Original article

Accessibility of the senior citizens to community clinic services in the selected rural communities of Bangladesh

Md. Rofiqur Rahman[1], Mir Riyanul Islam[2] and Anjuman Ara Begum[3]*

ABSTRACT

Objective: To assess the accessibility status of the senior citizens to Community clinic services, a cross sectional (mixed model) study was conducted among 388 respondents, in six *Upazilla* of five districts.

Methods: Sampling was done purposively from rural areas among the senior citizens fulfilling the enrollment criteria. Data was collected by face to face interview by semi structured questionnaire for quantitative part and for qualitative part 11 In Depth Interview and 04 Focus Group Discussion and 01 Key Informants Interview ware carried out.

Results: Average age of the respondents was 66.96 years with minimum 60 years and maximum of 90 years. 59% respondents were male and 41 % were female. Average self incomes of the respondents were 815.72Tkwhere as 257 (62.2%) respondents did not have any income. Community clinic was on average 8.21 minutes walking distance from the house hold. Most of the respondents (71.9%) had history of frequent visit. Maximum respondents were happy about availability of medicine (56.2%), waiting time (78.6%). Most of the respondents (57%) considered the CC service very good or good. Expected service from CC measured to be very good in Likert scale (mean score 30.86). A significant association was drawn between age and treatment decision which shows majority of respondents (78.5%) in age group less than 70 years and individual having self income was more empowered to take decision as expected. Summarized information from FGD, IDI shows positive approach of respondents regarding CC including general idea, expectation, services, effectiveness, expertise of HCPs.

Conclusion: Availability of medicine, close distance from residence and absence of social conflicts played a major role in making the services of CC accessible to the senior citizens.

Key words: Senior citizen, Health, Community Clinic

[1] *National Institute of Preventive and Social Medicine (NIPSOM), Faculty of Preventive of social Medicine of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka Bangladesh*
[2] *Department of CSE, American International University Bangladesh (AIUB)*
[3] *Department of Statistics, Rajshahi University, Rajshahi, Bangladesh (*Corresponding author: aab_stat@yahoo.com)*

INTRODUCTION

The Government of Bangladesh is constitutionally committed to "the supply of basic medical requirements to all levels of the people in the society" and the "improvement of nutrition status of the people and public health status" (Bangladesh Constitution, Article 18). The health service functions were initially restricted to curative services. With the development of modern science and technology, health services emphasize promotive and preventive rather than curative health care. Yet, a large number of people of Bangladesh, particularly in rural areas, remain with no or little access to health care facilities. It would be critical for making progress in Bangladesh's health services to improve the people's participation in the health sector. The Government therefore seeks to create conditions whereby the people of Bangladesh have the opportunity to reach and maintain the highest attainable level of health. Bangladesh has a good infrastructure for delivering primary health care, but the full potential of this infrastructure has due to lack of adequate logistics never been utilized (Islam & Woliullah 2009).

Since 2009 the government undertook a massive effort to establish Community Clinics (CC) at the village level (One CC for every 6,000 population) with a view to bring services to the doorsteps of the people at large. At the same time, since the second half of the 1990s, issues such as pro-poor focus, community participation and empowerment, accountability, public private partnership for service delivery and demand-side financing gained momentum. Consequently, the structure and the service delivery model of the publicly-funded health system underwent profound changes (Anwar & Tuhin 2014).

