



**ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH
SCIENCES, SCHOOL OF MEDICINE, DEPARTMENT OF
PSYCHIATRY**

**Assessment of School Enrollment and associated factors among
children and Adolescents with Neurodevelopmental disorders on
follow up at TASH, ZMH, Y12HMC and AMSH. Addis Ababa,
Ethiopia: A cross sectional study**

Principal Investigator: Simret Gebre

March, 2024(G.C)

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Principal Investigator: Simret Gebre, MD, 3rd Year Psychiatry Resident

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March, 2024 (G.C)

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Acronyms

AMSH- St. Amanuel Mental Specialized Hospital

ASD- Autism Spectrum Disorder

CI- Confidence interval

DSM V- Diagnostic and statistical manual of mental disorders, 5th Edition.

GDD- Global Developmental Delay

ID- Intellectual Disability

NDD- Neurodevelopmental disorder

PI- Principal investigator

SPSS- Statistical package for the social sciences

TASH- Tikur Anbessa Specialized Hospital

UNICEF- United Nation Children's Fund

WHO- World Health Organization

Y12HMC- Yekatit 12 Hospital Medical College

ZMH-Zewditu Memorial Hospital

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Abstract

Introduction: Neurodevelopment in children is a dynamic inter-relationship between various components including genetic, brain, cognitive, emotional and behavioral processes throughout the developmental lifespan. Neurodevelopmental diseases and disabilities can be caused by a significant and ongoing interruption to this dynamic process caused by environmental and genetic risk. Impairments in personal, social, academic, or occupational functioning are hallmarks of these disorders. When these children reach school age, they are at greater risk of having special educational needs and experiencing difficulties in their learning or socialization at school. The number of children with disability attending school is extremely low in developing nations, and the overall enrollment rate is frequently under 10% in those nations where statistics are available. Although some research in our country have attempted to study this, there is a shortage of information specifically related to neurodevelopmental diseases.

Objective: To determine the current level of enrolment and identify factors that may affect the level of enrolment in children with neurodevelopmental disorders on follow up at TASH, AMSH, ZMH and Y12HMC.

Methods: A cross-sectional facility-based study was conducted among a sample of 290 caregivers of children with neurodevelopmental disorders attending care at TASH, AMSH, ZMH, and Y12HMC using consecutive sampling. Data was collected using structured tools to assess sociodemographic factors and the associated factors.

Result: The current rate of school enrollment among children with NDD is 40.7 %. Residence in Addis Ababa (AOR=3.398; 95% CI =1.205,9.573), being Female (AOR=0.39; 95% CI =0.158, 0.96), severity of illness (AOR=0.104; 95% CI =0.047,0.229) and availability of schools (AOR=7.812; 95% CI =3.012,20) were found to have significant association with school enrolment.

Conclusion: The enrollment of children with Neurodevelopmental Disorders (NDD) in schools is notably lower compared to children with other forms of disability or those without any disability. Moreover, the children with NDD who do attend school often encounter various challenges and are not receiving the quality of education they should get.

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Introduction

1.1. Background of the study

Neurodevelopment in children is a dynamic inter-relationship between various components including genetic, brain, cognitive, emotional and behavioral processes throughout the developmental lifespan. Neurodevelopmental disorders and disabilities can be caused by a significant and ongoing interruption to this dynamic process caused by environmental and genetic risk. (Arora et al., 2018).

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), these disorders include intellectual disability, communication disorders, autism spectrum disorder, attention deficit hyperactivity disorder, specific learning disorders and motor disorders (Harris, 2014).

Approximately 1–2% of the general population is affected by these disorders. (Blackmer & Feinstein, 2016) Although precise epidemiological data on some NDDs are lacking, It has been estimated that the prevalence of NDDs is higher in low- and middle-income countries (Francés et al., 2022).

Impairments in personal, social, academic, or occupational functioning are hallmarks of these disorders (Nowell et al., 2019). These functional limitations start to manifest in early development and ranges from specific limitations of learning or control of executive functions to global impairments of social skills and intelligence. These functional limitations have implications for the well-being of the child, the family, and society (Lamsal & Zwicker, 2017).

When these children reach school age, they are at greater risk of having special educational needs and experiencing difficulties in their learning or socialization at school. Depending on the type, severity, and frequency of the disorder, the symptoms and challenges linked to it can affect students' educational trajectories. Schools are requested to implement intervention programs created to prevent learning or adjustment issues in order to lessen or overcome these challenges (Nadeau et al., 2020).

Students who were labeled as disabled were frequently taught in separate classrooms, away from their peers who were not disabled, which may have lowered the likelihood that they would later be reintegrated into a general education classroom. The inclusion model was created as a result, placing disabled students in the least restrictive setting in an effort to reintegrate them into the general education population as soon as possible (Strogilos et al., 2023). Instead of being separated from their peers and being placed into a classroom comprised only of students with disabilities, currently it is recommended that students to be placed in general education classrooms, with certain supports for their individual needs provided separately (Ary, n.d.).

However, the number of disabled children attending school is extremely low in developing nations, and the overall enrollment rate is frequently under 10% in those nations where statistics are available. These disabled children's rights, particularly their right to an education, are grossly unmet. In developing nations, it is difficult for children with disabilities to receive an education because only 1-3% of them enroll in special schools and 10% enroll in regular schools, leaving the vast majority of such children completely out of the classroom (*The State of the World's Children 2007* | UNICEF, 2017.).

Numerous studies have looked for the causes of the low enrollment of disabled children in schools. Some of the reasons for the low enrollment are that the educational system is underprepared and that society fails to provide for children with special needs. Poverty and negative attitude are other factors that contribute to low enrollment (Geda et al., 2016).

The educational system also lacks sufficient numbers of qualified educators with special needs education training, adequate funding, and resources to deliver streamlined instruction, and their infrastructures are not appropriate for kids with disabilities. Another barrier is the school community's labeling, teasing, and bullying of students with disabilities (Geda et al., 2016).

1.2. Statement of the problem

The percentage of disabled children attending school is low. Numerous research looked into the causes of the poor enrollment of disabled children in schools. The reasons for the low enrollment in most set ups are that the educational system is underprepared to meet the needs of children with developmental disorder and that society fails to tailor for the special needs of these children (Geda et al., 2016).

Although some research in our country have attempted to study the percentage of children with disability in school and the challenges they face, there is a shortage of information specifically related to neurodevelopmental disorders. This would create a gap in identification of problem in the area.

1.3. Rationale

It is hoped that this research will be of a great importance to provide estimates of children who are enrolled to school currently. It will also provide insights into the challenges faced by the children and their families in providing education for children with neurodevelopmental disorders. Ultimately, the findings from this study can inform policy and practice at improving educational opportunities for children with neurodevelopmental disorder.

2. Research Questions

1. What is the current level of school enrollment for children with neurodevelopmental disorders?
2. What are the factors associated with school enrollment for children with neurodevelopmental disorders?
3. What are the barriers to school enrollment for children with neurodevelopmental disorders as perceived by caregivers?

3. Objectives of the study

3.1. General objective

- To determine the current level of enrolment and identify factors that may affect the level of enrolment in children with neurodevelopmental disorders on follow up at TASH, AMSH, ZMH and Y12HMC.

3.2. Specific objectives

- To investigate the school enrolment status for children with neurodevelopmental disorders on follow up at TASH, AMSH, ZMH and Y12HMC.
- To assess the factors that affect their enrolment and access to education in children with neurodevelopmental disorders.
- To identify the challenges that these children and families face in providing appropriate education.

4. Literature review

According to a recent UNICEF report, there are approximately 240 million disabled children worldwide. On most measures of a child's well-being, including access to education, children with disabilities are at a disadvantage compared to children without disabilities. Despite the general consensus that education is important, the report finds that children with developmental and other disabilities are more likely to be out of school (nina, 2021).

Among the various disabilities, Neurodevelopmental disorders can have a significant impact on children's academic performance and social interactions, leading to challenges in school participation (John et al., 2022). Various of literatures have tried to explore the level of school enrolment and the factors associated with school enrolment for children with neurodevelopmental disorder.

4.1 Level of enrolments

Children with NDDs often require special education service to meet their unique needs. Special educations can be provided thorough special school or through inclusion in regular class rooms with additional support (Ainscow & Haile-Giorgis, n.d.). Studies in many countries on level of enrolment to school in children with disability shows that it is lower than for children with no disability especially in low to middle income countries.

