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Public Health Services and Service Gap in Char Land Communities in Bangladesh

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Abstract

Char land is well-known as a hard-to-reach community in Bangladesh where the basic health services are very pitiable. Drawing an example from two char land communities in Bangladesh, this study explored the status of the public health services and service gaps. The study collected data from 222 respondents (heads of the households) and used a quantitative research approach where a face-to-face structured interview schedule was employed for data collection. Results showed that the char land family members were suffering different types of diseases, but they did not have adequate scientific treatment facilities; manpower and institutional facilities for health services were lacking against needs; and the quality of health services was awfully poor. All of the respondents mentioned a high service gap between demand and supply on health tests, specialized services and emergency services. Findings would be important guidelines for policy makers, development practitioners, health providers, and health workers.

Keywords: Bangladesh, char land, char community, public health service, health quality, service gap, poor socioeconomic conditions.

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Introduction

Public health services in Bangladesh are provided by the Ministry of Health and Family Welfare, as well as by non-governmental organizations (NGOs) and international organizations. These services include a range of preventive, curative, and rehabilitative services, such as immunizations, maternal and child health care, and disease prevention and control. Some specific public health services that are available in Bangladesh include immunization, maternal and child health, disease prevention and control, and Non-communicable disease prevention and control. Overall, public health services in Bangladesh aim to improve the health and well-being of the population by providing access to quality health care and promoting healthy behaviors. Despite the availability of these services, there are still significant service gaps in Bangladesh. These gaps can be attributed to a number of factors, including inadequate funding and resources, inadequate infrastructure and facilities, and a lack of trained health care professionals.

Public health services are a range of services and programs that are designed to promote and protect the health of the public (Noh *et al.*, 2016). These services are often provided by government agencies, but may also be provided by non-profit organizations and other community-based groups. The specific types of services that fall under the umbrella of public health can vary depending on the needs and resources of a particular community. On the other hand, char lands, or “chars,” are areas of land in Bangladesh that are formed by sediment deposited by rivers (Islam, 2018; Paul & Islam, 2016; Islam & Hossain, Islam *et al.*, 2021). These areas are often located in flood-prone regions and are frequently affected by natural disasters such as floods and cyclones. Chars are typically isolated and have limited access to infrastructure and services, including healthcare. They are also often home to marginalized and vulnerable populations, including women and children. Due to their isolation and lack of access to services, char land areas can experience significant health service gaps. A health service gap refers to a difference between the health services that are needed by a population and the services that are currently available to them. Health service gaps can occur at various levels, including at the global, national, and local levels. Health service gaps can be caused by a variety of factors, including inadequate funding and resources, a lack of trained health care professionals, and inadequate infrastructure and facilities. These gaps can lead to difficulty in accessing health care, particularly for those living in underserved or remote areas. Health service gaps can have significant negative impacts on the health of a population. When individuals are unable to access the health care they need, they may experience poorer health outcomes, and the overall health of the population may suffer. Closing health service gaps is therefore an important public health priority.

One major challenge faced by the health care system in Bangladesh is the shortage of trained health care professionals, particularly in rural areas and in some cases urban slum areas (Islam & wa Mungai, 2016). This shortage can lead

to long wait times and difficulty in accessing care, particularly for those living in remote or underserved areas. Other challenges include inadequate infrastructure and facilities, which can make it difficult to provide high-quality care. This can be particularly problematic in rural areas, where access to health care facilities may be limited. Overall, while public health services are available in Bangladesh, there are still significant service gaps that need to be addressed in order to improve the health of the population. A significant number of studies are published about the public health services globally as well as from the Bangladesh perspective. Roohi *et al.*, (2011) evaluated the gap between clients' expectations and perceptions of quality of primary healthcare service. Beech *et al.*, (2019) wrote a manual on the key areas for action in the health and care workforce for health service gaps. Tzortzopoulos *et al.*, (2009) proposed to (re)design the service delivery and future changes to identify functional barriers to satisfy diverse needs. Chang *et al.*, (2019) and Hu *et al.*, (2017) found the health service gaps between expectation and perception, and coverage and needs. Kepley and Streeter (2018) found workforce shortage in terms of insufficient numbers and shortage of workers, leaving some communities with no behavioral health providers. Silvestro (2005) developed a tool for measuring the gap between patients' priorities and their perceptions.