A changing demographic structure is occurring worldwide with a gradual shift towards a higher proportion of older people. With a few exceptions, more people—in both high- and low-income regions—are living longer than ever before. The net increase of older population worldwide is about one million every month—two-thirds of them in the low-income countries (Gorman & Heslop 2002)

Bangladesh, with one of the highest population densities ($985/km^2$) (United Nations 2007) in the world, is projected to experience a dramatic growth in the absolute number of its population aged 60 years or older from the current level of approximately 7 million to 14 million by 2020 (WHO 2005). While a longer life may offer greater fulfillment in some

ways, it also presents multifaceted health problems not commonly associated with low-income countries and thus creates unique challenges for the national health care service. Bangladesh faces a particularly complex situation. On the one hand, the health care needs of older people put increasing pressure on an existing system that is insufficient to meet the needs of all its citizens. On the other hand, the government primary health care services remain underutilized, or poorly utilized and older people often seek health care services too late, when "extremely ill", to obtain adequate treatment. Considering the health care seeking behavior of older people and existing health facilities of Bangladesh, community clinic playing a vital role in bringing health facilities to the door steps and specially to the extreme group of aged people (Biswas *et al*, 2006)

METHODS AND MATERIALS

This study was conducted to assess the accessibility of the senior citizens to Community Clinic services as per following methodology.

Study design

The study was cross sectional type with both qualitative and quantitative approach.

Study Population

Study population was Senior Citizens at the age of 60 years or more in selected communities

Study Period

This study was conducted in 12 months (from July 2016 to June 2017).

Sampling Method

 The proposed research work was a cross sectional study. The research participants were the senior citizens. They were selected following the defined selection criteria from Saturia *Upazila* of Manikganj district, Tanor and Paba *upazila* of Rajshahi, Gouripur *upazila* of Mymensingh, Keraniganj *Upazila* of Dhaka and Fultola *Upazila* of Khulna district. Participants were traced from the list of Households and knocked purposively with a view of selecting one Senior citizen per House hold.

Selection criteria

Inclusion criteria

- Senior citizens of the age of 60 years or more of the selected communities irrespective of gender, education, religion and custom.
- Voluntary participation in the study.

Exclusion criteria

- Mentally disabled persons
- Seriously ill patients

Sample size

The plan of the study is to determine accessibility status of the senior citizens to community clinic services in selected communities of 6 *Upazilas* of 5 districts. Statistically the following formula used to calculate the sample size .

$$n = \frac{z^2 p(1-p)}{d^2}$$

Here, n = Desired sample size ,z= Level of confidence or level of significance , p = proportion of population possessing the characteristics of interest

The " P " is the proportion of senior citizens in the selected communities p = 0.5 in the formula yields the maximum value of " n" and the sample was yielded at least the designed accuracy. A 95% confidence interval (z= 1.96) with 0.05 standard error (d =0.05) is to be desired in this study. Hence the sample size is as follows-

$$n = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2}$$

$$= 384.16$$

There was an inflation of sample size and /or confounding factor at any stage of data collection or analysis. To overcome this problem and to enrich the outcome, it is decided to include 388 senior citizens for this study.

Research Instruments

Data was collected by semi structured interviewer questionnaire for face to face interview for quantitative part and for qualitative part In Depth Interview (11nos) , Focus Group Discussion (04 nos) and Key Informant Interview (01 no) open ended questionnaire were used.

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Data collection procedure

A written permission and request letter was provided by Director NIPSOM mentioning the title and purpose of the study. Perspective of the study was explained to the respondents and informed consent was taken from each respondent. Data was collected by face to face interview, In depth interview, Focus group discussion and Key informants interview.

Data processing and analysis

All collected data were checked and verified thoroughly to reduce the inconsistency. The data were coded, categorized, cleaned and entered into computer. Quality of data was always maintained. Collected data were then transferred to master table as per the specific objectives and key variables.

Analysis of data were done by "Statistical package for Social Science (SPSS) 17 program in the computer . Descriptive statistics like frequency distribution, mean, median mode, range, standard deviation etc were calculated by SPSS program. For inferential statistics nonparametric test Chi-square test was done to find out association between different variables, to find out correlation between different variables Pearson's co-efficient co relation test was done. An analysis plan was developed keeping in view with the objective of the study. Data were presented in the form of tables, graphs and charts etc. as per requirement.