Children with disabilities are 49% more likely than children without disabilities to have never attended school, 47% more likely to have dropped out of elementary school, 33% more likely to have dropped out of lower secondary school, and 27% more likely to have dropped out of upper secondary school (nina, 2021).

In a recent article published in 2016, the education of children with disabilities in India and Pakistan was analyzed along with recent changes over the past 15 years. This article described that during the 2000s, India's primary enrollment of children with special needs significantly increased, rising from 566,921 in 2002-2003 to 2.35 million in 2012-2013. However, significant disparities in relation to gender and types of impairments are still clearly evident. It reveals that school enrollment for children with autism and cerebral palsy having the lowest representation in the number of children who are going to school (Singal, 2016).

Similar reflections can be seen when looking at Pakistan. Only 4% of the children of school age who have disabilities are enrolled in schools. Additionally, it also found out that young people with disabilities are also less likely than their peers without disabilities to attend school. More than 33% of the young people (15–30 years) were "never enrolled," compared to 26% of those without disabilities (Singal, 2016).

In another longitudinal study conducted in India, the study aimed to delve into the implementation and refinement of an early intervention (EI) program designed for children experiencing delayed development. This investigation involved a structured process of measurement, utilizing both qualitative and longitudinal quantitative data collection methods. This data encompassed various metrics such as program engagement rates, developmental progression, caregiver outcomes, and the school enrollment status of children participating in the EI program across periodic assessments labeled as T1 to T5. Accordingly, the study highlighted a positive trend in school enrollment over time, showing an increase from 69.8% at T1 to 84.7% at T5. This suggests a promising upward trajectory in enrollment rates among children involved in the EI program (Krishna et al., 2020).

In a household survey conducted across eight Sub-Saharan countries (DR Congo, Gambia, Ghana, Lesotho, Sierra Leone, Togo, Tunisia, Zimbabwe), the study encompassed a total sample size of 32,248 children. Among these, 29,218 (90.6%) were non-disabled children, while 3,026 (9.4%) were identified as disabled children. The findings of the study revealed a notable difference in school enrollment rates between disabled and non-disabled children. Particularly, children with disabilities, especially those classified with intellectual disabilities (ID) and multiple disabilities, exhibited significantly lower rates of school enrollment. The survey identified that 14% of young children with intellectual disabilities and 33% of those with multiple disabilities had never been enrolled in school (Zhang & Holden, 2022).

In a study done in Kenya in 2017 using two sources of household survey data, school enrolment and attendance patterns for children with disabilities were assessed. The evidence here also suggests lower school participation for children with disabilities which showed that about

21.85% of children with disability were out of school (only 78.15% were in school). Low enrolments were more pronounced in the early ages; before age 8 and about 30% of children with disabilities were out of school compared to about 10% of those without disabilities. Children with disabilities were also more likely to delay school enrolment (Moyi, 2017).

Similarly, there was a cross sectional community survey done in Eastern rural Ethiopia on School Enrolments among Children with Disability in 2016. According to this study, a total of 305 school aged children with disability were enrolled in this study. Of which 151 (49.5%) were currently at school which is much lower than for the level of enrolment for non-disabled children (Geda et al., 2016).

4.2 Factors associated with level of enrolment

According to the Kenya household survey done on School Enrolment and Attendance for Children with Disabilities in 2007, children with disabilities who reside in rural areas had lower levels of school participation. About 23% of rural children with disabilities reported they were out of school compared to about 18% of urban children with disabilities suggesting living in rural area was one factor associated with low enrolment level. The other factor identified was educational level of the parents. The more educated the head of household, the greater the access to school for children with disabilities. Lack of interest , failing classes repeatedly and illnesses were also mentioned as factors for low enrollment (Moyi, 2017).

In Kenya another study was done to assess Prediction of School Enrolment of Children with Intellectual Disabilities in 2010. 425 families of children with intellectual disability from 4 districts of Kenya were included. Similar to other studies demographic variables like child's gender, child's level of intellectual disability, and parents' level of education were found to affect level of enrolment of children with intellectual disability. In addition, it was found that the expectations of Kenyan parents about the social acceptance of their children and parents' beliefs about education of children with intellectual disabilities with intellectual disabilities played a very important role in their school enrollment (Mutua & Dimitrov, 2001).

In another study done in Nigeria to assess the knowledge about childhood autism and opinion among healthcare workers on availability of facilities and law caring for the needs and rights of

children with childhood autism and other developmental disorders, comparable results were seen. scenarios of unmet needs among parents of children with developmental disorders are also prevalent in Nigeria and other sub-Saharan African regions. Similar to other areas of social and medical needs , Education needs of these children were also not adequately meet (Bakare et al., 2009).

In Ethiopia, according to the study done in Eastern rural Ethiopia, Male children with disability and those from households with high wealth were found to have a better level of enrolment to school. In addition bullying was also identified as a contributing factor for children with disability to not attend school(Geda et al., 2016).

Another cross-sectional study was also done in all government primary schools that deliver formal education for students with disabilities in Dire Dawa in both urban and rural kebeles' of the Administration in 2014. The study was done to assess the level of enrollment and challenges of students with disability. All students with various forms of disabilities who are attending formal school in the Administration both in urban and rural schools are considered as the population of this study. With regard to the type of disability, according to this survey, 36.73% of students are physically impaired, 21.42 % of students are visually impaired and 24.48 % of students have hearing impairment which is followed by 11.22% of intellectual impairment and 6.12 % students with of other type impairments (Tadele & Gipo, 2017).

According to the findings of the study, the main challenges for students with disabilities were lack of public awareness about the needs of the students with disability, lack of individualization at the elementary and secondary levels, Negative Attitudes and Stereotypes, material problem and Problems within the Self /Self -esteem of Students with Disabilities (Tadele & Gipo, 2017).

Access to education was another important factor identified as a cause for low enrolment in all of the studies. In comparison, children with special needs in major urban areas have better opportunities of attending special schools. But Access to education for children with special needs in rural areas is still very low. For example, in a research visit to schools in Amhara region, it was learned that out of 98 primary schools, 6 high schools and 1 preparatory schools , no children with special needs were found and that there were no special classes for such children (Tefera et al., 2015).

Although these studies give insight to the level of the problem and the contributing factors, they were done in children who have disabilities of all kind. Data is still lacking to show the level of enrolments and challenges specifically for neurodevelopmental disorders. Thus, lacks to show the unique challenge that children with NDD might face that is different from other disabilities.

5. Methods

5.1 Study design

An institution based cross sectional study design was used among caregivers of children with neurodevelopmental disorder attending outpatient child and adolescent psychiatric clinics.

5.2 Study setting and period

The study was conducted in tertiary hospitals in Addis Ababa, Ethiopia. TASH, AMSH, ZMH, and Y12HMC were included.

Tikur Anbessa Specialized Hospital (TASH) was opened in 1972. In 1998, the TASH was transferred to the school and has since become a university teaching hospital. It has 200 doctors, 379 nurses and 115 other health professionals, and 950 permanent and contract administrative staff. (*Background of Tikur Anbessa Hospital | College of Health Sciences*, n.d.) Psychiatry outpatient service is one of the many services provided by the hospital. The psychiatry outpatient service has one child and adolescent clinic giving service for children with various developmental and mental disorders. The service is available for 4 days per week. 10 to 15 children and adolescents are seen each day by psychiatry residents and psychiatry specialists and subspecialists. In addition to psychiatry OPDs, Children with neurodevelopmental disorders are also seen at the pediatric neurology clinic in this hospital which was also includes in this study. The pediatrics neurology clinic works 5 days per week and provide care for about 10 to 15 children each day.

The other study area is Yekatit 12 Hospital Medical College (Y12HMC). It is one of the

hospitals run by the Addis Ababa City Administration Health Bureau. It has been providing general medical care to Addis Ababa and other cases that have been referred from several regional states of Ethiopia. A population of about 4 million individuals receives services from the hospital. It has 9 departments and 6 units and has 265 beds.(Mengistu et al., 2018) The hospital provides child and adolescent psychiatric outpatient services. The service is given 5 days per week and around 15 to 20 children and adolescents get service at the outpatient clinics.