There are significant service gaps in the health care system in Bangladesh. These gaps can be attributed to a number of factors, including inadequate funding and resources, inadequate infrastructure and facilities, and a lack of trained health care professionals. One major challenge faced by the health care system in Bangladesh is the shortage of trained health care professionals, particularly in rural areas. This shortage can lead to long wait times and difficulty in accessing care, particularly for those living in remote or underserved areas. Other challenges include inadequate infrastructure and facilities, which can make it difficult to provide high-quality care. This can be particularly problematic in rural areas, where access to health care facilities may be limited. In addition, funding for health care in Bangladesh can be inadequate, which can limit the availability of services and the ability to purchase necessary equipment and supplies. Overall, the service gaps in the health care system in Bangladesh can make it difficult for individuals to access the care they need, leading to poorer health outcomes for the population as a whole.

El-Saharty *et al.*, (2015) and Al Imam *et al.*, (2021) reported finding a clear gap between the health coverage and service providers in Bangladesh. Islam and Hamiduzzaman (2021) reported that low income urban dwellers had a minimum of one health centre and staff numbers ranged from 1 to 15 for all wards, but 86% of the newborns had no health and nutrition check-ups. Islam *et al.*, (2022) found a low level of access to the components of social behaviors where around 50% to 60% of caregivers stated 4 benefits of key behaviors: necessity of hand washing after defecation and before and after taking a meal. Siddique *et al.*, (2018) and Biswas *et al.*, (2019) reported that the adequate coverage of the ANC remains poor in Bangladesh and significant gaps remain in the content of ANC contacts when women attend these services. In this regard, Kamal *et al.*, (2016) found the gap

in use of ANC provided by medically trained personnel narrowed in urban and rural areas between 2001 and 2010. Ahemed *et al.*, (2017), Hossain *et al.*, (2020) and Adhikary *et al.*, (2018) mentioned that the private sector with association of non-governmental organizations provides better health services in terms of service quality, patient satisfaction and loyalty.

Adhikary *et al.*, (2018) found that patients' satisfaction levels were increased if the service providers provided better cleanliness, privacy settings and providers' interpersonal skills. On the other hand, Angeles *et al.*, (2019) examine changes over time in intra-urban differences between slums and non-slums in key health outcomes and service utilization and to identify the factors associated with the reduction in intra-urban gaps through adaptation of the difference-in-differences (DID) model in the Union Primary Health Care services.

There are likely to be significant gaps in health services in rural areas of Bangladesh, including in Char Land areas. These areas may be remote and difficult to access, and may have limited infrastructure, such as roads, electricity, and clean water (Islam, 2021). Sigamany and Drydyk (2021) found that on the chars in Bangladesh, the right to development remains starkly unfulfilled due to shortfalls in development, health, education, and self-determining governance on the chars. As a result, people living in these areas may have difficulty accessing healthcare services, including preventive care, diagnosis, and treatment. There may also be shortages of trained healthcare professionals, such as doctors, nurses, and midwives, as well as shortages of essential medicines and medical supplies. Additionally, cultural and financial barriers may prevent some people from seeking healthcare services. It is important for the government and other organizations to work to address these gaps and improve access to healthcare for people living in the char land areas and other rural areas of Bangladesh.

