RESEARCH BRIEF

Status of Health, Education and Employment among Persons with Neurodevelopmental Disabilities in Bangladesh

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Introduction

Persons with disabilities constitute a significant part of the total population in Bangladesh. Bangladesh is home to 3.56 million persons with disabilities[1]. As per the definition of the Rights and Protection of Persons with Disabilities Act 2013 and Neurodevelopmental Disability Protection Trust Act 2013, autism spectrum disorder, Down syndrome, intellectual disability, and cerebral palsy are considered as neurodevelopmental disabilities.

Persons with neurodevelopmental disabilities often experience poor social inclusion, adverse socio-economic conditions, and limited access to public services due to social stigma and misconceptions surrounding neurodevelopmental disabilities.

Multiple coexisting health conditions are common among them. For example, children with neurodevelopmental disabilities are at increased risk of experiencing different associated health conditions such as epilepsy, asthma, and gastro-intestinal complications than those without neurodevelopmental disorders. The management of neurodevelopmental disabilities of children often involves a combination of medicines, professional therapy, and home & school-based programmes. These are promoted as disability-inclusive practice in national health-sector policy documents. But scope and coverage of these interventions are uneven nationwide as currently there are a lack of qualified healthcare professionals, therapist, special educators, and trained teachers in the country.

In education, children with neurodevelopmental disabilities frequently struggle due to their cognitive and social difficulties, and a lack of specialised supports in schools. Despite policies promoting inclusive education, implementation of policy commitments is weak, and universal design principles are not evenly adopted nationwide in educational institutions.

Employment opportunities are minimal for persons with neurodevelopmental disabilities. Discrimination, lack of reasonable accommodation, and limited job opportunities continue to result in high unemployment rates, despite legal provisions for employment quotas.

To ensure the rights and dignity of persons with disabilities including those with neurodevelopmental disabilities, the government of Bangladesh adopted the Rights & Protection of Persons with Disabilities Act 2013, and the Neuro-Developmental Disability Protection Trust Act 2013. Following these acts, multiple initiatives were undertaken. Nonetheless, the efforts were insufficient and not comprehensively assessed for effectiveness. National policy documents also acknowledge the inadequacy of current inclusion efforts in health, education, and employment sectors, and suggest mapping best practices suitable for Bangladesh.

This study aimed to assess the health, education, and employment situation of persons with neurodevelopmental disabilities in Bangladesh. Additionally, the study explored

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[1] https://www.dis.gov.bd/

national policy promises that are currently being implemented, to improve access to health and education services as well as employment opportunities for persons with neurodevelopmental disabilities in Bangladesh. Based on the findings, it provided recommendations to enhance their health and well-being, including education and socio-economic conditions.

Research Objectives

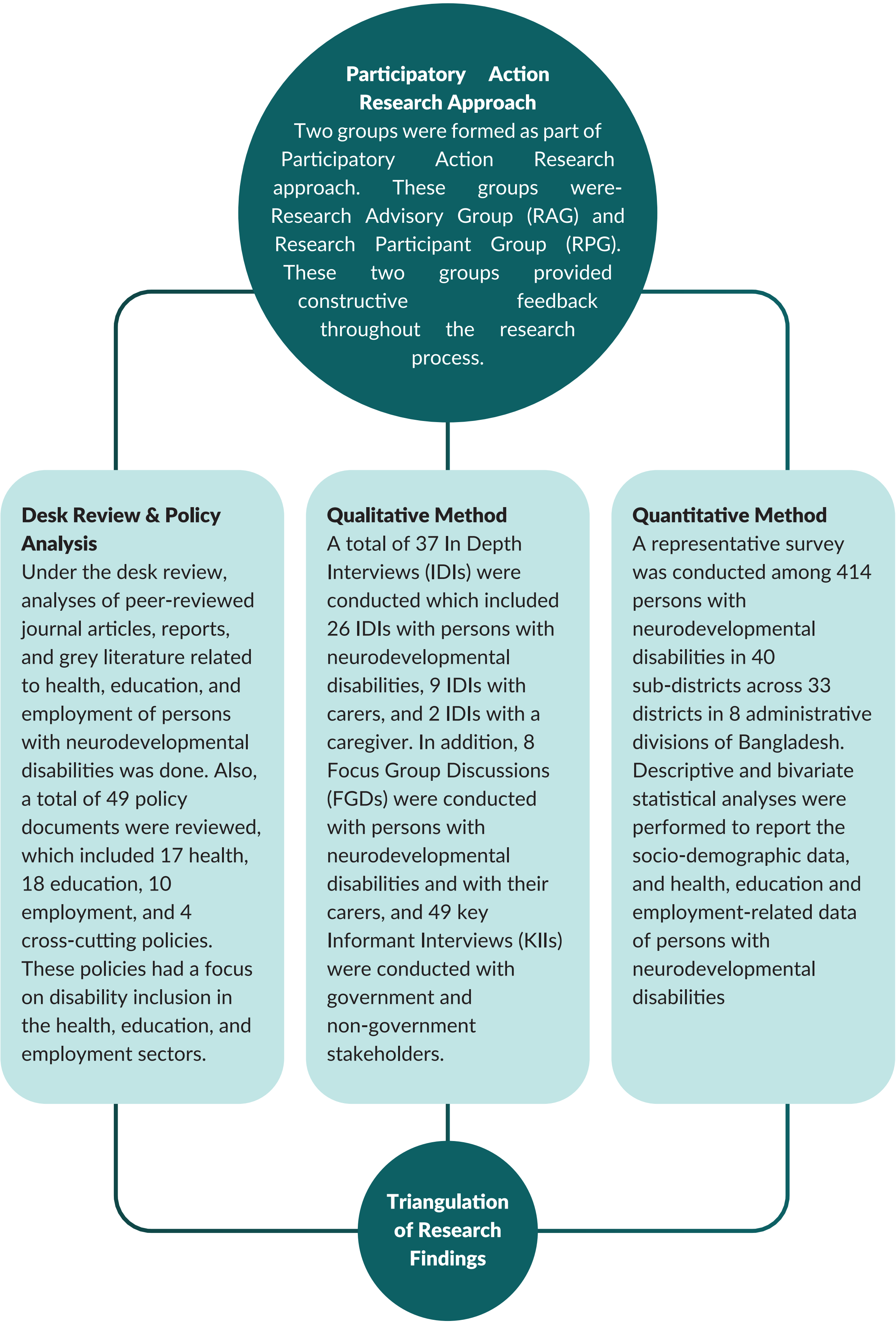
- To assess the health, education, and employment status of persons with neurodevelopmental disabilities.
- To examine the barriers that persons with neurodevelopmental disabilities face in accessing health services, education, training, and employment opportunities.
- To explore how the government is addressing the needs of persons with neurodevelopmental disabilities through various policy promises relevant to disability inclusion in health, education, and employment sector.
- To recommend actionable steps for the government to enhance the health, well-being, and socio-economic inclusion of persons with neurodevelopmental disabilities.