Zewditu memorial hospital(ZMH) is located in Kirkos sub city, Addis Ababa, Ethiopia. The seventh day Adventist church established the hospital but it was nationalized in 1976 EC. (“Zewditu Hospital,” 2022)It provides both inpatient and outpatient services in different departments including psychiatry. The psychiatry service includes a child and adolescent outpatient clinic. The child and adolescent OPD was established in 2012 E.C. Since then, it is giving mental health care for children with NDDs and other common psychiatric conditions and support their caregivers. It gives service 4 days each week. 5 to 10 patients are seen each day in this clinic by psychiatry residents, psychiatry specialists and subspecialists.

Amanuel mental specialized hospital(AMSH) is the other study area. The hospital gives both inpatient and outpatient psychiatric services. It gives service for patients all over the country. It has a case load of more than 10,000 per month and most cases are severe mental illnesses.(Tesfaw et al., 2020) Child and adolescent clinic is among the outpatient psychiatric services. Approximately 5 to 10 children and adolescents will be seen daily by psychiatry residents and specialists. The service is provided 4 days per week.

The study period was from August 2023 to October 2023.

5.3 Study population

Source population were the children who come to the above hospitals on the study period and the study population were the children diagnosed with neurodevelopmental disorder. Among the neurodevelopmental disorders, this study mainly focuses on children with ASD, GDD and ID. These group of children were selected considering the greater level of impairment and difficulty in school associated with these disorders.

5.3.1 Inclusion criteria

- Children with a diagnosis of ASD, ID or GDD
- Seen or having follow-up in one of the child psychiatry clinics at TAH, AMSH, ZMH or Yekatit 12HMC
- Age between 4 and 18 (in Sept 2022)
- Came with a caregiver who can provide consent for the child to participate in the study

5.3.2 Exclusion criteria

- Child acutely disturbed and in need of emergency care
- Care giver didn't give consent
- Caregivers who are unable to converse in the language of the interview, Amharic or who are unable to communicate for any reasons,

5.4 Sample size determination and sampling procedure

The sample size was determined using the single population formula with the assumption of 78.15 % of prevalence from a previous study in Kenya (Moyi, 2017), 1.96 Z (standard normal distribution), 5 % margin of error, 95 % CI of certainty and 10% non-response. Based on this assumption the sample size was 290.

Participants who fulfill the inclusion criteria were enrolled using consecutive sampling technique until enough sample size was obtained.

5.5. Data collection

After attending child psychiatry clinics at the above hospitals, caregivers were asked for informed consent to take part in the study. Structured questioners were used to obtain information concerning socio-demographic characteristics of both caregivers and respective children, level of enrolment and associated factors. The medical records of the child of each participating caregiver were consulted to determine the primary diagnosis of the child, severity of disorder and type of intervention being provided.

Two data collectors from each site were given training in administration of assessment tools by the PI. In order to ensure data quality, the collected data was checked for completeness and clarity by the PI.

5.5.1 Data collection instruments

- **Socio- demographic characteristics of Caregivers**

Socio-demographic characteristics include age, gender, current residence, religion, marital status, educational status and current employment status of the respondents. (Appendix 3)

- **Socio-demographic characteristics of children**

Socio-demographic and clinical characteristics of children include age, gender, educational status, and type of school they attend. (Appendix 4)

- **Clinical characteristics of children**

This includes clinical diagnosis, severity of disability and type of intervention. (Appendix 5)

- **Assessment of perceived stigma**

Data concerning the perceived experience of stigma was obtained by a structured closed questioner developed for this particular study based on previous mental health studies in Ethiopia (Tilahun et al., 2016). (Appendix 7)

5.5.2 Study variables

The dependent variable for this study was the level of school enrolment. Sociodemographic factors, clinical characteristics like diagnosis and severity of illness, availability of schools and stigma were used as independent variables.

5.6. Data analysis

Data from the interviews was checked for completeness and consistency. Data analysis was done using SPSS Version 26. Frequency distributions were used to describe school enrollment status. Chi square test was used to check which variables has association with the dependent variable. Binomial logistic regression was used to assess factors strongly associated with school enrollment.

6. Ethical considerations

Ethical permission was obtained from the Department of Psychiatry, College of Health Sciences, Addis Ababa University and approval was sought from the respective hospitals.

The caregivers of the children with neurodevelopmental disorder were given information about the purpose of the study (Appendix 1). They were also provided with an informed written consent (Appendix 2). Assent was obtained from the children when applicable. Information gathered throughout the study was kept confidential at all level of the study. Participants' involvement was on voluntary basis only and it was informed that there will be no consequence on the care being provided for their children upon refusal to take part in the study.

7. Operational definition

- Special school-refers to a separate school specifically designed for students categorized as having special needs.
- Regular school with special classroom- all children, both with or without neurodevelopmental disorder placed in the same school but there will be a special class room for those with special needs.
- Regular classroom, partial inclusion - integration that takes place within school in which special need are given the opportunity to participate in a regular classroom for some sessions and have special classes for other sessions.
- Regular classroom, full inclusion school- all children, both with or without neurodevelopmental disorder placed in the same school and same class room.
- Good Attendance- the child has 1 or less days of absenteeism in a month.
- Moderate Attendance- the child has 2 days of absenteeism in a month.
- Poor Attendance- the child has more than 2 days of absenteeism in a month.

8. Results

8.1 Socio demographic characteristics of the parents.

The study involved outpatients seen in 4 tertiary hospitals in Addis Ababa, TASH, ZMH, AMSH and Yekatit 12 hospitals. The study included a total of 290 participants.

The vast majority of respondents, 244 (91.8%), were biological parents. Among these, 213 (73.6%) were married. Additionally, there were 38 (13.1%) who were single, 22 (7.6%) divorced, and 15 (5.2%) widowed. A substantial proportion of mothers, accounting for 226 (78.3%), had received some form of formal education, while 61 (21%) had not attended any educational program. Similarly, 251 (86.6 %) of fathers had received some level of formal education, with 12 (4.1 %) reporting no educational background. The monthly income of families ranged between 1000 and 40000 with a mean value of 9027.24. The study revealed that most participants had a moderate family size. Moreover, a significant portion of respondents, totaling 204 (70.1%), were from Addis Ababa, while 86 (29.6%) were from regions outside the city. Please see table 1.

Table 1: Socio demographic characteristics of caregivers.

	N	Percent (%)
Age in years		
Below 20	6	2.1
20 to 40	212	73.1
41 to 60	70	24.1
Above 60	2	0.7
Gender		
Male	62	21.4
Female	228	78.6
Relationship with the child		
parent	244	84.1

Adoptive parent	13	4.5
Sister/brother	24	8.3
others	9	3.1
Family size		
Small (below 4)	49	16.9
Medium (4 to 6)	204	70.3
Large (more than 6)	37	12.8
Marital status		
married	213	73.4
single	22	7.6
divorced	40	13.8
widowed	15	5.2
Educational level of the mother		
No formal education	61	21.0
Formal education	227	78.3
Educational level of the father		
No formal education	12	4.1
Formal	251	86.6
Missing	27	9.3
Mothers' occupation		
Private set up	42	14.5
Government employee	57	19.7
Housewife	144	49.7
Merchant	33	11.4
Others	14	4.8
Fathers' occupation		
unemployed	8	2.8
private	81	27.9
governmental	95	32.8
farmer	9	3.1

merchant	68	23.4
other	29	9.9
Monthly income		
Below 5000	57	19.8
5000- 10000	142	49.3
10001- 15000	54	18.8
Above 15000	35	12.2
Residence		
Addis Ababa	204	70.3
Out of Addis Ababa	86	29.7

8.2 Socio demographic characteristics of the children

The study encompassed a total of 290 school-aged children diagnosed with neurodevelopmental disorders, falling within the 4 to 18 years age range. Among these participants, 61.7 % were boys, while 38.3 % were girls. The mean current age of the school children was 9.12 years. The majority of children, constituting 87 (30%), belonged to the age category of 10-14 years, signifying the largest proportion within the sample. Conversely, 84 (29 %) were preadolescents aged between 7 and 9 years old. Please see table 2

Table 2: Socio demographic characteristics of the children

	N	Percent (%)
Age in years		
4 to 6	86	29.7
7 to 9	84	29
10 to 14	87	30
Above 14	33	11.4
Gender		
Male	179	61.7

Female	111	38.3
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8.3 Clinical characteristics of the children

Out of the total, 131(45.2 %) children were under follow-up for autism spectrum disorder (ASD), while 121(41.7%) were being treated for Intellectual Disability/Global Developmental Delay (ID/GDD). Additionally, 38 (13.1%) children had both diagnoses concurrently. Among these children, 121(41.7%) were identified to have another comorbid condition. Notably, Attention-Deficit/Hyperactivity Disorder (ADHD) and Epilepsy emerged as the most frequently reported comorbidities.