There are numerous reasons why there are likely to be significant gaps in health services in char land areas of Bangladesh. One reason is the geographical isolation of these areas. Many char land areas are located on isolated river islands, or "chars," which can be difficult to access, especially during the monsoon season when floods can cut off transportation routes. This isolation can make it challenging for healthcare providers to reach these communities, and for people living in these areas to access healthcare services (notably cited in Khanam *et al.*, (2022), Alam (2017), Islam *et al.*, (2022), Islam *et al.* (2021), Islam (2018), Islam and Shamsuddoha (2017; Paul & Islam, 2015; Islam & Hasan (2016). Another reason is the lack of infrastructure in these areas. Many char land areas have limited or non-existent infrastructure, such as roads, electricity, and clean water. This can make it difficult to transport patients, power medical equipment, and maintain

hygienic conditions, all of which are essential for providing healthcare services (notably cited in Khanam *et al.*, (2022), Alam (2017). There may also be shortages of trained healthcare professionals in char land areas. The shortage of doctors, nurses, and midwives can make it difficult for people living in these areas to receive the medical care they need (notably cited in Islam, 2021; Islam, 2018; Paul & Islam, 2015. This is particularly concerning for maternal and child health, as the availability of trained professionals is essential for ensuring safe childbirth and neonatal care. In addition to these issues, there may also be shortages of essential medicines and medical supplies in char land areas. This can make it difficult for people to receive the treatment they need, and can lead to the spread of preventable diseases. Finally, cultural and financial barriers may prevent some people living in char land areas from seeking healthcare services. Traditional beliefs and practices, as well as a lack of understanding about the importance of preventive care, may discourage some people from seeking medical treatment. Additionally, the cost of healthcare can be a significant burden for people living in poverty, who may not be able to afford the fees associated with medical treatment (Fatema *et al.*, 2023; Hamiduzzaman & Islam, 2020).

Methodology

Location

According to the Upazila Nirbahi Officers, roughly 5,03,760 households are living in the selected two upazillas. According to Banglapedia (2022), there are 12 unions and 195 villages in Zanzira Upazila and 18 unions and 506 villages. This study only considered two char communities from villages of two unions of Shibchar and Zanjira Upazillas respectively that are close to the Padma river and are affected by river erosion. The study was conducted in two chars in two Upazilas, such as Shibchar (Madraipur District) and Zanjira (Shariatpur) in Bangladesh. This study included two chars in two unions from these two upazilas respectively (Figure 1).

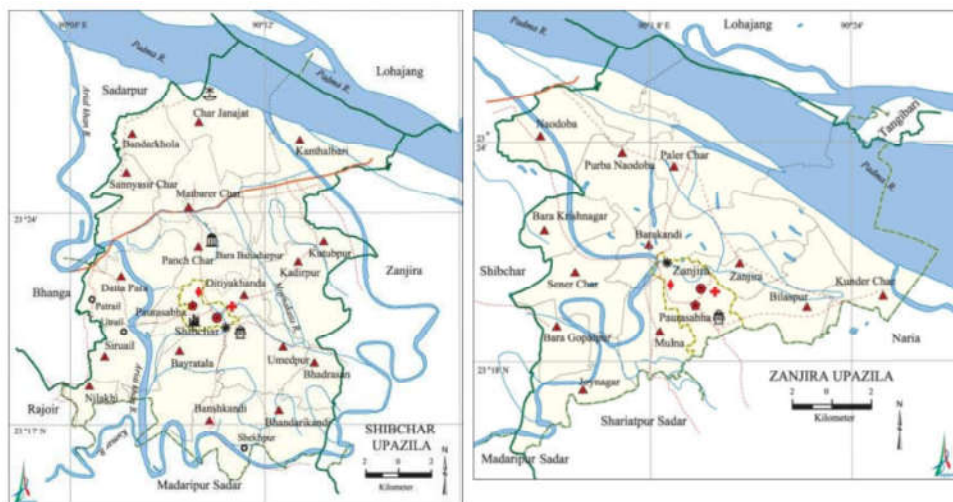


Figure 1. Location maps of the study areas. a Shibchar Upazila, b Zanjira Upazila. Source: Banglapedia (2022)

Research design and sampling procedure

The study used a quantitative approach where a survey method was applied. Substantial amount of data was also collected through systematic description of behaviour asking ‘who’, ‘what’, ‘where’, and ‘how’ questions (Islam & Cojocaru, 2016) . Data was collected through a face-to-face structured interview schedule. The study used a multistage sampling procedure where a stratified cluster sampling was employed for the quantitative investigation. In this case, Upazilas were considered as strata and chars as a cluster. The size (n) of the sample was determined (95% confidence level) by using a given level of precision of Yamane (1967 in Israyel 1992). Precision was defined as the endured limits of error in the estimate. There were a total of 550 households in our selected two chars, Shibchar (Madrampur District) and Zanjira (Shariatpur). To consider the Yamene’s sample table, this research considered 221 households as a sample size. However, this study considered 111 households from each char and each upazila by using systematic random sampling.