Methodology

The study employed a Participatory Action Research (PAR) approach, which ensures meaningful participation of persons with neurodevelopmental disabilities, their carers, and relevant government and non-government stakeholders in the research. According to the PAR approach we followed, two groups were formed – the Research Advisory Group (RAG) and the Research Participant Group (RPG). Members of these two groups provided continuous feedback on the study methodology, tools, analytical approach, dissemination, and uptake of research findings.

We conducted a desk review, quantitative representative survey among 414 persons with neurodevelopmental disabilities, a total of 94 qualitative interviews with selected persons with neurodevelopmental disabilities, carers & caregivers, government and non-government stakeholders, and a total of 49 policy document analysis.

The desk review synthesised available evidence by analysing peer-reviewed journal articles, grey literature, and scientific reports that focused on the status of persons with neurodevelopmental disabilities regarding health, education, and employment in Bangladesh.



Participatory Action Research Approach

Two groups were formed as part of Participatory Action Research approach. These groups were- Research Advisory Group (RAG) and Research Participant Group (RPG). These two groups provided constructive feedback throughout the research process.

Desk Review & Policy Analysis

Under the desk review, analyses of peer-reviewed journal articles, reports, and grey literature related to health, education, and employment of persons with neurodevelopmental disabilities was done. Also, a total of 49 policy documents were reviewed, which included 17 health, 18 education, 10 employment, and 4 cross-cutting policies. These policies had a focus on disability inclusion in the health, education, and employment sectors.

Qualitative Method

A total of 37 In Depth Interviews (IDIs) were conducted which included 26 IDIs with persons with neurodevelopmental disabilities, 9 IDIs with carers, and 2 IDIs with a caregiver. In addition, 8 Focus Group Discussions (FGDs) were conducted with persons with neurodevelopmental disabilities and with their carers, and 49 key Informant Interviews (KIIs) were conducted with government and non-government stakeholders.

Quantitative Method

A representative survey was conducted among 414 persons with neurodevelopmental disabilities in 40 sub-districts across 33 districts in 8 administrative divisions of Bangladesh. Descriptive and bivariate statistical analyses were performed to report the socio-demographic data, and health, education and employment-related data of persons with neurodevelopmental disabilities

Triangulation of Research Findings

A representative survey was carried out among 414 persons with neurodevelopmental disabilities, covering 40 sub-districts across 33 districts within the eight administrative divisions of Bangladesh. The primary objective of the survey was to produce quantitative estimates regarding the current status of persons with neurodevelopmental disabilities concerning their health and well-being, education, and employment status in Bangladesh. The survey questionnaire was designed to identify the persons with neurodevelopmental disabilities' current status of health and disability along with the coexisting health conditions, health service utilization, and barriers in accessing health services. The survey also examined the persons with neurodevelopmental disabilities' educational status, the special support they receive, available education facilities, and reasons for inaccessibility to education. In addition, the survey tool examined the persons with neurodevelopmental disabilities employment status, their barriers to accessing job, and the support available for employment. To understand the status of the well-being of persons with neurodevelopmental disabilities, the World Health Organization Quality of Life Brief (WHOQOL BREF) questionnaire was used.

Descriptive and bivariate statistical analyses were performed to analyse quantitative data, and graphs and tables were used to present the findings from the quantitative data. Appropriate sampling weight was applied when producing estimates for different indicators related to health, education, employment sectors. STATA -17 was used to perform statistical analyses.