Regarding treatment, 95 children (32.9%) were undergoing behavioral therapy, whereas 24 (8.2%) were exclusively on medication. The largest group, comprising 162 children (55.7%), was receiving both behavioral therapy and medication concurrently. Please see Table 4.

Table 3: Clinical characteristics of the children

Table 3: Clinical characteristics of the children

	N	Percent (%)
Clinical diagnosis		
ASD	131	45.2
ID/GDD	121	41.7
ASD and ID	38	13.1
severity		
Level 1/Mild	64	23.5
Level 2 / Moderate	132	48.5
Level 3/ Severe	76	27.9
Comorbidity		
ADHD	30	10.3
Epilepsy	61	21
other	30	10.4
none	169	58.3

Type of intervention		
medication	24	8.3
behavioural	100	34.5
both	166	57.2

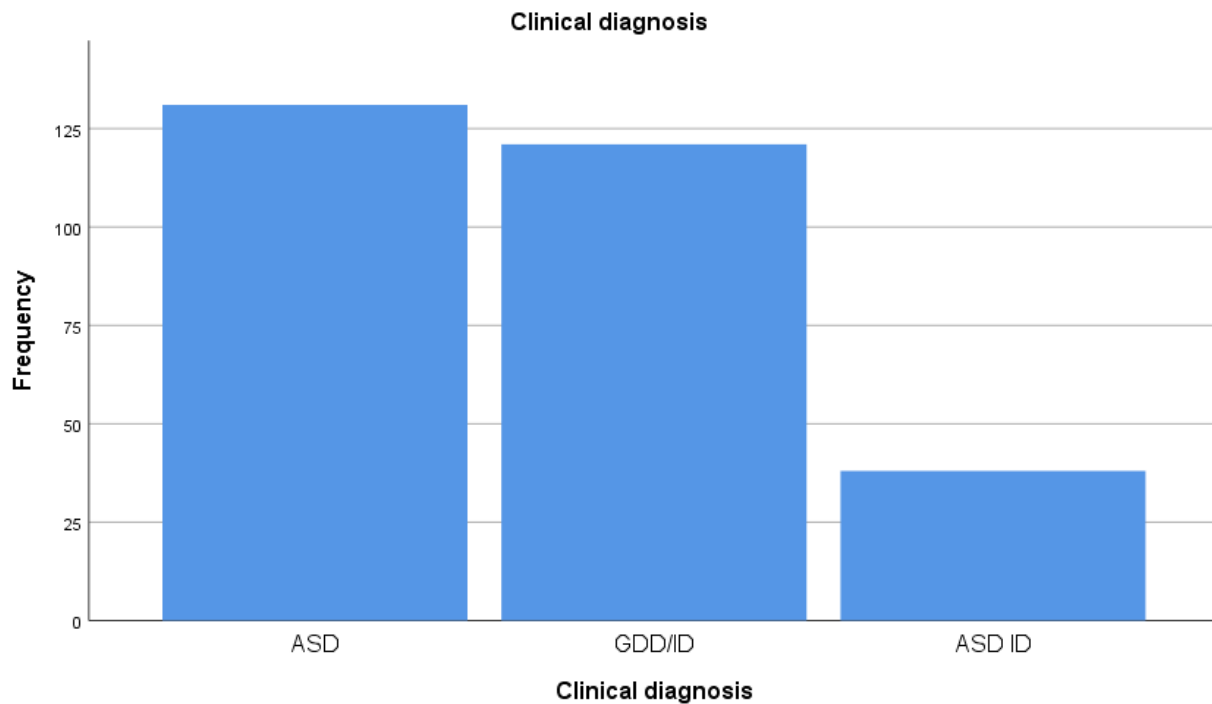


Figure 1: Clinical diagnosis of the children

8.4 Enrolment rates

According to the caregivers' reports, 197 children with Neurodevelopmental Disorders (NND), accounting for 67.9 % of the total, had been enrolled in school at some point, while 93 children (32.1%) had never been enrolled in any educational institution. Currently, 118(40.7%) children are attending school, whereas 172(59.3%) are not enrolled. Among those previously enrolled, the age at first enrollment ranged between 3 and 10 years, with an average enrollment age of 5.56. For the children currently attending school, 34(28.3 %) of them are in special need schools, the others are attending regular schools. Please see Table 3

Table 4: Enrolment status

	N	Percent (%)
Educational state		
Has been enrolled	197	67.9
Has never been enrolled	93	32.1
Current enrolment state		
In school	118	40.7
Out of school	172	59.3
Type of school		
Regular, special class	43	35.8
Regular, full inclusion	41	34.2
Regular, partial	2	1.7
Special	34	28.3
Type of school		
governmental	74	61.2
private	47	38.8
attendance		
poor	14	12.3
fair	17	14.9
good	83	72.8

Enrollment by Type of clinical diagnosis

Among 121 children with ID 63 (52.07%) of them were enrolled in school. Out of 131 children with ASD 43 (32.83%) were enrolled in school. Among children with a diagnosis of both ID and ASD only 12 (31.56%) were enrolled to school. Please see table 5

Table 5: Enrollment by Type of diagnosis

		Diagnosis			Total
		ID/GDD	ASD	ID and ASD	
Educational status	Has been enrolled	93 (76.86%)	83 (63.36%)	21 (55.26%)	197 (67.93%)
	Never been enrolled	28 (23.14%)	48 (36.64%)	17 (44.74%)	93 (32.07%)
Current enrolment	enrolled	63 (52.07%)	43 (32.83%)	12 (31.58%)	118 (40.7%)
	Not enrolled	58 (47.93%)	88 (63.17%)	26 (68.42%)	173 (59.3%)
Total		121	131	38	290

Reasons for non-enrollment

Regarding the reasons for non-enrollment among children currently not attending school, 76(43.93%) of the caregivers reported the symptoms of the illness as a cause for not being in school. Unavailability of suitable schools (26.4%), and stigma from school (11.5%) were the next frequently mentioned factors hindering their enrollment. Please See Figure 1

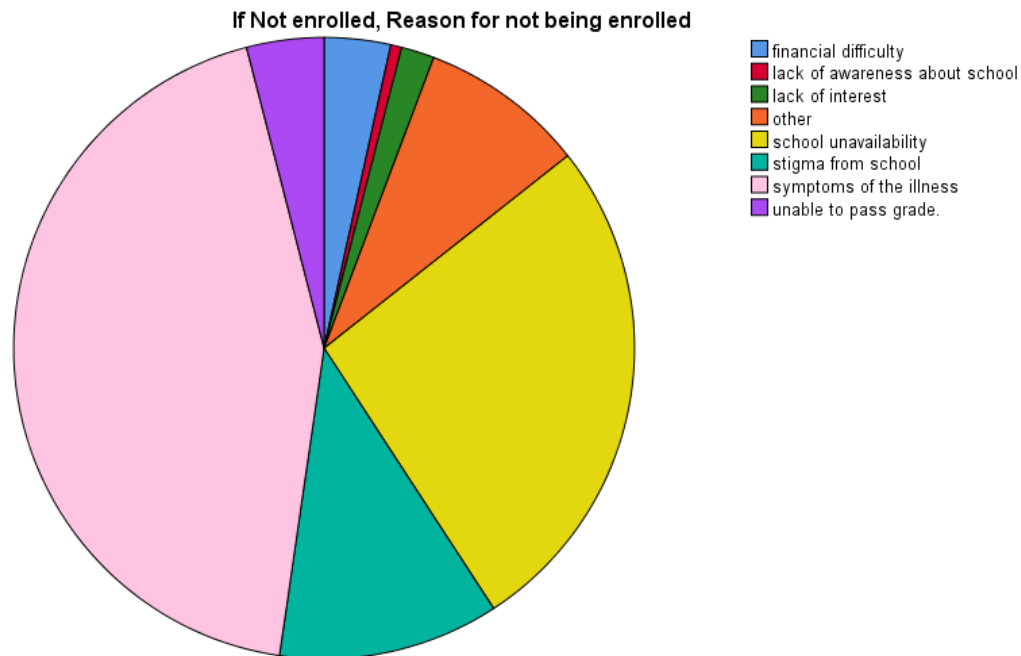


Figure2. Reasons for non-enrolment to school

Awareness and Availability of schools

In terms of awareness and availability of schools tailored to children with Neurodevelopmental Disorders (NDD), 214 (73.8%) respondents indicated awareness of special needs schools, whereas only 111(38%) reported the presence of such schools within their living areas. Out of 97 caregivers, 69 (71.1%) reported that the schools are not well equipped to meet the need of a child with NDD. From these, 42 of respondents highlighted inadequacies within these schools, stating that students with diverse disabilities and different age groups were integrated into the same classroom settings. Additionally, other reason mentioned included a lack of adequately trained teachers in these special need schools.