Data measurement

Data measurement for gap analysis was based on the following five gap analyses (Dyck, 1996):

- Gap 1: The client’s expectations and the service provider’s perception of those expectations.
- Gap 2: The service provider’s perception of client expectations and the specifications of service quality under which the services are governed.

- Gap-3: The specifications of service quality and the current service that is delivered.
- Gap 4: The actual service that is delivered and what the service organization communicates to the clients about what it will deliver.
- Gap 5: The client’s expected level of service quality and their perception of what level of service quality they actually received.

Respondents’ profile

Among the respondents, 82% are male and 18% female, the highest number of respondents’ age was between 41 years and 70 years; 33% were able to sign, 18% primary and 17% illiterate; business (24%), farmer (12%) and household day labour (10%) were main occupation; and their individual income was monthly Tk. 22,500 and family income Tk. 32,580 (Table 1).

Table 1. Demographic and socioeconomic profile of the respondents

Indicators	%
Gender	
Male	82.4
Female	17.6
Age	
<30 years	6.9
31-40 years	23
41-50 years	25.6
51-60 years	22.4
61-70 years	16.6
>70 years	7.4
Education	
Illiterate	17.1
Able to sign	32.9
Can read	4.9
Primary level	17.5
JSC	12.3
SSC	9.2
HSC	3.4
Graduate and above	2.8
Primary Occupation	
Farmer	11.8

Household works	10.3
Agricultural day labour	4.3
Non-agricultural day Labour	6.5
Business	24.0
Skilled labour	9.8
Service	8.2
Rickshaw/Van driver	4.7
Migrated (Overseas & inland) labour	3.2
Unemployed	6.3
Others	11.1
Income	
Household head average monthly income (Tk.)	22,500
Average monthly family income (Tk.)	32,580

Data analysis technique

The quantitative data were analyzed using SPSS (version 22). Before entering the data into SPSS, a proper coding system was developed following the types of data. Data analysis was followed by the simple descriptive method to examine the collected data and represent the range of responses to specific questions. A statistical tool such as the central tendency was used to transfer the value of a result into a percentage.

Research ethics

The study followed the specific ethical guidelines developed by the Centre for Research, Policy and Development (CRPD). The research team took permission from the Upazila Nirbahi Officers (UNOs) and Chairmen. In this regard, a separate written letter was sent to them by post and e-mail. Verbal consent was taken from the heads of the households before starting an interview. The enumerators also explained to them about the research objective and possible benefits of the study.

Results

The char land people suffer from some common diseases where the highest 87% of the people are affected by fever followed by 75% cold, 48% each cough and diarrhea, 47% headache, 33% diabetes, 30% blood pressure and 28% back

pain. A very few people suffer from malaria, giggle, skin diseases and low blood pressure and skin (Table 2). Data showed that there are not sufficient scientific institutional health facilities in the char land communities where the highest 73% of the people took health services from pharmacy, followed by 64% from private clinics, and 60% from village doctors. Nearly 43% of the char people took health services from the government upzilla/district hospitals and only 14% of the people took services from local union health centre centres followed by less than 8% of family health centres. Nearly 28% of people still depend on traditional sources (Table 2). There is no significant difference in this scenario in both diseases the people suffered and the sources of treatment people received between two upazilas.

