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Healthcare services access challenges and determinants among persons with disabilities in Bangladesh

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Persons with disabilities in LMICs facing numerous challenges in accessing essential healthcare services. However, this understanding is lacking so far in LMICs and Bangladesh. This study aimed to explore the pattern and determinants of healthcare services access among persons with disabilities in Bangladesh. We analysed data from 4293 persons with disabilities extracted from the 2021 National Survey on Persons with Disabilities. The outcome variable was healthcare services access within three months of the survey, categorized as either "yes" or "no" based on perceived needs. Several individual, household, and community-level factors were considered as explanatory variables. We utilized a multilevel mixed-effect logistic regression model to explore the association of the outcome variable with explanatory variables. The analysis included stratification by age groups: 0–17 years and 18–95 years. One out of every four persons with disabilities in Bangladesh reported that they could not access healthcare services based on their needs within three months of the survey. The main reasons for not accessing services were healthcare costs (52.10%), followed by lack of family support (27.0%), and absence of healthcare facilities in their areas of residence (10.10%). Among those who did receive healthcare services, the majority reported accessing them from governmental hospitals (26.49%), followed by village practitioner (20.52%), and private healthcare centres (19.87%). There was a higher likelihood of accessing healthcare services among persons with disabilities residing in households with higher wealth quintiles and living in the Chattogram and Sylhet divisions. Unmarried or divorced/widowed/separated persons with disabilities reported lower likelihoods of accessing healthcare services. The findings of this study emphasize the need for policies and programs to ensure healthcare services for persons with disabilities in Bangladesh. This entails raising awareness about the importance of providing healthcare services for this demographic, as well as considering healthcare services as part of social safety net programs.

Keywords Persons with disabilities, Healthcare services access, Low- and middle-income countries, Bangladesh

Abbreviations

PWD	Persons with disabilities
WHO	World Health Organization
LMICs	Low- and middle-income countries
BBS	Bangladesh Bureau of Statistics
aOR	Adjusted odds ratios
AIC	Akaike information criteria
BIC	Bayesian information criteria

In 2022, an estimated 1.3 billion individuals, making up the world's largest minority group, lived with disabilities[1]. Over 80% of them reside in low- and middle-income countries (LMICs), where the prevalence of disabilities is

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rising due to advancements in medical technology[2]. Improved medical technology has increased the ability to detect and diagnose disabilities that might have previously gone unnoticed, as well as enhanced survival rates from road accidents, birth defects, and premature births[3]. Additionally, longer life expectancy—often a result of these advancements—means that more individuals may develop age-related disabilities, such as chronic illnesses and mobility problems[4]. As more cases are identified and documented, this can lead to an apparent increase in disability rates. These trends highlight the need for comprehensive healthcare systems that address the unique needs of this growing population[5]. In Bangladesh, where an estimated 2.79% of the population lives with disabilities, ensuring equitable access to healthcare remains a critical challenge[6].

Historically, perceptions in LMICs, including Bangladesh, often portray persons with disabilities as dependent on family and government support for basic needs like food and healthcare[6,7]. This perception, while not inherently malicious, can create a cycle of dependence and restrict access to essential services[7,8]. While studies in LMICs have explored the prevalence and determinants of disability, the issue of healthcare access specifically for persons with disabilities remains relatively understudied. Available research mainly focuses on rural areas with small sample sizes, poor study design, and less precise methodologies[6,9–12]. Additionally, these studies often consider various classifications of disabilities or focus on specific types, rather than providing a comprehensive overview[6,9–12]. Other predominant focus areas are social safety nets and integration into mainstream society[7,13]. Due to this neglect, the nuanced challenges faced by persons with disabilities in accessing healthcare remain largely unknown.

This gap is particularly evident in Bangladesh, where governmental support often falls short, providing only limited financial assistance[7]. Moreover, healthcare facilities in Bangladesh are often not disability-friendly in terms of accessibility and are typically characterized by overcrowding, long waiting times, and a very high doctor-to-population ratio[14]. Additionally, the country's healthcare system operates primarily on a "need-based" model, focusing on immediate concerns rather than long-term preventive care (merit based care)[15]. This creates an additional barrier for persons with disabilities who may require ongoing medical attention and specialist services[5].