Total 94 qualitative interviews were conducted with selected persons with neurodevelopmental disabilities, their carers, as well as key policymakers and program managers. The primary aim of the IDIs, and FGDs was to explore, in detail, the perceptions, experiences, and viewpoints of persons with neurodevelopmental disabilities, as well as their carers and caregivers on the health, education, and employment situations of persons with neurodevelopmental disabilities. Another aim of the IDIs, and FGDs was to explore persons with neurodevelopmental disablities' service utilisation and expectations about the relevent services. The qualitative interviews further explored awareness on existing rights and policies neurodevelopmental disabilities. The main objective of the KIIs was to explore from the government and non-government stakeholders the initiatives undertaken by the government, non-governmental organizations (NGOs), and Disabled People's Organizations (DPOs), the usefulness of these interventions/services, gaps in interventions/services and how to address those gaps. The stakeholders also shared their perspectives on the policies that aim to improve the overall health, well-being, and socio-economic conditions of persons with neurodevelopmental disabilities.

The qualitative findings supplemented quantitative findings where necessary and added additional insights where quantitative findings were deemed sparse or absent.

In the policy analysis component, to gain a comprehensive understanding of Bangladesh's national commitment to disability inclusion from January 1, 1972, to the present date, the content of 48 policy documents was meticulously reviewed for all relevant terms and statements on disability and the subject matters (health, education and employment). This analysis encompassed 15 health-related policies, strategies, and action plans; 18 education-related legislative documents; 10 employment acts, policies, strategies, and action plans; and 4 cross-cutting acts, including the national constitution of Bangladesh. Triangulation of quantitative survey findings, qualitative interviews and policy analysis were done to draw a comprehensive conclusion on the research topic.

Findings

Socio-demographic Characteristics of Study Participants

Quantitative findings (figure 1) revealed that among 414 survey participants, 40.09% were female and 59.91% were male. The majority were aged between 11–30 years (57.87%), and identified as Muslim (87.43%). Among 278 survey participants who were aged 18 and above, 91 (35.85%) had been married at some point in their lifetime. In addition, of all the servey participants 11.44% were from urban area and 88.66% from rural area.

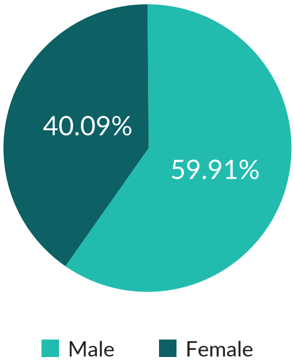


Figure 1 Distribution of Survey Participants by Gender

qualitative interviews, comprising 26 persons with neurodevelopmental disabilities, 9 carers and 2 caregiver, revealed similar demographic patterns of urban residence; among the 26 persons with neurodevelopmental disabilities, 14 were male and 12 females, spanning ages 6–60 years, while the 2 male and 9 female carers and caregiver ranged from 21–60 years. Additionally, 49 key informants—mostly male (28) and aged 31–40 years— completed graduate and postgraduate degrees, representing government, and NGOs.

In addition, 8 FGDs involved 55 participants, where 49 participants were carers and 6 were persons with neurodevelopmental disabilities. Among the 49 carers, 35 were women.

Health Status of Persons with Neurodevelopmental Disabilities

The survey findings (table 1) revealed that among the 414 participants, more than one-third (33.23%) had an intellectual disability, making it the most common disability type. Autism spectrum disorder followed closely, with 28.42% of participants reported about this conditions. Down syndrome was the least represented, with 10.35% of participants reporting this condition. Table 1 illustrates the distribution of disability types among the survey participants.

Table 1 Distribution of Survey Participants Based on disability type

Types of neurodevelmental disabilities	Frequency (n)	Weighted Percentage (%)
Autism spectrum disorder	117	28.42
Intellectual disability	139	33.23
Cerebral palsy	118	28.42
Down syndrome	40	10.35
Total	**414**	**100**

Functional difficulties among the study participants

The survey findings (table 2) revealed several key functional difficulties based on types of neurodevelopmental disabilities. Gross motor challenges were most common among participants with cerebral palsy (83.90%). Fine motor difficulties were highest among participants with cerebral palsy (77.12%). Difficulties in vision was less common across all groups. Hearing difficulties were most prevalent among participants with intellectual disability (20.86%). Speech difficulties were most prevalent among participants with cerebral palsy (76.27%). Social communication difficulties were prominent in participants with autism spectrum disorder (63.25%).

Table 2 Functional Difficulties of Survey Participants Based on Their Disability Type.

Functional difficulties experienced by persons with neurodevelopmental disabilites	**Autism Spectrum Disorder, n (%)***	**Intellectual Disability, n (%)***	**Cerebral Palsy, n (%)***	**Down Syndrome, n (%)***
Difficulty in gross motor functions (walking, climbing stairs)	53 (45.30%)	39 (28.06%)	99 (83.90%)	9 (22.90%)
Difficulty in fine motor functions (buttoning, sewing, writing, holding a pencil, combing hair, etc.)	62(52.99%)	53(38.13%)	91(77.12%)	19(47.50%)
Difficulty in vision	7 (5.98%)	14 (10.07%)	9 (7.63%)	6 (15.00%)
Difficulty in hearing	17 (14.53%)	29 (20.86%)	12 (10.17%)	7 (17.50%)
Difficulty speaking	80 (68.38%)	73 (52.52%)	90 (76.27%)	26 (65.00%)
Difficulty in intellectual skills	96 (82.05%)	121(87.05%)	72 (61.02%)	26 (65.00%)
Difficulty in communication with others	74 (63.25%)	69 (49.64%)	58 (49.15%)	23 (57.50%)