Table 2. General diseases treatment facilities for among family members (%)

Indicators	Shibchar	Zajira	Average
<i>General diseases of family members</i>			
Cold	72	78	75
Giggle	9	8	8.5
Diarrhea	9	7	48
Skin disease	15	18	16.5
Fever	88	86	87
Asthma	13	23	18
Cough	45	49	47
Malaria	3	1	2
Diabetes	32	34	33
Back pain	23	32	27.5
Headache	45	51	47
High blood pressure	34	26	30
Low blood pressure	23	21	22
<i>Sources of treatment</i>			
Village doctor	62	58	60
Traditional	32	23	27.5
Religious broomstick	8	10	9
Private clinic	62	65	63.5
Community clinic	23	25	24
Family health center	6	9	7.5
Govt. union health center	11	17	14

Govt. upazila/district hospital	42	43	42.5
Pharmacy	70	76	73

Source: Shibchar and Zajira Upazila Official Website (2022)

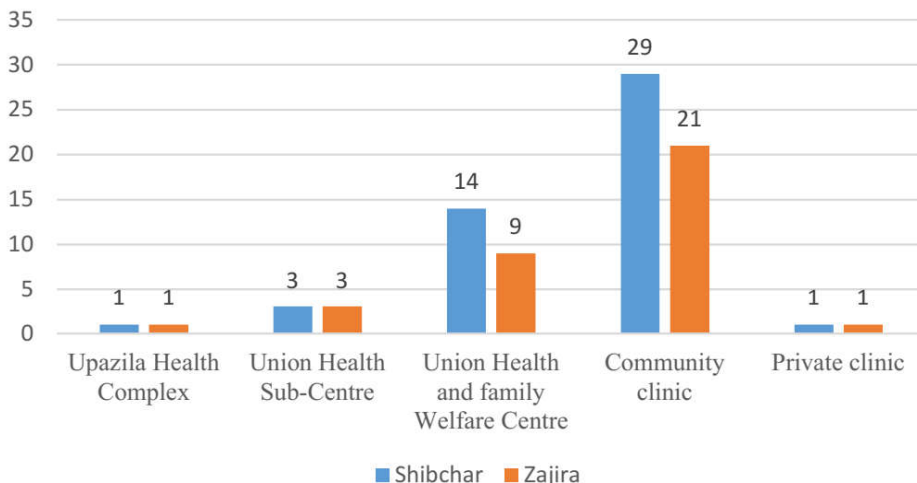


Figure 2. Number of health institutions.

Table 3. Manpower of the health sector in study areas* (total number)

Health sectors	Number of manpower					
	Shibchar			Zajira		
	Doctors	Nurse	Other staffs	Doctors	Nurse	Other staffs
Government hospitals	31	16	39	33	14	43
Non-government hospitals	34	22	39	22	29	34
Clinics	17	13	17	16	15	32
Others	05	05	06	02	03	09
Total	87	56	101	53	61	118

*Data are collected from the Medical Officers of two upazilas

Data showed that in Shibchar Upazila there are 29 community clinics and 14 Union Health and Family Welfare Centres, which are 21 and 9 in Zajira Upazila respectively. There are 3 Union Health Sub-Centres, 1 Upazila Health Complex and 1 private clinic in each upazila (Figure 2). The study found 87 physicians, 56 nurses and 101 other staff members in Shibchar and there are 53, 61 and 118 in Zajira Upazila. It is remarkable that overall manpower in both areas is insufficient as per local demands, and the physician and nurse ratio between the two upazilas is also very low.

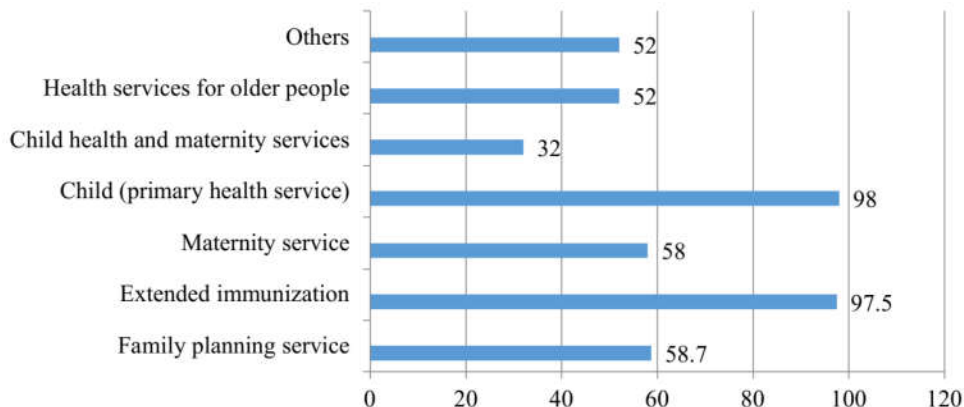


Figure 3. Types of health service provided (%)