Furthermore, a crucial gap exists in understanding the socio-cultural dynamics at play within communities. Misconceptions about the healthcare needs of persons with disabilities persist among community members who serve as crucial support systems, potentially leading to underreported healthcare needs and limited access to resources[14,16,17]. Existing research in Bangladesh reflects this gap, focusing more on disease burden and prevalence of disabilities[5–7,14,17]. However, research focusing the healthcare needs of the persons with disabilities and its accessibility are still lacking in Bangladesh and a few are available are based on sample of particular areas or persons with particular form of disabilities[5,6,14] To address this limitation, we conducted this study to explore the pattern and determinants of healthcare services access by the persons with disabilities in Bangladesh.

Methods

Sampling strategy and ethics

We analysed data extracted from the 2021 National Survey on Persons with Disabilities (NSPD), a nationally representative household survey conducted by the Government of Bangladesh through the Bangladesh Bureau of Statistics (BBS). The households were selected using a two-stage stratified random sampling technique. In the first stage, 800 primary sampling units (PSUs) were randomly selected from the list of 293,579 PSUs generated by the BBS as part of the 2011 National Population Census (the most recent population census in Bangladesh at the time of the survey). Household listing operations were then conducted in each of the selected PSUs. Subsequently, 45 households were systematically chosen from each selected PSU in the second stage of sampling. This process generated a list of 36,000 households, from which data were collected from 35,493 households, achieving a coverage rate of 98.6%. There were 155,025 respondents in these selected households, and all of them were included in the survey. Detailed description regarding the survey has been presented elsewhere[6,7,18].

The survey we analysed was reviewed and approved by the Ethics Committee of the Bangladesh Bureau of Statistics. Informed written consent was obtained from each respondent (or their legal guardian for respondent aged < 18 years) before collecting data. We obtained de-identified publicly available data from the BBS by submitting a research proposal for this research. As we analysed survey data extracted in deidentified form no additional ethical approval is required.

Analytical sample

The inclusion criteria for this study were: (i) individuals with disabilities, and (ii) those who responded to questions about their healthcare needs within three months of the survey. Individuals who reported not needing any healthcare services within this period were excluded. In the main survey, 4293 respondents with disabilities were classified according to the Washington Group on Disability's definition, which aligns with the Persons with Disabilities Rights and Protection Act, 2013 of Bangladesh[18–20]. According to these definitions, individuals with disabilities are those at greater risk than the general population of experiencing limitations in completing specific tasks or activities due to impairments in basic functioning, such as walking, seeing, hearing, or memory—even if these limitations are mitigated by assistive devices or supportive environments. Out of the identified individuals with disabilities, 724 reported not needing any health services within three months of the survey and were excluded from the analysis. Consequently, 3563 respondents were included in the final analysis. The methodology for collecting disability-related data is detailed elsewhere[6,18].

Outcome variables

The outcome variable considered was the respondents' healthcare services access status. During the survey, respondents were first asked whether they needed healthcare services within three months of the survey with the response options "Yes" and "No." Respondents who responded affirmatively were then asked whether they

accessed healthcare services, with response options "Yes" and "No." Based on these two responses, we generated a dichotomous variable on healthcare services access within three months of the survey based on perceived needs (yes, no).

Explanatory variables

We conducted a comprehensive search to identify explanatory variables to be included in this study. The search was conducted in several databases, with a focus on LMICs and Bangladesh[6,10,17,21–25]. The variables included were respondent's age (0–17 years, 18–59 years, and ≥ 60 years), respondents' years of schooling, gender (male or female), occupation (agriculture, blue-collar work, pink-collar work, white-collar work, student, housewife, unable to work, and others), marital status (married, unmarried, widowed/divorced/separated), and religion (Islam, others). Household's wealth quintile was also included as generated and presented in the survey dataset by the survey authority, with five categories: poorest, poorer, middle, richer, richest. Household asset-related variables, such as roofing type and ownership of a refrigerator, were used to create this variable through principal component analysis. Additional factors included respondents' place of residence (urban and rural) and their region of residence (Barishal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, and Sylhet).