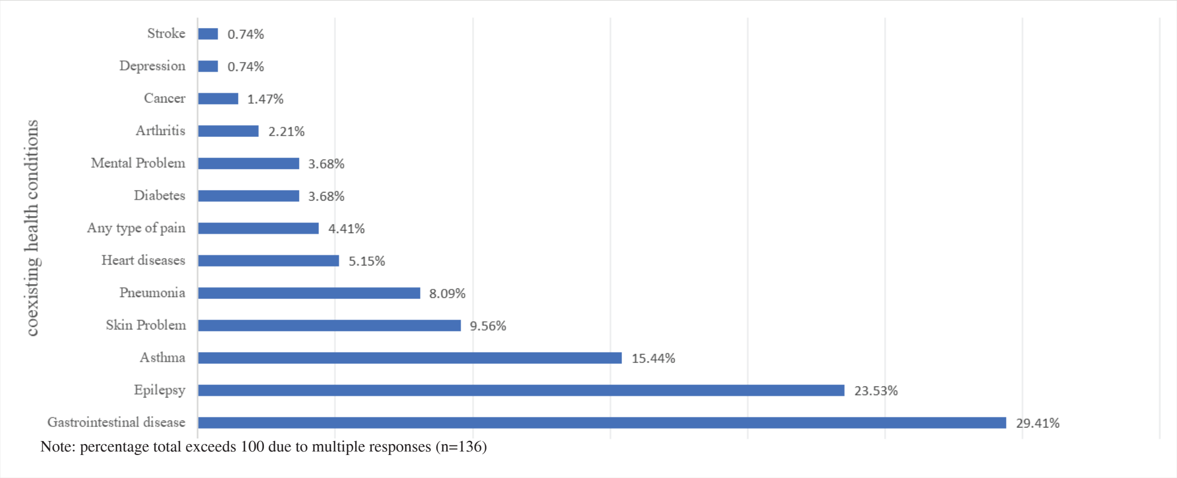
*Note: percentage total exceeds 100 due to multiple responses.

The qualitative interviews revealed several challenges regarding the identification and management of disabilities in healthcare settings. One prominent issue identified was the lack of specialised training among healthcare professionals responsible for assessing disability type. Doctors reported relying heavily on their general medical knowledge and professional experience, without specific guidelines or training on how to assess the type and severity of disabilities.

> *"We have not received any specialised training or identification guidelines. When a disabled person comes to the Social Welfare office, we are called for further assessment. We assess the types and levels according to their physical outlooks".*
> -Medical Officer, Kurigram, KII

Coexisting health conditions among survey participants

The survey findings (figure 2) showed that more than two-thirds of the participants (67.15%) reported no coexisting health conditions. In contrast, 32.85% of the participants reported having coexisting health conditions other than disabilities. Among the survey participants, who reported coexisting health conditions, the most common coexisting health conditions were gastrointestinal disease (29.41%), followed by epilepsy (23.53%) and asthma (15.44%). Other health issues included skin problems (9.56%), pneumonia (8.09%), and heart disease (5.15%).



Note: percentage total exceeds 100 due to multiple responses (n=136)

Figure 2 Coexisting Health Conditions Among Survey Participants

The qualitative findings indicated that persons with neurodevelopmental disabilities often face a range of additional health issues along with the disability such as fever, arthritis, headache, and general weakness. Many study participants rely heavily on family members for support in managing these health challenges.

> *"Sometimes I feel pain in my head, in the middle. I also get a fever and cold occasionally. Then my grandmother gives me medicine, and my grandfather gets the medicine for me".*
> -A 8-year-old boy with autism, Rajshahi, IDI

The data also highlighted the substantial caregiving burden placed on family members and the complex health needs of persons with neurodevelopmental disabilities.

> *"I have to do everything for her, and it makes me feel sick, both physically and mentally. I worry a lot about her future, especially what will happen to her if I pass away. I can't figure out how she'll be cared for in the future".*
> -A mother of a 30-year-old woman with cerebral palsy, Rajshahi, IDI

Health service utilisation among survey participants

Quantitative findings (Table 3) show that, of the 414 participants, 73 sought health-care services for co-existing health conditions. Of these 73 persons with neurodevelopmental disabilities, 18 had autism spectrum disorder; 61.11 % of this subgroup used regular government facilities and 50.86 % relied on non-government health-care services. Likewise, 23 had intellectual disabilities, with 60.87 % using government services and 60.62 % relying on non-government providers. Similarly, among the 21 participants with cerebral palsy, 57.14 % used government health services and 66.68 % accessed non-government services. In-addition, 11 had Down syndrome; 72.73 % of this subgroup used government health-care services and 57.57 % used non-government services.

Table 3 Utilisation of Healthcare Services By Survey Participants Based on Disability Types.

Types of neurodevelmental disabilities	Government health service, n (%)*	Non-government health service, n (%)*	Total
Autism spectrum disorder	11 (61.11%)	10 (50.86%)	18 (14.97%)
Intellectual disability	14 (60.87%)	16 (60.62%)	23 (16.75%)
Cerebral palsy	12 (57.14%)	13 (66.68%)	21 (17.19%)
Down syndrome	8 (72.73%)	6 (57.57%)	11 (27.49%)

*Note: Percentage total exceeds due to multiple responses

The qualitative findings revealed that economic burden of healthcare expenditure resulting from limited income of the families of persons with neurodevelopmental disabilities was significant, with many study participants' family relying on low-cost government healthcare services. One participant highlighted the struggle to access necessary medication, emphasising the difficulty in securing consistent medical supplies in public health facilities.