8.5 Association between school enrollment and independent variables

Binomial Regression Analysis was used to see any association between school enrollment and each of the independent variables. Residence, Family income, Gender of the child, type of diagnosis, Severity of illness, Awareness and availability of school and perceived stigma were found to have association with enrollment status ($p\text{-value} \leq 0.05$). Please see table 6 and 7. These variables were entered into multivariable logistic regression to control for potential confounders. Accordingly, after accounting for potential confounders, Residence in Addis Ababa (AOR=3.398; 95% CI =1.205, 9.573), being Female (AOR=0.39; 95% CI =0.158, 0.96), severity of illness (AOR=0.104; 95% CI =0.047,0.229) and availability of schools (AOR=7.812; 95% CI =3.012,20) were found to have significant association with school enrolment. Please see table 8

Independent variable		Current school enrollment	
		Crude Odds Ratio (95% CI)	P value
Age	Below 20	1	

	20 to 40	2.0 (0.078,51.593)	0.676
	41 to 60	0.656(0.040,10.63)	0.767
	Above 60	0.667(0.040,11.10)	0.778
Gender	Male	1	
	female	1.55(0.85,2.82)	0.145
Relationship with the child	parent	1	
	Adoptive parent	0.525(0.12,2.185)	0.376
	grandparent	1.576(0.288,8.614)	0.600
	other	0.793(0.342,1.843)	0.59
Family size	small	1	
	medium	0.534(0.206,1.384)	0.197
	large	1.547(0.746,3.207)	0.241
Marital status	married	1	
	single	0.4(0.119,1.348)	0.139
	divorced	0.417(0.143,1.216)	0.109
	widowed	0.667(0.177,2.517)	0.550
Educational status of the mother	No formal education	1	
	Formal education	1.815(0.986,3.339)	0.055
Educational status of the father	No formal education	1	
	Formal education	7.782(0.989,61.21)	0.051
Occupation of the mother	Employed at private set up	1	
	House wife	1.7(0.457,6.32)	0.428
	Government employee	2.589(0.727,9.225)	0.142
	merchant	1.371(0.409,4.59)	0.609
	Others	2.353(0.613,9.036)	0.213

Occupation of the father	unemployed	1	
	private	1.086(0.482,2.445)	0.842
	Government employee	0.000(0.000)	0.99
	merchant	1.808(0.824,3.966)	0.140
	others	1.216(0.529,2.793)	0.645
Monthly income	Below 5000	1	
	5000-10000	0.255(0.105,0.619)	0.003
	10001-15000	0.413(0.196,0.870)	0.020
	Above 15000	0.829(0.354,1.942)	0.665
Residence	Outside of Addis	1	
	Addis Ababa	7.3750(3.7,14.7)	<0.001

Table 6: Bivariate between school enrollment and Socio demographic characteristics of caregivers.

Independent variable		Current school enrollment	
		Crude Odds Ratio (95% CI)	P value
Age	4 to 6	1	
	7 to 9	0.529(0.226,1.237)	0.142
	10 to14	1.154(0.508,2.623)	0.733
	Above 14	1.726(0.764,3.901)	0.189
Gender	Male	1	
	Female	0.448(0.29 ,0.79)	0.002

Clinical diagnosis	ID/GDD	1	
	ASD	0.439(0.203,0.95)	0.037
	ASD+ID	0.465(0.279,0.774)	0.003
Severity of illness		0.125(0.074,0.212)	<0.001
Comorbidity	ADHD	1	
	Epilepsy	0.560(0.193,1.623)	0.286
	Other	0.505(0.203,1.260)	0.143
	none	1.121(0.512,2.452)	0.775
Awareness about school		5.846(4.25,8.333)	<0.001
School availability		27.02(14.09,50.00)	<0.001
Perceived stigma		0.183(0.041,0.817)	0.026

Table 7: Bivariate analysis between school enrolment and sociodemographic and clinical characteristic the children.

Independent variables		School enrolment	
		adjusted Odds Ratio (95% CI)	P value
Income	Below 5000	1	
	5000 to 10000	0.527(0.115,2.42)	0.412
	10001 to 15000	0.83(0.24,2.91)	0.775
	Above 15000	1.198(0.29,4.98)	0.81
Residence	Outside of Addis	1	

	Addis Ababa	3.398(1.205,9.573)	0.021
Age of the child	4 to 6	1	
	7 to 9	0.94(0.159,5.61)	0.859
	10 to14	2.5(0.42,15.12)	0.453
	Above 14	2.76(0.518,14.73)	0.195
Gender	Male	1	
	Female	0.39(0.158,0.96)	0.042
Clinical diagnosis	ID/GDD	1	
	ASD	0.39(0.13,1.15)	0.28
	ASD+ID	1.27(0.25,6.42)	0.92
Severity of illness		0.104(0.047,0.229)	<0.001
Awareness about school		0.431(0.125,1.48)	0.183
School availability		7.812(3.012,20)	<0.001
Perceived stigma		0.267(0.026,2.74)	0.27

Bold results are those with p value of <0.05

Table 8: Multivariable analysis between school enrolment and Independent variables

9. Discussion

This study aimed to assess the prevalence of school enrollment among school-aged children diagnosed with Neurodevelopmental Disorders (NDD) who were undergoing treatment at tertiary hospitals in Addis Ababa, Ethiopia. It included a total of 290 participants from 4 tertiary hospitals in Addis Ababa which are TASH, ZMH, AMSH and Yekatit 12 hospitals. The findings of this study shed light on the socio-demographic characteristics of caregivers, children diagnosed with neurodevelopmental disorders (NDD), enrollment rates, clinical characteristics, and factors influencing school enrollment among these children. Understanding these aspects is crucial in formulating effective strategies to support the educational needs of children with NDD in Ethiopia.

Previous research primarily focused on children with disabilities in general, offering limited information concerning those specifically dealing with NDD. Hence, this study aimed to bridge this knowledge gap.

The findings revealed that 197 (67.9 %) of the total participants, had been enrolled in school at some point, while currently, 118(40.7%) children are attending school, whereas 172(59.3%) are not enrolled in school. This shows that there is still higher number of children dropping out from schools even after being enrolled.

The enrollment rate in this study surpassed the estimates provided by UNICEF (10%) (*The State of the World's Children 2007* | UNICEF, n.d.) for developing countries. This could be because most participants in this study are from Addis Ababa. However, it still remained lower compared to enrollment rates reported in studies conducted in Eastern Ethiopia(Geda et al., 2016) and Kenya(Moyi, 2017) which reported higher percentages of 49.5 %, and 78.15% respectively.

These increased percentage in the other studies might be attributable to comparatively higher enrollment rates among children with disabilities other than neurodevelopmental disorders (NDD). Notably, the studies encompassed a larger representation of children with impairments like hearing and visual disabilities than those specifically diagnosed with developmental disorders. This trend was also evident in the study conducted in sub-Saharan Africa, where children with vision and hearing disabilities did not display a negative impact on their school enrollment (Zhang & Holden, 2022). The distinction in enrollment patterns suggests that while

certain types of disabilities, like visual and hearing impairments, might not significantly hinder school attendance, there remains a concerning disparity in access to education for children specifically grappling with neurodevelopmental disorders.

Among the 121 children diagnosed with Intellectual Disability (ID), 63 (52.07%) are currently enrolled in school. This enrollment rate surpasses the overall enrollment figure, which stands at 40.7% (118 out of 290). In contrast, among the 131 children diagnosed with autism spectrum disorder (ASD), the enrollment rate is observed to be lower, with only 43 (32.83%) currently enrolled in school. This could be attributed to the unique social and communication challenges that children with ASD often encounter, making their integration into educational settings more complex.