Statistical analysis

Descriptive statistics were used to describe the characteristics of the respondents. The statistical significance of the variation in accessing healthcare services across the considered explanatory variables was determined through a chi-square test. A multilevel mixed-effect logistic regression model was used to determine the relationship of the outcome variable with explanatory variables. The rationale for using this model was the nested structure of the NSPD data, where respondents were nested within households, and households were nested within a PSU. Previous research has indicated that multilevel modelling yields more precise results with such a nesting structure of the data, compared to a conventional simple logistic regression model[26]. We ran two separate models by splitting the total sample into two groups based on their ages: aged 0–17 and aged 18–95. A progressive model-building technique was used for each age group, involving the creation of three distinct models based on the socio-ecological model of health. According to this model, health and healthcare access are influenced by a complex range of socio-demographic factors that interact with each other[27]. Following this, we developed three models: Model 1 included only individual-level factors; Model 2 included both individual and household-level factors; and Model 3, the final model, incorporated individual, household, and community-level factors. Multicollinearity was checked before running each model through the Variance Inflation Factor (VIF). If evidence of multicollinearity was found (VIF > 5.0), the relevant variable was deleted, and the model was run again. Results were reported as adjusted odds ratios (aOR) with their corresponding 95% Confidence Intervals (95% CI). All statistical analyses were carried out using STATA/SE 14.0 (Stata Corp LP, College Station, Texas, United States of America). All methods were carried out in accordance with relevant guidelines and regulations.

Result

Background characteristics of the respondents

The background characteristics of the respondents are presented in Table 1. The mean age of the respondents was 42.91 years. Around half (50%) of the total respondents were aged 18–59 years at the time of the survey. Approximately 58% of the total respondents were male. The mean year of schooling was reported 3.80 years. Over one third of total respondents identified them as unable to work. Around 81% of the total respondents resided in rural area while around 20% indicated Dhaka as their region of residence.

Healthcare service access within 3 months of the survey across explanatory variables

Table 2 presents distribution of access to healthcare services across considered explanatory variables. We found that around 75% of persons with disabilities received at least one episode of healthcare services within three months of the survey. Male respondents and pink colour workers reported higher prevalence of healthcare services access. Respondents who was richest and those from urban residence reported higher percentage of received healthcare services. Respondents resided in the Sylhet division reported higher prevalence of healthcare services access.

Sources of healthcare services access within three months of the survey

We explored the sources of accessing healthcare services for those who received healthcare services within three months of the survey. The corresponding results are presented in Table 3. Around a quarter (22.26%) of the total respondents reported they received healthcare services from government hospitals. This was followed by village practitioners (20.52%), private hospitals/clinics (19.87%), allopathic drug stores (14.29%), and private MBBS doctor's chambers (14.18%).

Reasons for not accessing healthcare services

The reasons for not accessing healthcare services reported by respondents who didn't receive healthcare on need within three months of the survey are presented in Fig. 1. Over half (52.10%) of the total respondents reported the cost of accessing healthcare services as the primary reason, followed by 27% reporting lack of family support and 10.10% reporting no healthcare centre in the areas where they resided. This observation was found to be different across respondents' gender. Males reported a higher burden due to cost than females. For females, lack of family support and no healthcare centre in the area were cited as more prevalent reasons than for males.