> *"We are poor. So we go to the government hospital because they have lowcost services. But most of the time we have to buy medicine from outside. The hospital has very few medicines available. When we ask, they said they don't have enough supply."*
> -A 32 years old woman with intellectual disability, Pabna, IDI

Another study participant highlighted that in rural areas, long travel distances, and poor road conditions created significant barriers to healthcare access.

> *"I have to travel far to reach a government hospital because there isn't any hospital nearby... The roads are muddy and broken... with my weak waist and legs, it's very hard to make a long trip (to go any hospital). So, I don't go for (any) treatment often".*
> -A 35-year-old woman with cerebral palsy, Feni, IDI.

Participants also reported concerns about the quality of care, including short consultation time and negative attitude from healthcare providers, such as rude behaviour or lack of respect. These findings emphasise the need for communication training for healthcare providers in a disability inclusive way, to ensure equitable access and care for persons with neurodevelopmental disabilities.

> *"I went to the hospital, but the doctor's behaviour was not good... He spoke to me harshly... maybe he was busy, but they shouldn't talk like that...I felt hopeless."*
> -A 24-years-old man with cerebral palsy, Jashore, IDI

Utilisation of assistive device among survey participants

The survey showed that out of 414 participants, only 11.11% used assistive devices, including spectacles, hearing aids, walking sticks, wheelchairs, and prosthetic devices.

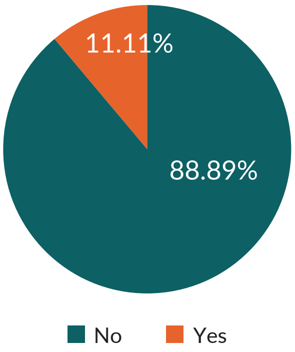


Figure 3 Distribution of Assistive Device Users

The qualitative findings revealed that participants with neurodevelopmental disabilities, particularly those with cerebral palsy used assistive devices for managing their daily life functional challenges.

> *"I have problems with my right side. I can see very little with my right eye, so I need to wear eyeglasses regularly. I also have issues with my right leg, as it feels weaker and has low strength… but I don't have anything to support my leg."*
> -A 24-year-old person with cerebral palsy, Sylhet, IDI

Status of health-related quality of life among survey participants

The findings from the WHOQOL-BREF total score suggested that persons with Down syndrome had the best overall health-related quality of life (total score 63.1%) than the any other groups when comparing the WHOQOL-BREF data among survey participants, it was found that persons with intellectual disabilities scored the lowest, with a total score of 58.0%. This indicates that persons with intellectual disabilities were more likely to experience overall poor health-related quality of life than any other groups.

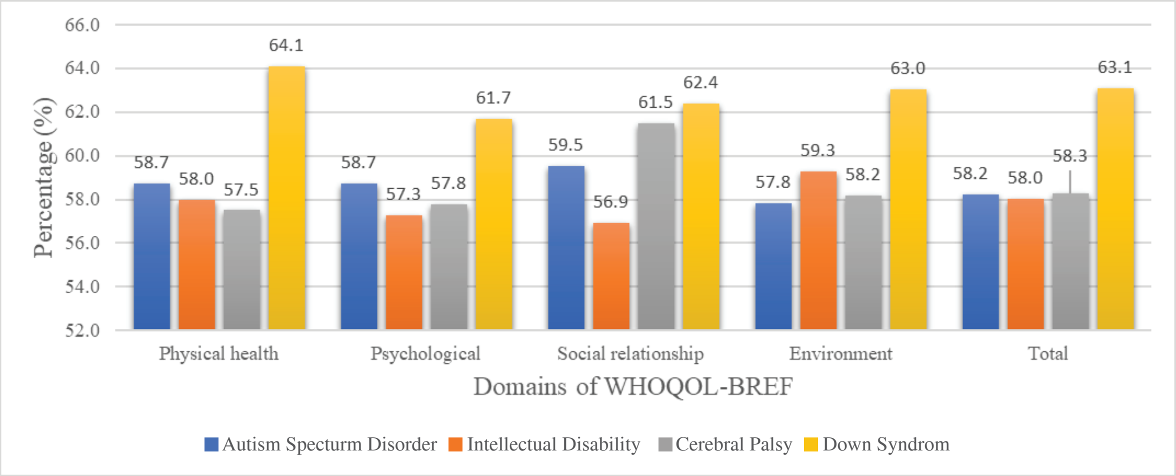


Figure 4 Status of health-related quality of life among Persons with Neurodevelopmental Disabilities

The qualitative findings highlight the significant mental, and emotional challenges faced by most of the persons with neurodevelopmental disabilites, who rely on their family members for emotional support, with some engaging in coping strategies like staying busy, or avoiding social stress. Often time they seek service at the last moment when healthcare professionals do not have much option to address the conditions.