The disaster affected char people mentioned that 98% each received the extended immunization and primary health services for children respectively followed by 59% family planning services, 58% maternity services and 52% health services for the older people (Figure 3). Only 32% of the household heads mentioned that they received child health and maternity health services in their local community. Data on the quality of the services by sources showed that most of the people did not provide any comment about this. They either have no knowledge about this because of their illiteracy and low health consciousness or the quality of health service of the local health institution. The people who provided such opinions showed that the number of people who said the service quality was ‘average’ was higher than ‘very good’ and ‘good’ as well as bad and very bad (Table 4). Data showed that 70% of the households that mentioned Community Health Workers visited their households one time each month (this is their normal duty) and the rest of 30% did not; 3% of the households mentioned they visited after six months and 3% mentioned ‘never’.

Table 4. Sources and quality of services of community health facilities (%)

Sources	Quality of Service					
	Very good	Good	Average	Bad	Very bad	No comment
Government health center	2	8	13	4	5	68
NGO maintained	2	13	23	12	7	43
CBO maintained	1	4	12	3	4	76
Private clinic	10	4	3	2	1	80
Others	4	33	16	2	3	42

*Data are collected from 10 Medical Officer over telephone in two upazilas

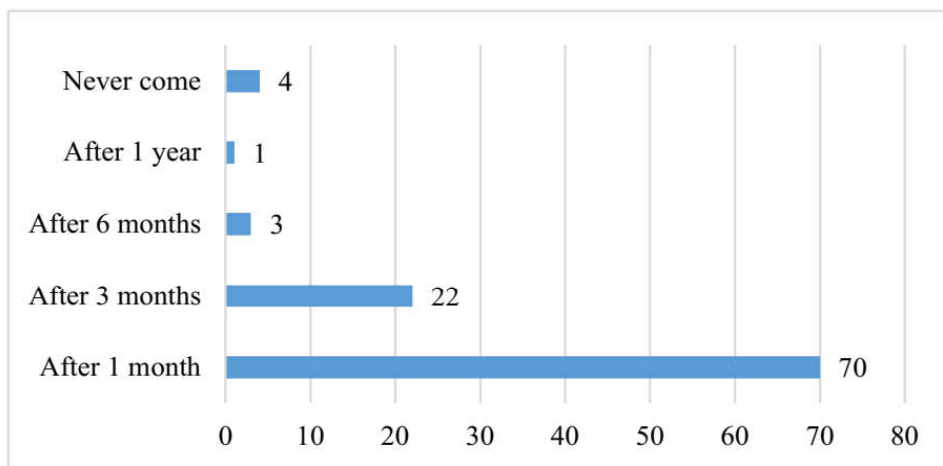


Figure 4. Households visit by Community Health Workers (%)

As per opinions of the physicians, health staff and health workers of two selected upazilas, all of the respondents mentioned a high service gap between demand and supply of the local health services on health tests, specialized services and emergency services, followed by 40 on general health services and 30 on primary health services at the local community. Only 10 respondents each mentioned a slight gap and no gap in primary health services in 5 each on general health services respectively (Table 5). The household heads were asked to provide their opinions on the overall health conditions served by the local health institutions. The highest 48% of them mentioned this ‘average’ followed by ‘not good’ 38%; only 12% mentioned good and only 1% very good (Figure 5).