Characteristics	Frequency (N)	Percentage	95% CI
Respondent's age (in years), mean (SD)		42.91(± 23.73)	
0–17	687	19.29	17.97–20.67
18–59	1783	50.05	48.45–51.65
≥ 60	1093	30.67	29.07–32.31
Respondent's gender			
Male	2049	57.50	55.86–59.12
Female	1514	42.50	40.88–44.14
Respondent's year of schooling mean (SD)		3.80(± 8.86)	
Respondent's occupation			
Agriculture	343	9.63	8.62–10.73
Blue collar worker[b]	213	5.96	5.21–6.83
Pink collar worker[P]	126	3.54	2.95–4.25
White collar worker[W]	311	8.73	7.8–9.77
Student	353	9.90	8.92–10.96
Housewives	436	12.24	11.15–13.43
Unable to work	1250	35.09	33.39–36.83
Others*	531	14.91	13.67–16.24
Marital status			
Married	1743	48.92	47.2–50.64
Unmarried	1170	32.85	31.12–34.64
Widowed/Divorced/Separated	650	18.23	16.96–19.57
Religion			
Muslim	3206	89.99	87.97–91.7
Others**	357	10.01	8.30–12.03
Wealth quintile			
Poorest	947	26.59	24.65–28.63
Poorer	811	22.76	21.18–24.43
Middle	719	20.17	18.66–21.76
Richer	590	16.56	15.02–18.22
Richest	496	13.92	12.46–15.52
Place of residence			
Rural	2880	80.83	79.18–82.38
Urban	683	19.17	17.62–20.82
Administrative division			
Barishal	206	5.78	5.04–6.62
Chattogram	574	16.12	14.72–17.62
Dhaka	718	20.16	18.62–21.8
Khulna	482	13.53	12.3–14.86
Mymensingh	251	7.04	6.18–8.00
Rajshahi	551	15.45	13.8–17.27
Rangpur	573	16.09	14.59–17.72
Sylhet	208	5.83	5.04–6.73

Table 1. Background characteristics of the persons with disabilities (n = 3563). [b]blue collar worker means [factory/manufacturing workers/labour, transportation/communication workers, day labor (non-agriculture), auto/cng/tempo driver, rickshaw driver/van driver/boatman, poultry/animal husbandry for business, fishery or aquaculture and fisherman]. [P]Pink collar worker means [small business (capital up to taka 1000), business (capital over taka 10,000), kabiraj /ojha/spiritual physician, village doctor and homeopathy doctor]. [W]White collar worker means [teacher, lawyer/journalist/doctor/engineer, government employee/officer, private/Ngo employee/officer, handicraft/cottage industry, weaver/blacksmith/potter/goldsmith/serv, imam/priest, family helper and housemaid/servant]. *Family helper, servant, looking for work, unable for work, beggar, no work and not looking for work, and other unnamed occupations; **Hindu, Buddhism, Christianity, etc.

Factors associated with healthcare services access by persons with disabilities

We ran two separate multilevel mixed-effect logistic regression models to identify the associated factors of healthcare services access by persons with disabilities, one for respondents aged 0–17 years and one for respondents

Characteristics	Healthcare services access	
	Yes (74.58%, n = 2657)	No (25.42, n = 906)
Respondent's age (in years)		
0–17	76.68	23.32
18–59	73.61	26.39
≥ 60	74.82	25.18
Respondent's gender		
Male	75.18	24.82
Female	73.75	26.25
Respondent's year of schooling (mean)	3.96	3.36
Respondent's occupation		
Agriculture	74.44	25.56
Blue collar worker	70.11	29.89
Pink collar worker	80.62	19.38
White collar worker	75.45	24.55
Student	80.46	19.54
Housewives	74.88	25.12
Unable to work	73.05	26.95
Others	73.95	26.05
Marital status		
Married	76.42	23.58
Unmarried	73.38	26.62
Widowed/Divorced/Separated	71.77	28.23
Religion		
Muslim	74.7	25.3
Others	73.43	26.57
Wealth quintile		
Poorest	64.17	35.83
Poorer	76.53	23.47
Middle	74.53	25.47
Richer	79.11	20.89
Richest	85.95	14.05
Place of residence		
Rural	73.22	26.78
Urban	80.29	19.71
Administrative division		
Barishal	68.47	31.53
Chattogram	82.17	17.83
Dhaka	70.58	29.42
Khulna	77.12	22.88
Mymensingh	69.18	30.82
Rajshahi	71.87	28.13
Rangpur	73.0	27.0
Sylhet	85.6	14.4