Types and tools / tests of statistics for Data analysis

Variables	Type of statistics	Statistical tools/test
Qualitative variable: sex, occupation, education, religion, marital status, residence etc	Descriptive statistics	Frequency distribution by table and graph
Quantitative variables: age, monthly income, family income, distance, waiting time	Descriptive statistics	Mean, standard deviation and frequency distribution by table and graph
Relationship among variables	Inferential statistics	Chi-square, Co relation co-efficient

Ethical Implication

The research protocol will be submitted for approval to ethical review committee of NIPSOM for ethical clearance. Before collection of data, written permission will be taken from appropriate authority of the organization. Before interview, informed consent will be obtained from every respondent by informing the purpose and procedure, expected duration, nature, and anticipated physical and psychological risks & benefits of participation. Confidentiality of data and privacy of the respondents will be maintained strictly.

RESULTS

Table 1: Frequency distribution by socio demographic variables (n=388)

Socio demographic Variables	Total No	%	Mean	SD
Group of age (years)				
60-70	293	75.5		
70-80	67	17.3	66.94 years	7.506
80-90	28	7.2		
Distance of residence from CC				
5 min				
10 min	205	52.8		
15 min	127	32.7	8.21 min	3.947
20 min	46	11.9		
	10	2.6		
Waiting time				
10 min	18	4.6		
15 min	48	11.9		
20 min	56	14.4		
25 min	70	18.0	26.64 min	8.234
30 min	111	28.6		
35 min	48	12.4		
40 min	34	8.8		
45 min	05	1.5		
Self income (Rupees)				
00	257	62.2	815.72	
2000	61	15.7	(rupees)	
3000	9	2.3		
4000	10	2.6		
Social barrier faced by respondents				
No barrier	317	81.7		
Political conflicts	12	3.1		
Grouping	12	3.1		
Dislike committee	47	12.1		

Sex				
Male	227	58.5		
Female	161	41.5		
Financial dependency				
Not dependent	73	18.8		
To son	228	58.8		
To daughter	59	15.2		
To others	28	7.2		
Treatment decision				
Self	278	71.6		
Son	41	10.6		
Daughter	22	5.7		
Spouse	30	7.7		
Others	17	4.4		
Physical ability to attend clinic				
Able				
Unable	326	84.0		
	62	16		
Frequency of visit to CC				
Once a month				
Once in 3 month	279	71.9		
Once in 6 month	89	22.9		
First time ever	7	1.8		
	13	3.4		
Standard of service provided by HCP				
Very good	35	14.2		
Good	166	42.8		
Satisfactory	157	40.5		
Unsatisfactory	10	2.6		

Table 1 shows mean age 66.44 with SD 7.506, mean distance of CC from residence is 8.21 mile, mean waiting time 26.64 min with SD 8.234, mean income 815.72 Taka. Female respondents are 41.5% with male 58.5%.

Information regarding expectation from CC is shown in the table 2. In all nine questions respondents agreed or mostly agreed with the question. A considerable numbers of respondents were neutral in answering such Likert type question. The numbers of respondents who disagreed with statements were small.

Table 2: Information regarding expectation from CC (n=388)

Variable	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Clear information given by HCP about disease	32	216	88	39	13
Patient seen on time	30	221	67	51	19
HCPs are helpful	62	213	38	56	18
HCPs are respectful and treat with dignity	62	241	40	23	22
HCPs understand disease well	15	198	93	54	28
Treatment given/procedure performed	22	211	98	34	23
Physical examination done	21	87	92	163	25
Test/ Investigation done	30	78	102	142	36
Referral done	35	197	90	42	24

Table 3: Category based on Likert responses

Score	Category
9-15	Average
16-25	Good
26-35	Very good
36-45	Excellent

Category based on Likert responses are given in the table. Lowest possible score was 9 while highest possible score was 45 and the mean score obtained=30.22 (±3.04). This value is within 26-35 score range which indicates that the quality of services provided at CC was scored as very good by the respondents.