> *"Many families, particularly those residing in rural areas, have limited awareness (on disability and mental health)... especially when the level of disability is mild... they seldom seek our help. When they do, it is often after the issue has become more complicated".*
> -Psychiatrist, Rajshahi Medical College, KII

To address the healthcare needs of persons with disabilities with a view to promoting disability inclusive healthcare for persons with disabilities, the government of Bangladesh is currently implementing several policies. The key policies include the National Health Policy 2011 (NHP 2011), the National Action Plan on Disability 2019 (NAPD 2019), and the National Strategic Plan for Neurodevelopmental Disorders 2016–2030 (NSPND 2016–2030). Key commitments of these policies include ensuring access to highest standard of healthcare services, on the basis of availability in existing healthcare facilities, ensuring appropriate rehabilitation services as needed, promoting prevention, early diagnosis, and lifelong management of all 12 disability types through family-centred, community-based, and multidisciplinary approach. However, there are gaps in implementation of these policy commitments. Inadequate infrastructure, lack of skilled workforce, and medical equipment are key factors that hamper disability inclusive healthcare services in the health sector.

Educational Status of Persons with Neurodevelopmental Disabilities

Quantitative survey revealed that only 157 participants (37.12%) had ever been enrolled in school at any point in their lifetime, with most reaching only preschool or primary levels.

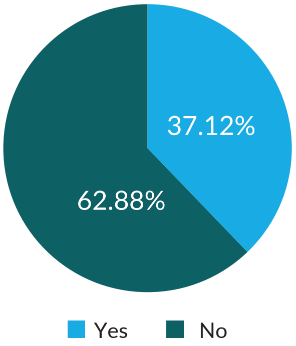


Figure 5 Participation in Education by Survey Participants

Among those enrolled, 60.89% were male and 39.11% were female. A majority (68.78%) attended mainstream schools that lacked specialised support.

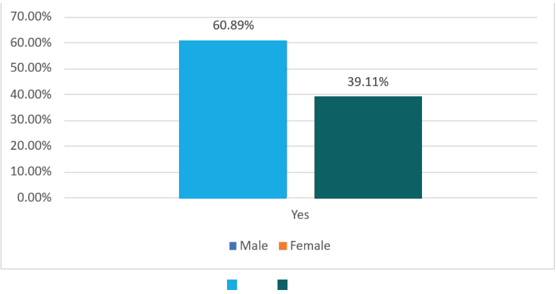


Figure 6 Participation in Education among Survey Participants Based on Their Gender Types

The following (table 4) showed the types of educational institutions attended by the survey participants. Most (68.78%) attended formal schools and madrasas. A smaller proportion (19.74%) attended special schools. Only 3.18% attended integrated schools that included both students with neurodevelopmental disabilities and their non-disabled counterparts,

Table 4 Different Types of Educational Institutions Attended by Survey Participants

Types of educational institutions	**Frequency, n (%)**
Formal schools or madrasas	108 (68.78%)
Schools for persons with disabilities	31 (19.74%)
Integrated school	5 (3.18%)
Non-formal schools	11 (7%)
Vocational	2 (1.27%)
Total	**157**

The qualitative study revealed that nearly half of the participants (13 out of 26) participated in schools. They attended different types of institutions, such as formal schools 6 out of 13, Madrasas 3 out of 13, vocational schools 1 out of 13, and special schools for children with disabilities 3 out of 13. Major barriers to accessing education included inadequate disability-friendly infrastructure, lack of support from peers, teachers, and staff, and a limited number of special schools, especially in rural areas. Financial struggles also prevented rural participants from accessing education.

Survey findings further illustrated that among the 157 participants who attended education, only 8.71% reported the availability of a special education plan at their school. Also, only 5.23% out of 157 survey participants reported availability of therapeutic rehabilitation support in their schools.

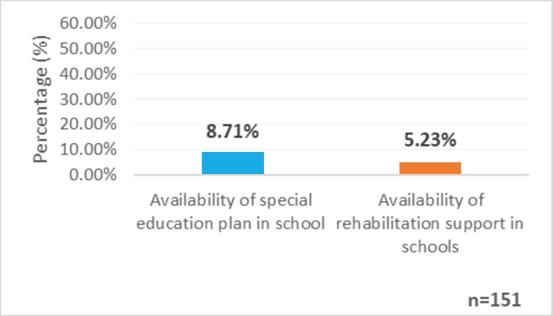


Figure 7 Availability of Inclusive Educational Support Services in Schools

Financial constraints acted as a major barrier, preventing families from sending their children to urban-based special schools. Similarly, caregivers also mentioned inadequate number of special schools in their communities as a barrier to send their children in education. The lack of government-funded special education schools exacerbates the problem, leaving poor families with limited options and adding financial strain. In contrast, participants from urban areas had better access to resources and special schools with more supportive administrations. These findings underscore the urgent need for accessible, disability-inclusive education, particularly in rural areas.

> *In our area, there is no school for persons with disabilities. The teachers at the local primary school do not provide adequate support to us... so we are unable to continue our education... It would be very helpful if a school for disabled students could be established here.*
> -A 24-year-old woman with autism, class 3 passed, Pabna, IDI

In addition, a common concern among participants regarding the high dropout rate of children with neurodevelopmental disabilities was discrimination in formal school settings with children often facing exclusion or attitudinal barriers from both school staff and peers. Several participants shared personal experiences of bullying and physical abuse, which led to emotional distress and ultimately dropping out of school.