Table 2. Healthcare services access within three months of the survey across explanatory variables considered, Bangladesh (n = 3563). All values are presented as row percentage.

aged 18 years or older (Table 4). The corresponding full model results are presented in the Supplementary table 1 and 2. In the first model, we found that for every year increase in respondents' age, there was a 7% reduction (aOR: 0.93, 95% CI 0.87–1.00) in the likelihood of accessing healthcare services. We also found a gradual increase in healthcare services access with the increase in the score of household wealth, with likelihoods increasing from 2.96 times to 9.85 times among the poorer to the richest compared to the poorest wealth quintile. Respondents residing in the Sylhet division reported higher likelihoods of healthcare services access compared to respondents residing in the Barishal district.

For respondents aged 18–95, we found lower likelihoods of healthcare services access among persons with disabilities who are unmarried (aOR: 0.63, 95% CI 0.43–0.93) or widowed/divorced/separated (aOR: 0.66, 95% CI 0.48–0.92) compared to married persons with disabilities. Higher likelihoods of healthcare services access

Sources of healthcare services access	Percentage (95% CI)
Government hospitals	22.26 (20.23–24.43)
Government health centres	4.23 (3.25–5.47)
Private Hospital/Clinic	19.87 (18.12–21.74)
Private MBBS doctor's chamber	14.18(12.61–15.91)
Village practitioner	20.52 (18.64–22.54)
Allopathic drug store	14.29 (12.72–16.03)
Private Paramedics	1.50 (1.07–2.09)
Homeopathy/homeopathic drug store	1.73 (1.28–2.34)
NGO operated Hospitals	0.32 (0.15–0.64)
Other sources	1.10(0.75–1.62)

Table 3. Sources of healthcare services access within three months of the survey date by persons with disabilities in Bangladesh.

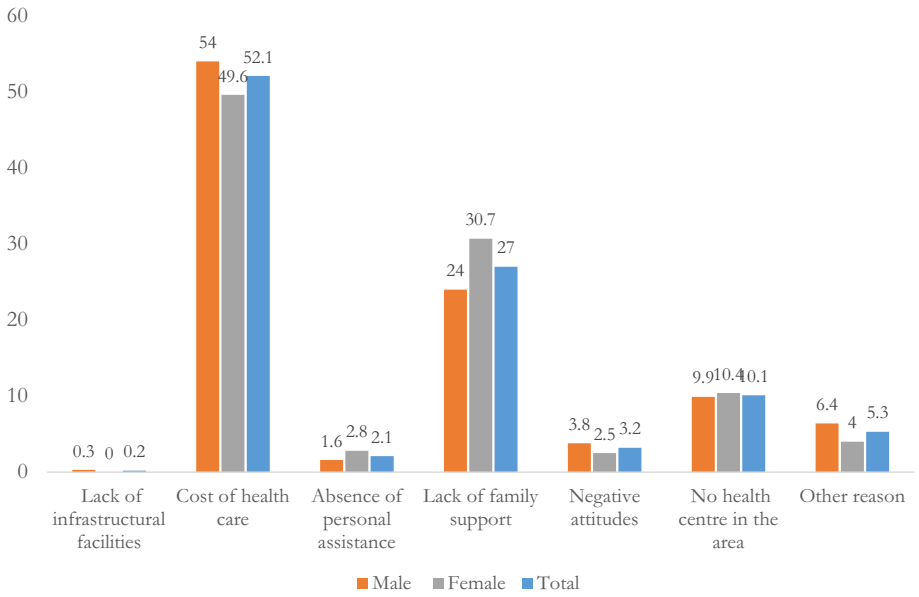

Figure 1. Reasons for not accessing healthcare services within three months of the survey reported by the persons with disabilities.

were found among persons with disabilities who belong to households classified as poorer (aOR: 2.17, 95% CI 1.57–3.00), middle (aOR: 2.25, 95% CI 1.60–3.16), richer (aOR: 3.09, 95% CI 2.08–4.58), and richest (aOR: 5.59, 95% CI 3.35–9.34) compared to the poorest. Persons with disabilities who were residents of Chattogram (aOR, 3.22, 95% CI 1.52–6.84) and Sylhet (aOR, 3.99, 95% CI 1.68–9.52) regions reported higher likelihoods of healthcare services compared to persons with disabilities who resided in the Barishal division.