Table 4: Inferential statistics (n=388)

Distribution of decision taking by age group				
Age group (years)	Treatment Decision		χ^2	*p*-value
	Self n(%)	Other n(%)		
60-70	230 (78.5)	63 (21.5)	27.633	0.001
> 70	48 (50.5)	47 (49.5)		

Association between physical ability to attend clinic and physical dependence of the respondents				
Physical ability to attend clinic	**Physical dependence**		χ^2	*p*-value
	Yes n(%)	**No n(%)**		
Yes	10 (3.1)	316 (96.9)	323.86	0.001
No	62 (100.0)	0 (0.0)		

Association between waiting time and obstacle to utilize service from CC				
Waiting time	**Obstacle to utilize service from CC**		χ^2	*p*-value
	Yes n(%)	**No n(%)**		
< 30 min	102 (33.9)	199 (66.1)	12.287	0.001
>30 min	51 (58.6)	36 (41.4)		

Cross tabulation between social barrier faced by respondent and decision taking				
Social barrier faced by respondent	**Treatment Decision**		χ^2	*p*-value
	Self n(%)	**Other n(%)**		
No	243 (76.7)	74 (23.3)	21.377	0.001
Yes	35 (49.3)	36 (50.7)		

Association between Quality of service and visit frequency of respondents to CC					
Quality of service from CC	**Visit frequency of respondents to Community Clinic**				
	At least once a month n(%)	**At least once in 3 months n(%)**	**At least once in 6 months n(%)**	**First time ever**	χ^2(p)
Good category	165 (42.5)	50 (12.9)	4 (1.0)	8 (2.1)	1.151 (0.979)
unsatisfactory	11 (2.8)	4(1.0)	0 (0.0)	0 (0.0)	
Medium category	103 (26.5)	35 (9.0)	3 (0.8)	5 (1.3)	

Distribution of decision taking by gender of the respondents				
Gender	**Treatment Decision**		χ^2	*p*-value
	Self n(%)	**Other n(%)**		
Male	199 (87.6)	28 (12.3)	69.07	0.01
Female	79 (49.1)	82 (50.9)		
Cross tabulation between social barrier faced by respondent and decision taking				
Social barrier faced by respondent	**Treatment Decision**		χ^2	*p*-value
	Self n(%)	**Other n(%)**		
No	243 (76.7)	74 (23.3)	21.377	0.001
Yes	35 (49.3)	36 (50.7)		
Cross tabulation between obstacle to utilize service from CC and financial dependency of respondent				
Obstacle to utilize service from CC	**Financial dependency of respondent**		χ^2	*p*-value
	No n(%)	**Yes n(%)**		
No	58 (24.7)	177 (75.3)	12.146	0.001
Yes	16 (10.5)	137 (89.5)		
Association between Sex and Social barrier faced by respondents				
Sex of the respondents	**Social barrier**		χ^2	*p*-value
	Yes n(%)	**No n(%)**		
Male	23 (5.9)	204 (52.6)	24.405	<0.001
Female	48 (12.4)	113 (29.1)		

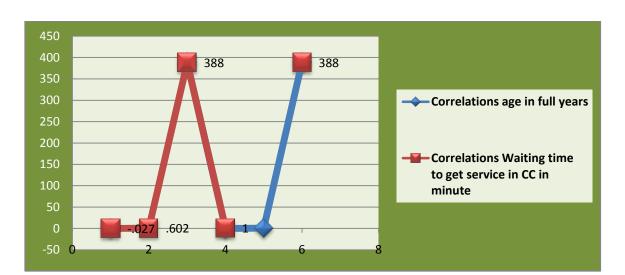All the associations shown in table 4 found significant

Figure 13: Pearson's correlation between Age in full years and waiting time to get service in CC in minute

Correlation between Age in full years and waiting time to get service in CC in minute was analyzed using Pearson's correlation method and presented in figure 13. The co-efficient r was 0.602 and p was 0.027($<$.05), that means correlation was positive.