Interestingly, when considering the subset of children diagnosed with both ID and ASD, the enrollment rate drops further to 31.56%, with only 12 children currently attending school. This dual diagnosis might present additional challenges, resulting in a lower enrollment rate compared to either ID or ASD alone.

This emphasizes the importance of acknowledging and addressing the diverse spectrum of disabilities and their distinct impacts on educational opportunities. Efforts should be targeted to understand and mitigate the unique challenges faced by children with different types of disabilities, particularly those with neurodevelopmental disorder.

Further investigation and targeted interventions could be necessary to address potential barriers to enrollment for children with NDD in this area.

The enrollment rate was also found to be much lower when it was compared to a study in India which reported 84.7 % of school enrollment for children with neurodevelopmental disabilities. But these differences could be the result of the implementation and refinement of an early intervention (EI) program designed for children experiencing delayed development in the study. This suggests a promising upward trajectory in enrollment rates among children involved in the EI program (Krishna et al., 2020).

Regarding the reasons for non-enrollment among children currently not attending school, several factors contribute to this issue. According to the results of this study, symptoms of the illness was reported as a cause of not attending school in 76 (43.93%) of the participants. These

contributed for the majority percent of children to not attend school. And the other major factors were school unavailability and the prevalent stigma surrounding NDD. Furthermore, a significant problem arises from the lack of awareness regarding the specialized educational services available for children with disabilities. Surprisingly, about 26.2 % of the respondents were unaware of these specialized educational opportunities provided by schools for children with disabilities.

These findings mirror findings from previous research which highlight the persistent and multifaceted challenges faced by children with NDD in accessing education. A cross-sectional study was also done in all government primary schools that deliver formal education for students with disabilities in Dire Dawa in both urban and rural kebeles' of the Administration in 2014. According to the findings of the study, the main challenges for students with disabilities were lack of public awareness about the needs of the students with disability, lack of individualization at the elementary and secondary levels and negative attitudes towards children with disabilities. (Tadele & Gipo, 2017).

Addressing these challenges may necessitate comprehensive interventions that not only focus on increasing school infrastructure but also aim to mitigate societal stigma, raise awareness, and provide specialized support services catering specifically to the needs of children with neurodevelopmental disorders.

The study also identified several factors associated with school enrollment. Urban residence, male gender, severity of illness and availability of school were linked to a higher likelihood of current school enrollment. These associated factors were also seen in other studies too.

A higher proportion of males showed a stronger association with enrollment. Possible explanations for this discrepancy from other studies involves cultural biases favoring males, parental reluctance to disclose disability due to fear of stigma, or lack of access to rehabilitative services for girls with disabilities (Geda et al., 2016).

Urban residency was consistently associated with higher enrollment rates, aligning with findings from studies in Kenya that reported significantly higher enrollment in urban areas compared to rural regions which was 45% for Nairobi compared with 7 % for other rural areas (Moyi, 2017).

In contrast to some previous research that found a positive correlation between school enrollment among Children with Disabilities with households with higher wealth indexes, increasing age of the child and higher level of parent's education, this particular study did not yield statistically significant associations in that regard (Mutua & Dimitrov, 2001).

The disparity in findings between this study and previous research could stem from various factors. It's plausible that the unique demographic or socio-economic composition of the sample population in this study differed from those in previous research, leading to contrasting outcomes. Moreover, it's essential to consider potential methodological differences between studies that might have contributed to the dissimilar findings. Variations in sample sizes, geographic locations, or the criteria used to define wealth index and educational attainment could lead to diverse results across different research endeavors.

Strengths of the study

The study involved 290 children from various socio-demographic backgrounds and across different age groups diagnosed with neurodevelopmental disorders, providing a diverse sample that enhances the study's generalizability. The findings have implications for policy-making and interventions, especially concerning educational support for children with neurodevelopmental disorders. Understanding the associations between socio-demographic factors, clinical characteristics, and school enrollment rates can guide the development of targeted interventions and support systems. These strengths collectively contribute to the significance of the study's findings, offering valuable insights into the factors influencing school enrollment among children with neurodevelopmental disorders and providing a foundation for targeted interventions and policy improvements.

Limitations of the study

The study employed a cross-sectional design, limiting its ability to establish temporal relationships among variables. Additionally, the sample selection through consecutive sampling might impact the generalizability of the findings, as this method may introduce biases inherent in the sampling process. Moreover, the presence of missing data within the dataset in certain variables might have affected the precision and completeness of the study's findings, potentially influencing the accuracy of the reported associations. Addressing these limitations in future research could significantly enhance the understanding of the challenges faced by children with neurodevelopmental disorders in accessing education.

10. Conclusion and Recommendations

The enrollment of children with Neurodevelopmental Disorders (NDD) in schools is notably lower compared to children with other forms of disability or those without any disability. Moreover, the children with NDD who do attend school often encounter various challenges and are not receiving the quality of education they should receive. The study also revealed that factors such as symptoms of the illness, unavailability of schools, and stigma from school contributed to low school enrollment rates.

These findings also highlight the influence of sociodemographic factors on the enrollment of children with NDD in schools. Residence location, gender, and severity of illness significantly affect enrollment rates, with children in Addis Ababa having higher enrollment chances, females experiencing lower rates of enrollment compared to males, and those with severe level of illness facing more pronounced disparities in school participation, particularly in comparison to their peers without disabilities.

Based on these finding of this research we recommend the following,

Improving the educational journey for children with Neurodevelopmental Disorders (NDD) involves various key actions. Firstly, offering better therapies and medical care that address their specific symptoms can help reduce the impact of these disorders on their daily lives. Through better symptom management and more effective treatment strategies, we can aim to reduce the impact of these disorders on their day-to-day functioning including school participation. Early interventions can play a crucial role in improving educational outcomes by promptly identifying conditions and initiating appropriate support. These could include training programs for social skills, emotional regulation, and speech therapy that addresses communication difficulties early on, enhancing participation in classroom activities.

Secondly, creating inclusive educational environments by providing tailored educational programs, individualized learning plans, and necessary support can encourage these children to actively engage and succeed in academics.

Implementing policies to tackle this issue is crucial. Strengthening schools to deliver comprehensive educational services and creating supportive learning environments for children with NDD of different type and levels of severity requires well-trained teachers, adequate resources, and community-wide awareness campaigns.

We also recommend policies to address the educational gaps faced by children with neurodevelopmental disorders. Initiatives focusing on education especially in rural areas, and promoting girls' access to schooling could positively impact the enrollment rates of children with NDDs.

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12. Appendix

Data extraction tools

Date-----

MRN Number-----

1. Participants' Information Sheet

This information sheet is prepared to explain the research project you are asked to join. It explains the aim of the study, your role in the study, benefits and risks of being involved in this study, compensations and confidentiality of the information you give us.

Purpose: The purpose of this study is to determine the level of school enrolment in children with neuro developmental disorder and associated factors receiving care at TASH, AMSH, ZMH, and Y12HMC.

Procedure: After you receive regular evaluation and care, one of our data collectors will give you information about the study and ask you the questions in the study with your permission.

The questions include basic information about you and your child and your child's schooling. We will also be reviewing the medical chart of your child to obtain clinical information.

Risks: You will spend extra 30min in the hospital to complete the questionnaire. Some questions might cause distress and you have the right not to answer any question or stop the interview. there will be no consequence up on refusal to take part in the study regarding the management of your child in the hospital.

Benefits: This study will contribute to identify the current level of school enrolment in children with NDDs and what factors could be affecting it. It will be used as a base for other studies and the information can be used as an input for policy makers when planning education for these group of children.

Incentives: There is no incentive or payment for taking part in this research.

Confidentiality: The information collected in this research project will be kept confidential. Your personal identifiers and personal information will not be disclosed to a third party other than the research team.

Persons to contact: This research project is reviewed and approved by the ethical committee of Addis Ababa University, School of Medicine, Department of Psychiatry. If you want to have more information you can contact the committee through the address below. For any questions, you can contact the members of the research team.

Ethics committee office: +251115 538734

Advisors:

- Dr Fikirte Girma
- Dr Mahlet Yared
- Investigator: Dr Simret Gebre +251919891395

2. Consent form

Dear participant,

After understanding the above explanation and the purpose of this study, I would like to ask for your consent to participate in this study.