Discussion

The objectives of this study were to investigate the pattern of healthcare services access among persons with disabilities in Bangladesh and its associated socio-demographic factors. We found that approximately 75% of persons with disabilities accessed healthcare services when needed within three months of the survey, while the remaining respondents did not. More than one-fourth of those who accessed healthcare services did so from governmental healthcare facilities. Additionally, over half of those who did not access healthcare services cited the cost of healthcare as a barrier. We observed a higher likelihood of healthcare services access among persons with disabilities belonging to higher wealth quintiles and residing in the Chattogram and Sylhet divisions. Unmarried or divorced/widowed/separated persons with disabilities reported lower likelihoods of accessing healthcare services. These findings are robust as they are derived from a large-scale nationally representative survey and adjusted for a broad range of confounding factors. The results underscore the need for targeted interventions to ensure access to healthcare services for persons with disabilities in Bangladesh.

The findings of this study indicate that one in every four persons with disabilities in Bangladesh could not access healthcare services when needed. Although we could not validate these findings due to the lack of relevant literature at the national level, previous small-scale studies suggest that this is the ongoing reality in Bangladesh

Characteristics	Respondents' aged 0–17 years		Respondents' aged 18–95 years	
	aOR	95% CI	aOR	95% CI
Respondent's age in years	0.93	0.87–1.00	1.00	0.99–1.01
Gender				
Male	1.0	1.0	1.0	1.0
Female	0.72	0.42–1.22	1.09	0.80–1.49
Respondent's year of schooling	1.0	0.98–1.02	1.01	0.98–1.03
Respondent's occupation				
Agriculture	Na	Na	1.0	1.0
Blue collar worker	Na	Na	1.15	0.68–1.96
Pink collar worker	Na	Na	1.60	0.82–3.12
White collar worker	Na	Na	1.34	0.80–2.24
Student	Na	Na	1.29	0.53–3.14
Housewives	Na	Na	1.18	0.70–2.00
Unable to work	Na	Na	1.05	0.70–1.58
Others	Na	Na	0.87	0.53–1.43
Marital status				
Married	Na	Na	1.0	1.0
Unmarried	Na	Na	0.63**	0.43–0.93
Widowed/Divorced/Separated	Na	Na	0.66**	0.48–0.92
Religion				
Muslim	1.0	1.0	1.0	1.0
Others	0.62	0.22–1.73	0.83	0.53–1.31
Wealth quintile				
Poorest	1.0	1.0	1.0	1.0
Poorer	2.96***	1.38–6.34	2.17***	1.57–3.00
Middle	2.25**	1.05–4.81	2.25***	1.60–3.16
Richer	6.67***	2.42–18.32	3.09***	2.08–4.58
Richest	9.85***	2.79–34.73	5.59***	3.35–9.34
Place of residence				
Rural	1.0	1.0	1.0	1.0
Urban	0.96	0.40–2.32	0.97	0.59–1.59
Administrative division				
Barishal	1.0	1.0	1.0	1.0
Chattogram	2.70	0.76–9.56	3.22***	1.52–6.84
Dhaka	0.58	0.18–1.85	0.88	0.43–1.79
Khulna	2.09	0.56–7.75	1.63	0.77–3.44
Mymensingh	1.26	0.36–4.42	1.14	0.50–2.59
Rajshahi	0.78	0.24–2.55	1.33	0.64–2.76
Rangpur	0.89	0.29–2.75	1.88	0.89–3.95
Sylhet	5.25**	1.18–23.37	3.99***	1.68–9.52
Model summary				
AIC	619.66		2948.46	
BIC	698.51		3109.81	