DISCUSSION

Quantitative part

In the current study 388 respondents were enrolled of them 227 (58.5%) were male and the rest 161 (41.5%) were female. The mean age was 66.94 ($\pm$7.506) years. The age ranges from 60 to 90 years.

Ylva Kalin (2011) in their study on "Access to and Utilization of health service in Rural Bangladesh" , sex distribution was male 45.6 % and female 54.4% , Most of the respondents 257 (62.2%)   in this study were having no income and mean personal income was 815.72 Tk.. Sukumar *et al* (2002) have shown 68.1% did not have any personal income in their study and respondents mean personal income was 520.91 Tk. Whereas Karim *et al* (2016) in their study has shown that family income was $<$5000 -20%, 5000-10000 -38% and $>$ 10000 -48%. Seventy three respondents (18.8%) of this study were not dependent to anyone for financial reasons. Most of the dependent respondents were dependent on their son (58.8%). Mirza *et al*

(2013) in their study have shown that 85% men on their son, 15% on daughter and 75 % women on son and 15% on daughter dependent.

In this study most of the cases (71.6%) treatment decision was taken by the respondent himself or herself. Berhane (2016) in his study on patient expectation in the context of Public hospitals has shown around 20% respondents preferred to take an active role in treatment related decision, 1.4% and 18.7% of participants preferred make decision after considering health care provider's opinion.. Most of the respondents (236, 84%) were physically able to attend community clinic.

Most of the respondents 227 (58.5%) in this study commented that they are getting quality of service from CC where as Flora et al (2013) have shown majority perceived as good (71.2%) and very good (8%) quality of care from CC.

Most of respondents 166 (42.8%) and 157 (40.5%) declared the standards of services they usually get from a CC as good or satisfactory only55 (14.2%) declared it as very good and 10(2.6%) respondents said that the service was unsatisfactory. In the study of Flora *et al* (2013) majority perceived as good (71.2%) and very good (8%) service. A considerable numbers of respondents (234, 60.3%) pointed out that they faced no difficulty in receiving the services at the CC. Whereas Flora *et al* (2013) pointed out that poor service (13.0%), CC remain closed (6.2%) and non availability of service (23.7%) were the main drawbacks of CC.

Majority of the respondents (56.2%) of this study said that   medicines were available and adequate at CC. Only 6.7% opined in reverse way and 171 (44.1%) stated that other treatment tools were always available at CC. In study of Sarkar *et al* (2002) only 20% said medicine not available always, but Flora et al (2013) in their study have shown that 47 % received medicine in their visit within 2 months. Bangladesh medical research council (2011) in their study on status and prospect on Community clinic have shown 70.3 % respondents stated that supply of medicine in CC were adequate.

Mean waiting time to get service at CC was 26.64 (±8.23) minutes. Whereas maximum waiting time was 45 minutes 05(1.3%) and minimum was 10 minutes 18(4.6%). In a study of Siam health care Dhaka , Bangladesh on Essential service delivery Implementation capacity of CC shows that average waiting time was 25 minutes and Sarkar *et al* (2002) have shown

in their study that satisfaction about waiting time was 62%. A total of 120 (30.9%) respondents stated that they faced no problem due to long waiting time at CC in this study.

Mean walking distance of CC from the residence was 8.21 (±3.947) minutes. But Flora *et al* (2013) has shown in their study that majority of CC (85.9%) were within half an hour walking distance. Sarkar *et al* (2002) have shown 38.8% respondents can reach CC by 30 minutes walking and 50% respondents came to CC on foot 3.4% used rickshaw .

In all nine questions regarding expectation from CC respondents agreed or mostly agreed with the questions. A considerable numbers of respondents were neutral in answering such Likert type question. The numbers of respondents who disagreed with statements were small. Lowest possible score was 9 while highest possible score was 45 and the mean score obtained was 30.86 (±3.04). This value is within 26-35 score range which indicates that the quality of services provided at CC was scored as very good by the respondents. Flora et al have shown 89.1% respondents had received desired/ expected services from CC.