Participating in this study will only depend on your decision to do so and you have all the right to withhold information, refuse or drop out of the study any time you want to do so without any need to explain to anyone. Withdrawing from the study will have no effect on you or your child. All the information you give during the study will be kept confidential.

Your honest answers to these questions will help us to understand the problems associated with school enrolment of children with NDD. You have all the right to ask and get clarification at any time. In case you have doubts or questions, you can use the above address to contact the research team.

If you agree to participate in this study, please confirm your agreement by your signature.

Signature of participant----- date-----

Signature of witness (if caregiver cannot read and right) -----date-----

Signature of data collector-----date-----

3. Socio demographic characteristics of care givers

1.	Age	
2.	Gender	Male ☐
		Female ☐
3.	Relationship with the child	Birth parent ☐
		Sibling ☐
		Grandparent ☐
		Adoptive parent ☐
		Other, please specify
4.	Family size	
5.	Religion	Orthodox Christian ☐
		Muslim ☐
		Protestant ☐
		Other, please specify
6.	Marital status	Married ☐
		Single ☐
		Divorced ☐
		Widow ☐
		Other
7.	Level of education	
7.1	Level of education of the mother	No formal education ☐
		Formal education ☐
		If formal education, please specify the highest grade completed-----

7.2	Level of education of the father	No formal education ☐
		Formal education ☐
		If formal education, please specify the highest grade completed-----
8.	Occupation	
8.1	Mother's occupation	House wife ☐
		Farmer ☐
		Government employee ☐
		Merchant ☐
		Employed at a private setup ☐
		Other, please specify
		Unemployed ☐
8.2	Father's occupation	Government employee ☐
		Farmer ☐
		Merchant ☐
		Employed at a private setup ☐
		Other, please specify ☐
		Unemployed ☐
9.	Monthly income of the house hold	
10.	Residence	Addis Ababa ☐
		Outside of Addis Ababa ☐
		If outside of Addis Ababa, how far from Addis Ababa
		Urban ☐
		Rural ☐

4. Socio demographic characteristics of children

1.	Age	
2.	Gender	Male ☐
		Female ☐
3.	Educational status	Never been enrolled in school ☐
		Has been enrolled ☐
4.	If ever enrolled, age at first enrolment	
5.	Currently enrolled in school	Yes ☐
		No ☐
6.	If yes to question 5, enrolled in	Special school ☐
		Regular school, special classroom ☐
		Regular classroom, partial inclusion ☐
		Regular classroom, full inclusion ☐
7.	If enrolled, type of school	Governmental ☐
		Private ☐
8.	Attendance	Good ☐
		Moderate ☐
		Poor ☐
9.	Parental satisfaction of school service quality in a scale of 0 to 10	
10.	If no to question 5, Reason for not being enrolled	Unavailability of school ☐
		Fear of stigma at school ☐
		Unaware of school availability ☐
		Didn't believe it is helpful ☐
		Financial difficulty ☐
		Illnesses ☐

		Lack of interest ☐
		Failing classes ☐
		Other, please specify

5. Clinical characteristics of children

1.	Clinical diagnosis	ASD ☐
		ID ☐
		GDD ☐
		Other comorbid diagnosis, specify
2.	Severity of disability	
2.1	ID/GDD	Mild ☐
		Moderate ☐
		Severe ☐
		Profound ☐
2.2	ASD	level 1 ☐
		level 2 ☐
		level 3 ☐
3.	Type of intervention in the hospital	Pharmacological ☐
		Psychosocial ☐
		Both ☐

6. Awareness about school and availability

1.	Do you know schools that are tailored specifically to children with developmental	Yes ☐ No ☐
----	---	---

	disorder?	
2.	If yes, do you have such schools in your living area?	Yes ☐ No ☐
3.	Are the schools equipped to meet the need of the child with neurodevelopmental disorder?	Yes ☐ No ☐
4.	If no to the above question, in what way?	

7. Assessment of perceived stigma

1.	Do you feel that society views your child with a NDD differently than other children?	A lot ☐ Often ☐ Sometimes ☐ Not at all ☐
2.	Have you ever avoided social situations or events because of concerns about how others may react to your child's behaviour?	A lot ☐ Often ☐ Sometimes ☐ Not at all ☐
3.	Do you worry about how your child will be treated by peers or classmates because of their disorder?	A lot ☐ Often ☐ Sometimes ☐ Not at all ☐

ቀን: _____

የተሳታፊ መለያ ቁጥር: _____

1. የጥናት ተሳታፊዎች መረጃ ቅፅ

ይህ ቅፅ እንዲሳተፍ የተጠየቁበት ጥናት ምንነት ለመግለጽ የተዘጋጀ ነው። ቅጹ የጥናቱን ዓላማ፣ በጥናቱ ውስጥ የእርስዎን ድርሻ፣ በጥናቱ የመሳተፍ ጥቅምና ጉዳትን፣ የሚሰጡን መረጃ ምስጢራዊነትን እና የሚያገኙአቸውን ካሳዎች የሚገልጽ ነው።

የጥናቱ ዓላማ የዚህ ምርምር ዓላማ የአእምሮ እድገት እክል ያላቸው ልጆች የትምህርት ቤት ተሳተፎ መጠን እና የተያያዙ ችግሮችን ለማወቅ ነው።

የጥናቱ ሂደት ምርመራና ሕክምና ካገኙ በኋላ ከመረጃ ሰብሳቢዎቻችን አንዱ ፍቃደኝነትዎን ጠይቆ አንዳንድ ጥያቄዎችን ያቀርብሎታል።

የጥናቱ ጉዳት፡-ጥያቄውን ለማጠናቀቅ በሆስፒታል ውስጥ ተጨማሪ 30 ደቂቃ ሊያጠፋ ይችላል። አንዳንድ ጥያቄዎች ጭንቀት ሊያስከትሉም ይችላሉ። ቃለ መጠይቁን አለመሳተፍም ከጀመሩም በማንኛውም ደቂቃ ማቆም ይችላሉ። በጥናቱ ለመካፈል ፈቃደኛ አለመሆን በልጅዎ ህክምና ላይ ምንም ችግር አይኖረውም።

የጥናቱ ጥቅም ይህ ጥናት የአእምሮ እድገት እክል ያላቸው ልጆች የትምህርት ቤት ተሳተፎ መጠን ለማወቅ እና የተያያዙ ችግሮችን ለማወቅ ይረዳል።

ማካካሻ፡-በጥናቱ ላይ በመሳተፍዎ የሚያገኙት ማካካሻ ወይም ክፍያ የለም።

የመረጃ ምስጢራዊነት፡-የሚሰጡት መረጃ በምስጢር ይጠበቃል። የእርስዎ ማንነት እና የግል መረጃዎ ከጥናት ቡድኑ ውጪ ለማንም እንዳይተላለፍ ይደረጋል።

ተጨማሪ መረጃ፡-ይህ ጥናት በአዲስ አበባ ዩኒቨርሲቲ የህክምና ትምህርት ቤት የአእምሮ ህክምና ትምህርት ክፍል የስነምግባር ኮሚቴ ታይቶ የጸደቀ ነው። ተጨማሪ መረጃ ከፈለጉ ኮሚቴውን፣ የጥናቱ አማካሪዎችን እንዲሁም አጥኚውን በሚከተሉት አድራሻዎች ማግኘት ይቻላል።

የስነምግባርኮሚቴ፡+251115538734

የጥናቱአማካሪዎች

ዶ/ር ፍቅርተ ግርማ

ዶ/ር ማህሌት ያሬድ አጥኚ፡

ዶ/ር ስምረት ገብሬ +251919891395

2. . የተሳታፊዎች ፈቃደኝነት መግለጫ ቅፅ

የተከበራችሁ የጥናቱ ተሳታፊዎች፣በጥናት ተሳታፊዎች መረጃ ቅፅ ላይ የተዘረዘሩትን መረጃዎች ከተረዱ በኋላ በጥናቱ ላይ እንዲሳተፉ እጋብዘታለሁ።

በጥናቱ መሳተፍ የእርስዎ ውሳኔ ይሆናል።በጥናቱ ለመሳተፍ ካልፈለጉ በማንኛውም ሰዓት ምክንያት መስጠት ሳይጠበቅብዎት በነጻነት ተሳትፎውን ማቋረጥ ይችላሉ።በዚህ ጥናት ለመሳተፍ ፈቃደኛ ባለመሆንዎ የሚደርስብዎት ችግር የለም።የሚሰጡን መረጃ በምስጢር ይጠበቃል።