Table 4. Factors associated with accessing healthcare services among persons with disabilities in Bangladesh. aOR, Adjusted odds ratio, $^{**}p < 0.05$, $^{***}p < 0.01$, Na, Not applicable.

as well as other LMICs[14,17,26,28]. A 2024 study published using the same survey data that analysed in this study indicates that persons with disabilities in Bangladesh mostly suffer from non-communicable diseases and several chronic conditions, including diabetes and hypertension, which typically require long-term care with continuity[5]. Inability to access such care can lead to the development of severe health issues, including kidney failure[5]. This, coupled with our study findings, highlights the severe vulnerability that persons with disabilities in Bangladesh are currently facing.

Several factors contribute to the challenges faced by persons with disabilities in accessing healthcare services. One significant challenge is the financial difficulties encountered by persons with disabilities in Bangladesh, consistent with our study findings and those of other available studies in Bangladesh and other LMICs[7,29–31]. Persons with disabilities in Bangladesh are often marginalized when it comes to engaging in economic activities[7]. The

transportation and education systems in Bangladesh are typically not disability-friendly, with limited accessibility for wheelchairs and other disability support aids[6,14,17]. Additionally, persons with disabilities face significant barriers at the community level regarding their participation in education[7]. The job market in Bangladesh is highly competitive, making it difficult for persons with disabilities to sustain employment until they secure a job, especially with comparatively lower education levels, and receive adequate support afterward[32]. Consequently, these issues restrict the work participation of persons with disabilities, leading them to depend on their families and the government's social safety net programs to meet their basic needs throughout their lives[32,33]. This long-term dependency is often unwelcomed at the family level. Moreover, the social safety net programs developed by the government are inadequate in terms of coverage and support provided, with persons with disabilities receiving only a nominal monthly stipend of nearly 8 USD from the government[7]. This lack of financial resources hinders their ability to access basic services when needed, including healthcare services, as reported in this study.

Infrastructural challenges at the healthcare facility level exacerbate these difficulties. This includes healthcare facilities that are not disability-friendly in terms of access and service provision[14,17]. Government healthcare facilities, which were reported as major sources of accessing healthcare services by persons with disabilities in this study as well as in other studies in Bangladesh, are often overcrowded, leading to long wait times for services[14]. Moreover, under the current healthcare structure in Bangladesh, respondents need to visit sub-district and district levels to access healthcare services, with a lack of services at the community level[34,35]. These factors contribute to persons with disabilities being highly dependent on family members to access healthcare services[7]. The inability to do so results in lower access to healthcare services, as reported in this study and other studies conducted in Bangladesh, as well as other LMICs[14,28,35].

This research reveals a declining likelihood of accessing essential healthcare services with increasing age among individuals with disabilities. This trend aligns with recent studies in South Asia, including Bangladesh, and Africa, highlighting similar disparities faced by younger children with disabilities[36,37]. This concerning link between age and healthcare access might stem from several interconnected factors. Firstly, strong family bonds and a deeper sense of responsibility often lead parents to prioritize the healthcare needs of their younger children[36]. This attentiveness might wane with age, as expectations shift towards greater independence. Secondly, younger individuals with disabilities often rely heavily on their parents for daily care and healthcare decision-making. As they age and gain more autonomy, navigating the complexities of the healthcare system independently can become a significant barrier[5]. Finally, adults with disabilities often receive support from a wider network, including extended family, government programs, and community services. While beneficial, navigating this complex web of support can be challenging, contributing to access disparities. In response, it is crucial to implement awareness campaigns highlighting the importance of healthcare access for individuals with disabilities across all age groups, develop age-specific support systems catering to the unique needs of children and adults with disabilities, and empower individuals with disabilities to advocate for their own healthcare needs and navigate the system effectively. However, these focal points are lacking in LMICs and specifically in Bangladesh.