In the current study some associations between different variable were worked out. It was found that more than three-fourth of respondents (230/293) aged 60-70 years were able to take decision of their own. But in >70 years of age group about half of the respondents were dependent to others (son, daughter or other members of the family) to take decision.. In the present study a significant positive association was noted between physical ability of the respondents to attend clinic and physical dependence. Although social barriers like political affiliation, groupings etc. were absent in most cases, 71 respondents reported to have social problem and in half of them (36/71) decision were made by others.

Qualitative finding discussion
Idea of Community Clinic
" ***Community Clinic is the best project so far taken by present Government*** " – It is evident from the discussion of participants that they believe Community Clinic is one of the best project taken by the Government.

"***Community Clinic is the Health Facility at the door steps of rural people*** "- It is clear from the discussion of the respondents that they perceived the idea that CC brought the health facilities to their door steps.

" First level of care "

Most of the respondents think CC serving as the first tier / contact care for the diseases of rural people .

" Senior Citizen's ultimate choice "

It is clear from the findings that Senior citizens are interested to go to CC .Many respondents say they are not economically independent, many of them had to take consent ,help , economical support from family members to go to health facilities .

Expectation from CC

" *We want an effective CC for all time* "

Many respondents give opinion that CC should be effective all the time .They said it should remain open timely and all schedule days .

Adequacy of CC services

" If we consider it only primary level- its adequate , hence we require more ."

Many of the respondents consider the service adequate in case to case basis.

Expertise of the HCP

"They are trained for six months , we don't expect much from them.

Almost all respondents agree that HCPs that include CHCP,HA,FWA are trained for short time , so they have some limitations.

Obstacle to get service from CC

Almost all respondents say they do not find any obstacle to avail service from CC. " *CC is a homely set up – we don't have any problem to get service* ". There are people who initially talked bad about CC but now they understand the benefits of CC. Some people due to political reasons opposed this CC project initially but now they are convinced about the benefits of CC. Some respondents complained about internal grouping or conflicts but in a small scale .

CONCLUSION

Community Clinic is the first tier of medical care designed to provide primary level of health services, located at the door steps of the rural people .It has the aim to provide services through one stop service delivery with particular emphasis on vulnerable group and the poor. The findings of this study suggest that most of the community clinics were close to the house

holds, only a few minutes walking distance and majority of respondents could attend the services by walking.

A big portion of them have no income, a portion of respondents are not dependent but majority are dependent on son, daughter or others. Most of the respondents are found physically able to attend clinic and are free to take decision of treatment by self. Men enjoy more freedom to take decision than women. Respondents need not to wait long for getting service at CC. They don't have major obstacle to get service from community clinic .A number of association were drawn between some important variables , association between financial ability and visit frequency, obstacle to utilize service and treatment decision were significant. Relationship between physical ability and physical dependence visit frequency and sex of the respondents were significantly associated. A number of associations were drawn to assess the obstacle to get access to community clinic services for the senior citizens. None of the obstacle like waiting time, distance of CC, financial dependence appeared to be a big issue. Treatment decision got some association with age ,sex, social problem faced by the respondents But quality of service from CC was not a key role player in making decision to go to community clinic for the senior citizens.

Abbreviation
CC: Community Clinic, HCP: Health Care Provider, BP: Blood Pressure, Min: Minute, CHCP: Community Health Care Provider, HA: Health Assistant, FWA: Family Welfare Assistant.

Competing interests
The Authors declare that they have no competing interests.

Authors' contributions
MRR: Involved in the preparation of the study design, participated in data collection, data entry and data analysis as well as manuscript preparation. MRI: Involved in the preparation of the study design, data analysis and manuscript preparation. All authors read and approved the final draft of the manuscript. AAB: Involved in the research proposal organization, data collection and data analysis and manuscript preparation.

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