ጥናቱ በትክክል አላማውን እንዲመታ የእርስዎን ድጋፍ እንጠይቃለን።ለጥያቄዎቹ የሚሰጡን ሐቀኛ ምላሽ የአእምሮ እድገት እክል ያለባቸው ልጆች የትምህርት ሁኔታ ላይ መረጃ ይሰጣል።ማንኛውንም አይነት ጥያቄ መጠየቅና ማብራሪያ ማግኘት ከፈለጉ በመረጃ መስጫ ቅፅ በተገለጹት አድራሻዎች ተጠቅመው መረጃ ማግኘት ይችላሉ።

በመጨረሻም ፍቃድዎ ከሆነ የፍቃደኝነት ማረጋገጫ ፊርማ ከዚህ በታች እንዲያሰፍሩ በአክብሮት እጠይቃለሁ።

የተሳታፊ ፊርማ_____ ቀን_____

የምስክር ፊርማ(መፃፈ ለማይችሉ)_____ ቀን_____

የመረጃ ሰብሳቢ ፊርማ _____ ቀን _____

3. የወላጅ/አሳዳጊ ማህበራዊ መረጃ

1.	እድሜ	
2.	ፆታ	ወንድ ☐
		ሴት ☐
3.	ከልጁ ጋር ያሉት ግንኙነት	ወላጅ ☐
		እህት/ወንድም ☐
		አያት ☐
		አሳዳጊ ☐
		ሌላ, እባክዎን ይግለጹ
4.	የቤተሰብብዛት	
5.	ሀይማኖት	ኦርቶዶክስ ክርስቲያን ☐
		ሙስሊም ☐
		ፕሮቴስታንት ☐
		ሌላ, እባክዎን ይግለጹ
6.	የጋብቻ ሁኔታ	ያገባች ☐
		ያላገባች ☐
		የፈታች ☐
		ባለቤት የሞተበት/ባት ☐
		ሌላ
7.	የትምህርት ደረጃ	

7.1	የእናት የትምህርት ደረጃ	መደበኛ ትምህርት ያልተማረች ☐
		መደበኛ ትምህርት የተማረች ☐
		ከተማረች, ከፍተኛ የደረሰችበት ደረጃ
7.2	የአባት የትምህርት ደረጃ	መደበኛ ትምህርት ያልተማረ ☐
		መደበኛ ትምህርት ያልተማረ ☐
		ከተማረ, ከፍተኛ የደረሰበት ደረጃ
8.	ስራ	
8.1	የእናት ስራ	የቤት እመቤት ☐
		የመንግስት ሠራተኛ ☐
		ነጋዴ ☐
		የግል ተቀጣሪ ☐
		ሌላ ካለ ይግለፁ
		ስራ የልለው ☐
8.2	የአባት ስራ	የመንግስት ሠራተኛ ☐
		ነጋዴ ☐
		የግል ተቀጣሪ ☐
		ሌላ ካለ ይግለፁ ☐
		ስራ የልለው ☐
9.	ጠቅላላ የወር ገቢ	
10.	የመኖሪያ ባታ	አዲስ አበባ ☐
		ከአዲስ አበባ ውጪ ☐
		ከአዲስ አበባ ውጪ ከሆኑ,
		ከተማ ☐
		ከከተማ ውጪ ☐

4. የተሳታፊ ልጆች ማህበራዊ መረጃ

1.	እድሜ	
2.	ፆታ	ወንድ ☐
		ሴት ☐
3.	የትምህርት ደረጃ	ወደት/ቤት ገብቶ የማያውቅ ☐
		ወደት/ቤት ገብቶ የሚያውቅ ☐
4.	ወደት/ቤት ገብቶ የሚያውቅ ከሆነ መጀመሪያ ትምህርት የገባበት እድሜ	
5.	አሁን ላይ በትምህርት ላይ ነው?	አዎ ☐
		አይደለም ☐
6.	ለላይኛው ጥያቄ መልሶት አዎ ከሆነ የት/ቤቱ አይነት	የልዩ ፍላጎት ት/ቤት ☐
		መደበኛ ት/ቤት, በልዩ ክፍል ውስጥ ☐
		መደበኛ ት/ቤት, በከፊል አካታች ☐
		መደበኛ ት/ቤት, ሙሉ አካታች ☐
7.	የት/ቤቱ አይነት	የመንግስት ☐
		የግል ☐
8.	የክፍል ቀሪ በወር	1 ቀን/ምንም ቀን ☐
		2 ቀን ☐
		ከ 2 ቀን በላይ ☐
9.	የ ት/ቤት የአገልግሎት ጥራት ከ 0 እስከ 10 በሆነ መጠን የወላጆች እርካታ	

10.	አሁን ላይ ልጅዎ በትምህርት ላይ ካልሆነ ምክንያቱ	የት/ቤት አለመኖር	☐
		ከት/ቤት መገለል	☐
		በአቅራቢያ ት/ቤት መኖሩን አለማወቅ	☐
		ት/ት ጠቃሚ ነዉ ብሎ አለማሠብ	☐
		የገንዘብ ችግር	☐
		በህመሙ ምልክቶች የተነሳ	☐
		በፍላጎት ማጣት	☐
		ከክፍል ክፍል ማለፍ አለመቻል	☐
		ሌላ ከሆነ ይግለፁ	

5. የልጆች የጤና መረጃ

1.	የህመም ዓይነት	አቴዝም ስቴክትረም ዲስኦርደር	☐
		ኢንተሌክቸዋል ዲስኤቢሊቲ	☐
		ግሎባል ዴቪሎፕመንታልዲሌይ	☐
		ሌላ ተያያዥ በሽታ ካሎት ይግለፁ	
2.	የህመሙ ደረጃ		
2.1	ኢንተሌክቸዋል ዲስኤቢሊቲ/ግሎባል ዴቪሎፕመንታልዲሌይ	አነስተኛ	☐
		መካከለኛ	☐
		ከፍተኛ	☐
		በጣም ከፍተኛ	☐
2.2	አቴዝም ስቴክትረም ዲስኦርደር	ደረጃ 1	☐

3.	እየተደረገለት/ላት ያለ የሕክምና አይነት	ደረጃ 2 ☐
		ደረጃ 3 ☐
		የመድሐኒት ሕክምና ☐
3.	እየተደረገለት/ላት ያለ የሕክምና አይነት	ንግግር/የባህሪ ሕክምና ☐
		ሁለቱም ☐

6. የወላጆች ግንዛቤ መገምገሚያ

1.	የአምሮ የእድገት ችግር ላለባቸው ልጆች የተለዩ ትምህርት ቤቶችን ታውቃለህ?	አዎ ☐ አላውቅም ☐
2.	.በመኖሪያ አካባቢህ እንዲህ ያሉ ትምህርት ቤቶች አሉ?	አዎ ☐ የሉም ☐
3.	ትምህርት ቤቶች የተማሪዎችን ችግር ለሚሟላት ብቁ ናቸው?	አዎ ☐ አይደሉም ☐
4.	ለላይኛው ጥያቄ መልሶት አይደለም ከሆነ ፣ በምን መልኩ?	

7. የመላ ልል ግምገማ

1.	ከልጅህ የአምሮ እክል ጋር በተያያዘ ሰዎች ምን ያህል ግዜ ልጅዎችን በተለየ ሁኔታ የሚመለከቱ ይመስሎታል?	አብዝተው ☐ ብዙ ግዜ ☐ አንዳንድ ግዜ ☐
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		ምንም የለም ☐
2.	ለልጅዎ ባህሪ ሌሎች ምን ምላሽ ሊሰጡ እንደሚችሉ ስጋት ስላደረባቸው ማህበራዊ ሁኔታዎችን ወይም ክስተቶችን አስወግደው ያውቃሉ?	አብዝተው ☐ ብዙ ጊዜ ☐ አንዳንድ ጊዜ ☐ ምንም የለም ☐
3.	በችግሩ ምክንያት ልጅዎ በእኩሮች ወይም በክፍል ጓደኞቻቸው እንዴት እንደሚስተናገዱ ይጨነቃሉ?	አብዝተው ☐ ብዙ ጊዜ ☐ አንዳንድ ጊዜ ☐ ምንም የለም ☐