> *None of my classmates were ready to talk or play with me...in my school days. They used to bully me calling me ' Langra'. It affected me negatively. I used to feel hopeless.*
> -A 24-year-old man with cerebral palsy, diploma graduate, Jashore, IDI

Our policy analysis reveals that, to increase educational access for persons with disabilities, including those with neurodevelopmental disabilities, the government of Bangladesh is currently implementing the National Education Policy 2010 (NEP 2010), the Integrated Special Education Policy 2019 (ISEP 2019), and the National Action Plan on Disability 2019 (NAPD 2019). Key policy commitments include ensuring physically accessible learning environments, providing specialised support, implementing modified admission processes, adapting and roling out inclusive curricula. But, along with stigma and high student-teacher ratios, implementation gaps persist from lack of specialised support, therapeutic rehabilitation, and assistive technology in class-room environments, including training on inclusive teaching and learning methodologies.

Employment Status of Persons with Neurodevelopmental Disabilities

Employment data were collected from survey participants who were equal or above 18 years old. It was revealed that 278 participants were aged 18 and above. Among those 278 study participants, only 16.48% reported that they were engaged in any type of work during their lifetime.

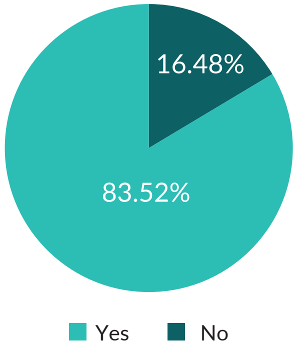
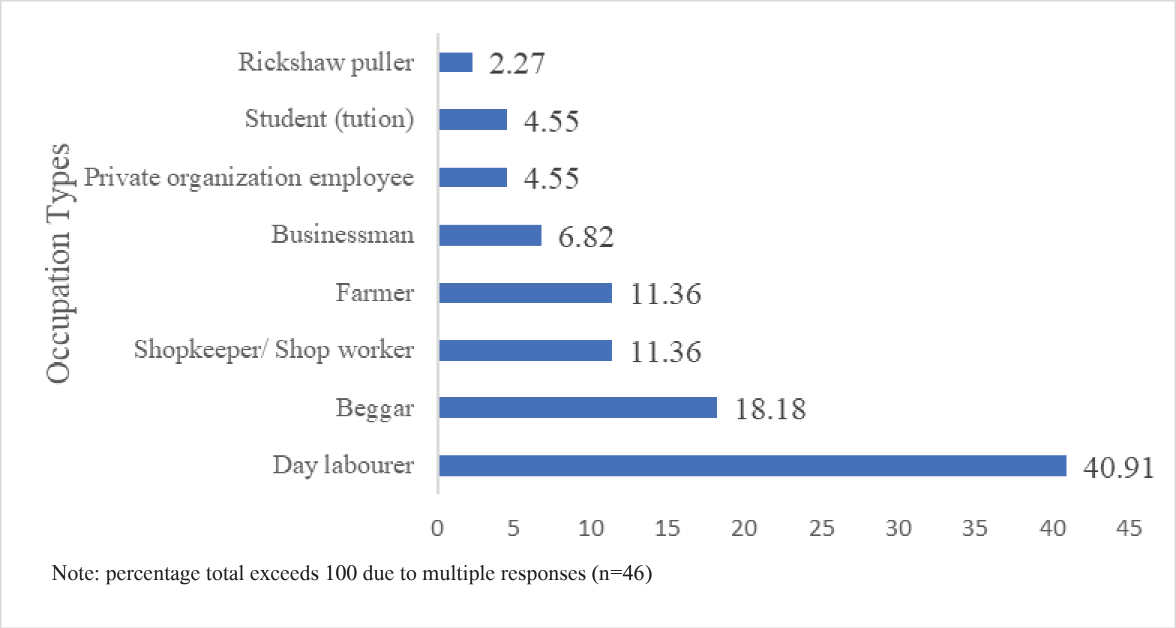


Figure 8 Distribution of Survey Participants By Their Occupation Type.

Employment status was significantly associated with gender ($p < 0.001$); among those employed, 88.71% were male, and 11.29% were female. The most common occupation among participants was day labour (40.91%), followed by begging (18.18%). Notably, 94% of non-working adults with neurodevelopmental disabilities cited disability as the primary barrier to employment. Other contributing factors included low self-esteem (22.63%) and environmental barriers (18.37%).



Note: percentage total exceeds 100 due to multiple responses (n=46)

Figure 9 Distribution of Occupation Types Among Survey Participants

Qualitative findings explain that employment opportunities for persons with neurodevelopmental disabilities were very limited, and most were involved in informal work. Several factors contributed to their exclusion from formal employment, including the severity of their disabilities, lack of family, emotional, and financial support, low levels of education and technical skills, and limited support from employers.

> *He operates a van... When he wonts... We married him off. Hence, he now has a family. But he doesn't understand the concept of work to sustain his household...He doesn't earn much. It's around 150-200 taka daily.*
> -Mother of a 30-year-old man, Rajshahi, IDI

Qualitative findings also revealed that many persons with neurodevelopmental disabilities faced discrimination in the workplace such as being paid less or experiencing verbal and physical abuse. Although some skill development programmes were available, they were few in number and often not designed to meet the specific needs of persons with neurodevelopmental disabilities. Physical barriers and the absence of appropriate learning materials also restricted their participation. Even those who had some education often remained unemployed due to limited social networks and negative attitudes from employers.