We identified a decreased likelihood of accessing healthcare services among persons with disabilities who are not in formal partnerships. This finding prompt consideration of several potential underlying factors. Firstly, individuals without formal partners may lack the social support typically provided by a partner, which can be instrumental in navigating healthcare systems, scheduling appointments, or arranging transportation to healthcare facilities[38]. Secondly, persons with disabilities who are not in formal partnerships may face heightened financial burdens, including higher out-of-pocket healthcare costs, which could deter them from seeking necessary medical care[39]. Furthermore, emotional barriers may play a role. Those without formal partners may experience feelings of loneliness or isolation, which can impact their motivation or ability to engage with healthcare services[39,40]. Lastly, stigma and discrimination within healthcare settings may contribute to lower healthcare access. Individuals without formal partners may encounter bias or prejudice, leading to reluctance or avoidance in seeking care[41].

We found divisional-level variations in healthcare services access among persons with disabilities in Bangladesh, with respondents in Sylhet and Chattogram divisions reporting higher likelihoods of accessing healthcare services. These findings are consistent with previous studies in Bangladesh, which have also documented variations in healthcare services access across divisions[34,35]. Several factors may contribute to these divisional-level variations. Geographic disparities, such as differences in healthcare infrastructure and availability of facilities, could play a significant role. Sylhet and Chattogram divisions may have better-developed healthcare systems, resulting in improved access for persons with disabilities[6]. Socioeconomic differences between divisions, including variations in income levels and employment opportunities, could also impact healthcare access[6,7]. Additionally, population distribution and cultural factors may influence healthcare services access, with divisions having larger populations or different cultural attitudes towards disability potentially affecting service availability and utilization.

We discovered that one in four persons with disabilities in Bangladesh do not access healthcare services when needed. The reasons for not accessing healthcare services include the associated costs, lack of family support, and the absence of healthcare centres in their area. Additionally, we found that the likelihood of accessing healthcare services varied depending on marital status, family wealth quintile, and place of residence. These findings highlight the severe vulnerability faced by persons with disabilities in Bangladesh. Policies and programs aimed at ensuring healthcare services for persons with disabilities are crucial. This includes raising awareness about the importance of ensuring healthcare services for persons with disabilities and strengthening healthcare facilities to provide appropriate care. The government should also consider incorporating free healthcare services for persons with disabilities as part of its social safety net program.

This study possesses several strengths as well as a few limitations. To our knowledge, it represents the first nationally representative exploration conducted in Bangladesh examining the access to healthcare services among persons with disabilities at the national level and its correlates. It is based on a sizable sample derived from a

nationally representative household survey, and recognized procedures were utilized to measure the receipt of healthcare services. Comprehensive statistical modelling employing a hierarchical data structure was employed for data analysis, with sampling weights considered in all analyses. Consequently, the findings are robust and applicable for informing the development of national-level policies and programs. However, the primary limitations of this study include the reliance on cross-sectional data, which limits our ability to establish causality, as the findings are purely correlational. Additionally, the survey relied on self-reported healthcare data, which may introduce the potential for misreporting certain healthcare experiences. Data were collected through respondent-provided answers without validation opportunities, suggesting the possibility of recall bias, although any such bias is likely to be random. Moreover, aside from the factors adjusted in the model, health and environmental variables may contribute to healthcare utilization, underscoring their importance for inclusion in the model. Unfortunately, these data were unavailable in the survey, limiting our ability to consider them. Despite these limitations, the findings of this study are poised to make meaningful contributions to the development of national-level policies and programs.

Data availability

The datasets utilized and analyzed in this study are accessible through the Bangladesh Bureau of Statistics (BBS). Interested researchers need to submit a research proposal to the BBS by sending email to dg@bbs.gov.bd. Upon review, the BBS will provide the dataset, as they did with us, in deidentified form.

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Author contributions

M.R. and M.S.R. conceived and designed the study, conducted data analysis. M.R. and M.N.K. drafted the initial manuscript. M.N.K. and M.M.R. critically reviewed and edited previous versions of the manuscript. All authors have approved the final version of the manuscript.

Competing interests

The authors declare no competing interests.

Additional information

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