Table 5. Service gap between demand and supply of health services (in number, n=50) *

Health services	The gap between demand and supply of health services			
	No gap	Slight gap	Equality between demand & supply	Highly gap
Primary health services	10	10	0	30
General health services	5	5	0	40
Health test	0	0	0	50
Specialized services	0	0	0	50
Emergency services	0	0	0	50

*Data were collected from physicians, health staff and health workers of two selected upazilas

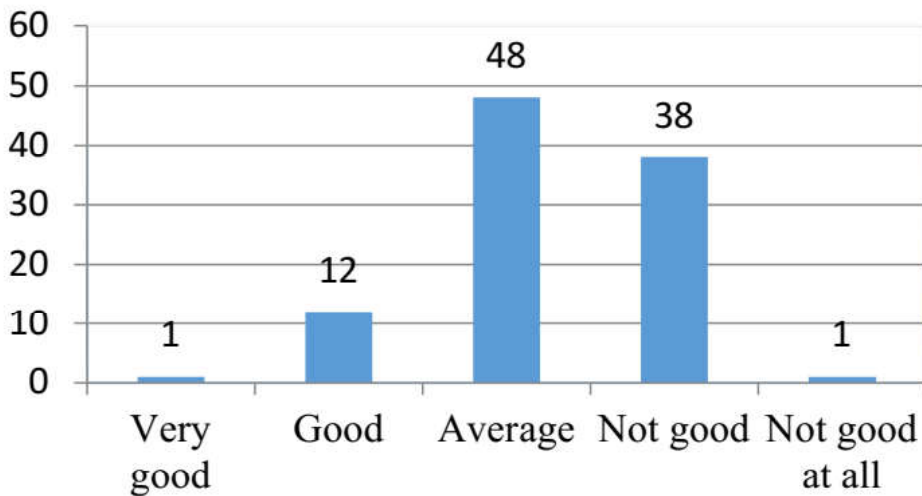


Figure 5. Opinions about health services (%)

Discussion

Drawing an example from two char lands in Bangladesh, this research explored the status of the public health services and service gaps of the local health institutions. Though the findings could be generalized due to the contextual and socioeconomic diversity among the char land communities in Bangladesh, the findings provide some interesting and useful findings about the service gaps which are common in the char communities in Bangladesh. The summary of the findings is as follows:

- The char land people suffer from some common diseases such as 87% fever followed, 75% cold, 48% each cough and diarrhea, 47% headache, 33% diabetes, 30% blood pressure and 28% back pain.
- There are not sufficient scientific institutional health facilities in the char land communities where 73% of the people take health services from pharmacies, 64% from private clinics, and 60% from village doctors.
- 98% each received the extended immunization and primary health services for children respectively, 59% family planning services, 58% maternity services and 52% health services for older people.
- Most of the char people did not provide any comment about the quality of the health services. The people who provided such opinions showed that the number of people who said the service quality was ‘average’.
- 30% of the Community Health Workers visited 1 time per month to the households.
- All of the respondents mentioned a high service gap between demand and supply on health tests, specialized services and emergency services, which are 40 out of 50 on general health services and 30 on primary health services.
- 48% of the char people provided ‘average’ opinions and ‘not good’ 38% on the overall health services served by the local health institutions.

Our research findings are not exceptional to the previous findings on different service gaps. In many cases, we have seen that it was difficult to access the char land communities due to its geographical isolation (Khanam *et al.* 2022; Alam, 2017; Islam *et al.* 2022; Islam *et al.* 2021; Islam, 2018; Islam & Shamsuddoha, 2017; Paul & Islam, 2015; Islam & Hasan, 2016). Shortage of doctors and trained nurses, and health staff (Islam, 2021; Islam, 2018; Paul & Islam, 2015); shortages of maternal and child health, shortages of essential medicines and medical, local people’s cultural and financial barriers, their traditional beliefs and practices, and low level of understanding about the importance of preventive care were found similar with the previous studies (notably El-Saharty *et al.*, 2015; Al Imam *et al.*, 2021; Islam & Hamiduzzaman, 2021; Islam *et al.*, 2022; Siddique *et al.*, 2018; Biswas *et al.*, 2019; Kamal *et al.*, 2016; Ahemed *et al.*, 2017; Hossain *et al.*, 2020; Adhikary *et al.*, 2018; Fatema *et al.*, 2023; Hamiduzzaman & Islam, 2020).