> *If someone works in another person's place, they are given wages. But he doesn't get paid when he does other people's work…. That means he does a lot of people's work but doesn't get paid.*
> -Mother of 45-year-old man, intellectual disability, Jashore, IDI

Our policy analysis reveals that, to increase employment opportunities for persons with disabilities, including those with neurodevelopmental disabilities, the government of Bangladesh is currently implementing the National Skills Development Policy 2011 (NSDP 2011), and the National Action Plan on Disability 2019 (NAPD 2019). Key commitments of these policies include ensuring persons with disabilities access to technical and vocational education, and training institutions, linking vocational training to the paid jobs, enforcing public-service disability quota in all kinds of government jobs and employment. Lack of accessibility in workplace infrastructures, gaps in communication between employers and candidates, and unfulfillment of public service job quota rules for persons with disabilities are key barriers in implementing aforementioned policy commitments.

Recommendations

We received the following recommendations from study participants and other relevant stakeholders on how to enhance access to healthcare, education, and employment oppotunitiesfor persons with neurodevelopmental disabilities in Bangladesh.

Recommendations for Improving Access to Healthcare for Persons with Neurodevelopmental Disabilities:

- Study participants and key informants recommended that the infrastructure of government healthcare facilities, such as hospital rooms, medical equipment, ramps, washrooms, lifts etc should be made disability-friendly.
- Carers of persons with neurodevelopmental disabilities and key informants urged to ensure longer consultations, lower laboratory fees, reliable supplies of essential medicines, controlled private-sector costs, more therapy personnel, and adequate assistive devices in the health facilities.
- Key informants recommended nationwide, standardised disability training for all types of healthcare workers; they also proposed introducing disability concepts across school, college, and medical curricula.
- Key informants further advised introducing globally standardised disease and disability classification systems in the health sector policies, adopted by different ministries, to maintain a comprehensive and uniform health record of persons with disabilities across different ministries.

- Key informants stressed stronger inter-ministerial coordination, continuous expert involvement, and firm political commitment to implement health-sector interventions for persons with neurodevelopmental disabilities.

Recommendations for Improving Access to Education for Persons with Neurodevelopmental Disabilities:

- Study participants and key informants recommended that the infrastructure of government education facilities, such as classrooms, chairs, ramps, washrooms, and lifts etc should be made disability-friendly.
- Study participants and key informants highlighted the need for attitude change regarding disability related stigma and perceptions among families, communities, and educational personnel through training and awareness campaigns to reduce stigma and increase parental and community engagement.
- Key informants further proposed incorporating flexible, multiple modes of instruction, assessment, and expression (e.g., visual, auditory, tactile) into inclusive and/or special education curricula. One such model is in the phoenix school run by Apasen International in sylhet division. A key feature of the phoenix school's teaching–learning model is the systematic categorisation of learners according to their receptive learning capacity, aligned with sensory and motor function, rather than the severity-based classification used in current national disability legislation that follows the medical model of disability.
- Key informants recommended that a unified, nationally standardised curriculum, flexible enough for learners with neurodevelopmental disabilities, should be utilised by all relevant educational institutions.
- Key informants and stakeholders further underscored embedding inclusive-education training within regular teacher-development programmes, rather than offering it separately so that all educators can address diverse learning needs of children with disabilities.

Recommendations for Improving Access to Employment for Persons with Neurodevelopmental Disabilities:

- Study participants and key informants recommended that the infrastructure of government training facilities, such as training rooms, equipment, tables, chairs, ramps, washrooms, lifts etc. should be made disability-friendly.
- Persons with neurodevelopmental disabilities their carers, and key informants recommended that awareness programs on employment rights and facilities of persons with neurodevelopmental disabilities within the existing policy framework should be arranged regularly in the community settings, involving carers of persons with neurodevelopmental disabilities where necessary. Persons with neurodevelopmental disabilities, their carers, and key informants emphasized that disability-friendly accommodation needs to be ensured at training facilities.
- A proper policy framework and recruitment pathway are necessary to ensure job placement after successful completion of the training program.
- Persons with neurodevelopmental disabilities and key informants stressed that training programs should be designed to be more inclusive by ensuring flexible time schedules and durations for equal access to all types of persons with disabilities, to develop their skills.

Conclusion

In conclusion, this study provides a detailed analysis of the challenges faced by persons with neurodevelopmental disabilities in Bangladesh, particularly in healthcare, education, and employment. In healthcare, barriers such as insufficient skilled manpower, inadequate infrastructure, and financial constraints restrict the access to essential services, exacerbating both physical and mental health issues among persons with neurodevelopmental disabilities. In education, the lack of special schools, untrained teachers, and weak policy implementation prevent children with neurodevelopmental disabilities from accessing quality education, contributing to high dropout rates, and educational deficits. Employment opportunities are similarly limited, with stigma, a lack of accommodations, and gender-based discrimination further excluding persons with neurodevelopmental disabilities from the workforce. While some initiatives have been undertaken, their impact remains limited. To address these challenges, the study calls for a comprehensive, rights-based approach that strengthens policy enforcement, promotes cross-sector collaboration, and ensures community engagement. Only through targeted investments in healthcare, education, and employment can the socio-economic exclusion of persons with neurodevelopmental disabilities be effectively addressed, in alignment with both national and international commitments to inclusivity.

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