Additionally, the education of the client has an impact on CC satisfaction. Service showed more satisfaction compared with the reference category. All age categories show satisfaction compared with the reference category.

Table 6 Factors associated with the high satisfaction of CC among the clients in Bangladesh during the survey period.

Characteristic	Type	Odds Ratio	[95% Conf. Interval]	p-value	
Client Age Group	Up to 17	Ref	Ref	Ref	
	18 – 24	0.95	0.02	1.41	0.678
	25 – 29	0.97	0.24	1.44	0.636
	30 – 49	0.93	0.28	1.49	0.620
	50+	1.37	0.08	1.53	0.916
Client Types	Pregnant woman	Ref	Ref	Ref	
	Mother of 0-2 years’ child	0.68	0.46	1.30	0.607
	Mother of > 2 years’ child	0.70	0.53	1.53	0.314
	Married (no child) women	0.38	0.04	0.47	0.848
Client Education	Illiterate	Ref	Ref	Ref	
	Up to grade 5	1.76	0.42	2.11	0.019
	Up to grade 10	1.79	0.45	2.74	0.015
	SSC & HSC (higher secondary school)	1.99	1.77	3.36	0.004
	Graduate & above	1.78	0.78	2.24	0.095
	Others	1.94	0.09	72.77	0.986

Client Occupation	Housewife Service Others	Ref 1.00 0.53	Ref 0.21 0.43	Ref 1.22 1.49	Ref 0.924 0.343
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**DISCUSSION**

Patient satisfaction is a complex and multidimensional concept.<sup>12</sup> The study measured the level of satisfaction among the service users from the CCs in terms of “service feature” and “service quality.” In our study, we find that the “service feature” is negatively related to “client satisfaction”.

The study results show that client satisfaction has not reached the mark due to a lack of quality and service features, complemented by the cultural context and client’s expectations. A similar concern is also portrayed in the article, named Client satisfaction and quality of health care in rural Bangladesh, reflects that the cultural context influences client satisfaction.<sup>17</sup> The article highlighted a fact that fits the psychological ground of the study clients as well: while an ideal treatment should meet all the medical and psychological needs of the patient, there lies treatment that only justifiable in terms of a medical condition, ignoring the emotional and social needs. Besides, a treatment that complies with a patient’s psychological requirements may fail to protect from medical risks.

The majority of the clients have not completed the secondary level of education. This lack of formal education bordered the awareness and accessibility of the health services that might affect the satisfactory level. Similar viewpoint is being seeing in another study that poverty, women’s education, occupation, and husband education, land ownership significantly alters the probability of service utilization status.<sup>7</sup>

The overall services of CCs rely not only on the worker’s expertise and teamwork but also on the daily supply of drugs and equipment, training, supervision, and higher authorities’ funding. The demographic and health survey (Bangladesh Demographic and Health Survey-2011)<sup>18</sup> indicates that the perceived quality of services and providers’ actions are considered an inefficient use of services. The survey adds that the awareness of the Critical Service Package among health workers is also flawed; most of them have not been trained in ESP. The acknowledgment of general people of the presence of Community Group is not adequate. Only 10% of household clients knew about a CG involved in their societies, 85% did not know anything about their operations, and 10% claimed that they did know nothing.

The study result also claims that the overall client satisfaction is 40%, where service quality contributed 37%, but the service feature percentage has a declining appearance. A similar trend of the quality and feature of the service is being seen in another survey conducted by Sarkar et al,<sup>19</sup> where the overall satisfaction score is 4.17 out of 5.00. In

terms of service features, the most underlined areas involve concerned diagnostic facilities, the clarification of the prescribed drug (4.23), the surrounding atmosphere of the healthcare facility (4.21), and the actions of health workers towards clients (4.18). Besides, the service quality that contributes to the satisfaction level includes flexible opening hours, relevant queries to providers, facility cleanliness, and privacy settings. The cleanliness and privacy settings of the facility are the best predictors of patient satisfaction. Patient satisfaction is a dynamic and multi-dimensional concept.<sup>20</sup> Recently, a household study measured the satisfaction among CC service users and rated the highest satisfaction with transportation to clinics, showing no cost to obtain health services from the center. No clients employed a vehicle that would have incurred costs. The patients entered the center either on foot or by bicycle. Zero costs to get facilities might play a vital role in a higher level of satisfaction.<sup>20</sup> Similar results were found in a study that reflected the travel time to the CC was 12.4 min, and 88% of patients entered the center on foot (Sohail,2005). Another research showed that 39% of patients choose health centers because of the proximity to their homes.<sup>21</sup>

**Limitation**

Although the study proceeded to maintain the appropriate methodology, it has some limitations. Males and children and hard-to-reach areas were not included which could provide more representative information. The client’s category of the study includes women only, interviewing them through the single-exist pattern. And the reason behind including women is that most of the CC services are focused on women and their reproductive health.

**CONCLUSION**

Despite identifying the underlying gaps in quality healthcare service, the study shows that the overall satisfaction level with health care is positive. Yet, there is scope to improve community clinic services in Bangladesh. Although there is a challenge balancing psychosocial and medical care, promoting client-oriented care with a focus on the cultural factors of the area is vital. This can be done through community-focused training together with explaining written prescriptions to the beneficiary, including the signs, symptoms, treatment, and referral points. Hence, the quality of the consultation needs to be improved by ensuring the use of logistics, taking proper medical histories and prescription writing-technique-based training for service providers. Finally, the study findings will enable responsible authority to improve quality of

primary health care services, realizing beneficiary' ideas of community clinic service quality.

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#### Author's Contribution

Every author mentioned above has been contributed and equally involved in the study design, data collection, and review, and study writing.

#### Declaration of Conflicting Interests

The authors have clarified that there are no possible conflicts of interest in the survey, authorship, and/or publication of this research paper.

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