Overall, the health service gaps in char land areas in Bangladesh are a serious concern, as they can have significant negative impacts on the health and well-being of the people living in these areas. It is important for the government and other organizations to work to address these gaps and improve access to healthcare for people living in char land areas and other rural areas of Bangladesh. There are several policy implications of health service gaps in Bangladesh. One is the need for increased investment in the health care system. This could include investments in infrastructure, such as building new hospitals and clinics, as well as investments in human resources, such as training and hiring more healthcare workers. Another

policy implication is the need to address inequities in access to healthcare. This could involve initiatives to increase the availability of healthcare services in underserved areas, as well as efforts to reduce financial barriers to care, such as out-of-pocket expenses. Additionally, there may be a need to improve the quality of healthcare services in Bangladesh.

Conclusion

The paper highlights the challenges faced by char land communities in accessing public health services in Bangladesh. The study reveals that despite the government's efforts to improve the health infrastructure in the country, the char land communities are still facing significant service gaps. The study findings suggest that there is a lack of public health facilities in the char land areas, which is leading to inadequate healthcare services. The limited availability of qualified healthcare professionals, as well as inadequate transportation and communication infrastructure, are identified as the major barriers to accessing healthcare services in these areas. The paper emphasizes the importance of addressing the service gap in the char land communities to improve public health outcomes in the country. The authors suggest that the government needs to focus on improving the healthcare infrastructure in the char land areas, increasing the number of qualified healthcare professionals, and improving transportation and communication facilities to ensure access to healthcare services for these communities. In conclusion, the paper highlights the need for immediate action to address the service gap in char land communities in Bangladesh. The findings of the study provide valuable insights for policymakers, healthcare professionals, and stakeholders to improve the healthcare services in these areas and ensure better health outcomes for the people living in char land communities.

Overall, addressing health service gaps in char land areas in Bangladesh will require a multifaceted approach that addresses both the supply and demand sides of the healthcare system. NGOs ought to focus their efforts on assisting the underprivileged members of the community who truly require their aid in order to achieve self-sufficiency (Islam, 2017; Islam, 2016). This could involve implementing quality assurance measures, such as accreditation programs, and investing in training and professional development for healthcare workers. Some of the specific policy implications of address these gaps include:

- Increasing the capacity of the healthcare system to respond to disasters: This could involve investments in emergency medical supplies, training for healthcare workers in disaster response, and the development of emergency healthcare plans.
- Improving access to healthcare: In disaster-affected areas, access to healthcare may be limited due to damage to infrastructure or the displacement of

people from their homes. Policymakers may need to implement measures to ensure that affected populations have access to essential health services, such as setting up temporary clinics or mobile health units.

- Strengthening the resilience of the healthcare system: Disasters can have a devastating impact on healthcare systems, and it is important to ensure that they are able to recover quickly and effectively. This could involve measures such as building hospitals and clinics to more resilient standards, or implementing disaster risk reduction measures in the healthcare sector.
- Ensuring the availability of essential medicines and supplies: In the aftermath of a disaster, the availability of essential medicines and supplies may be disrupted. Policymakers may need to work with international organizations and NGOs to ensure that these supplies are delivered to affected areas in a timely manner.
- Improving the quality of healthcare: Health facilities on the chars may be limited in terms of the services they can provide, and healthcare workers may lack the training and resources they need to provide high-quality care. Policymakers may need to invest in training and professional development for healthcare workers and ensure that health facilities have the equipment and supplies they need to provide essential services.
- Reducing financial barriers to care: Many people living on the chars may have limited income and may struggle to afford healthcare services. Policymakers may need to implement measures to reduce financial barriers to care, such as expanding insurance coverage or implementing subsidy programs.
- Enhancing the coordination of healthcare services: Given the isolated nature of the chars, there may be a need to improve the coordination of healthcare services between different levels of the healthcare system (e.g., between primary care facilities and referral hospitals) and between different sectors (e.g., between health and education).

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