



St. Paul Hospital Millennium Medical College

Graduate Study Program

**Prevalence and associated factors of attention deficit hyperactivity disorder among
children and adolescents attending outpatient departments in public hospitals, in
Addis Ababa, Ethiopia**

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Addis Ababa, Ethiopia

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Addis Ababa, Ethiopia

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Declaration

I, the undersigned, declare that this thesis is my original work and has never been presented for a degree in this or any other university and that all sources of material used for the thesis have been duly acknowledged.

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Abstract

Background: Attention deficit hyperactivity disorder (ADHD) is one of childhood and adolescence's common neurodevelopmental disorders. There is a lack of data in Sub-Saharan Africa, particularly Ethiopia, which creates a big gap in the appropriate and efficient management of these groups of populations.

Objectives: To assess the prevalence of ADHD and associated factors among children and adolescents who visit outpatient departments at public hospitals in Addis Ababa, Ethiopia.

Methods: A Multicenter, cross-sectional study was conducted from October 2 - December 1, 2023, G.C. at St. Paul's Hospital Millennium Medical College, Ras Desta Memorial Hospital, and Menelik Second referral hospital. The sample size was 227 children and adolescents between the ages of 5 and 14 years residents who were selected by using systematic random sampling techniques, and the Disruptive Behavioral Disorder rating scale was used to assess ADHD. To look for associations, logistic regression analysis, both binary and multivariable, was done. The variables with an association with the outcome variable with a p-value of <0.05 were used to declare statistical significance in the final multivariable logistic regression.

Results: The prevalence of ADHD among these participants ($n=227$) was found to be 13.2 % (95% CI = 9.1 – 18.3). ADHD was associated with child age (AOR: 3.39; 95% CI (1.05,10.9), maternal illness during pregnancy (AOR: 4.704; 95% CI (1.28,17.2), maternal substance use during pregnancy (AOR: 3.89, 95% CI (1.2,12.637), an externalizing score for slightly raised and high & very high score (AOR: 2.6, 95% CI (0.57,12.03) and (AOR: 20.77; 95% CI(2.23,193.6), respectively and TDS for slightly raised and high & very high score (AOR: 7.48; 95% CI(1.71,32.78) and (AOR: 8.1; 95% CI(1.35,48.5) respectively.

Conclusion: Overall, the current finding showed that ADHD is prevalent among children attending OPDs at different Hospitals in Addis Ababa. While screening for ADHD is done, risk factors such as maternal illness and substance use during pregnancy, child history of head injury, and externalizing symptoms like aggression, impulsivity, and disruptive tendencies should be considered. Addressing these risk factors may alleviate or prevent the hazard of developing this condition in these age groups. This result helps to try to fill the gap and provide information for policymakers to develop and improve ADHD treatments and services.

Keywords: ADHD, prevalence, children and adolescents, Addis Ababa

Acronyms and Abbreviations

ADHD: Attention Deficit Hyperactivity Disorder

ADHD-I: Attention Deficit Hyperactivity Disorder predominantly inattentive presentation

ADHD-H: Attention Deficit Hyperactivity Disorder predominantly hyperactive/impulsive presentation

ADHD-C: Attention Deficit Hyperactivity Disorder combined presentation.

AAP: American Academy of Pediatrics

ADA: Americans with Disability Act

CAPOPD: Child and adolescent pediatric outpatient department

CDC: Centers for Disease Control and Prevention

DBD: Disruptive Behavior Disorder rating scale

DSM-5 TR: Diagnostic and Statistical Manual of Mental Disorders fifth edition, text revision

ECD: Early childhood development:

FMOH: Federal Ministry of Health

GDB: global burden of diseases

ICD-11: International Classification of Diseases-11

ODD: Oppositional defiant disorder

OPD: Outpatient Department

SDQ 4 – 17: Strengths and Difficulties Questionnaire 4- 17 years

SPSS: statistical package for social science

SPHMMC: Saint Paul's Hospital Millennium Medical College

SVD: Spontaneous vaginal delivery

TDS: Total Difficulty Score

UN: United Nations

US\$: United States dollar

VLBW: Very Low Birth Weight

YLDs/DALYs: Year Life Disability/Disability-Adjusted Life Year

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1. Introduction

1.1. Background

Attention deficit/hyperactivity disorder (ADHD) is a neurodevelopmental condition affecting preschoolers, children, adolescents, and adults around the world (1). Both the International Classification of Diseases (ICD-11) 11th edition and the Diagnostic and Statistical Manual of Mental Disorders-version 5 (DSM-5 TR) define ADHD as a persistent pattern of inattention and/ or hyperactivity-impulsivity that interferes with functioning or development (2, 3). The diagnostic criteria for ADHD in children and adults have undergone some revisions in the DSM-5 TR of the American Psychiatric Association (APA) which described 3 basic forms: Attention deficit hyperactivity disorder predominantly inattentive presentation (ADHD-I), attention deficit hyperactivity disorder hyperactive/ impulsive presentation (ADHD-H), and attention deficit hyperactivity disorder combined presentation (ADHD-C). Of those three subtypes, ADHD-H describes individuals with excessive motor activity and hasty actions that occur at the moment without forethought, which may have the potential for harm to the individual, while ADHD-I type is characterized by maladaptive levels of inattention and the ADHD-C type is in individuals with symptoms of both inattention and hyperactivity-impulsivity (2). The criterion that several symptoms must appear before age 12 emphasizes the significance of a substantial clinical presentation during childhood (1). Moreover, manifestations of the disorder must be present in more than one setting (e.g., home and school, or home and work) to make a diagnosis (2).

Although the precise origins of ADHD are unknown, the onset is typically in developmental age and usually persists through adulthood with multifactorial origin. ADHD's etiology is unknown; nevertheless, scientists think that a mix of developmental, environmental, and genetic variables may be involved. Approximately 80% of ADHD is believed to be caused by genetic factors. Other causes includes environmental toxins, nutrition, smoking and alcohol use during pregnancy, premature birth and illness and injury (4).

Given the disease's high burden, early detection and treatment efforts alone will not suffice to diminish the prevalence and economic costs of this disorder, as a result, it would be good to investigate risk factors for ADHD. An earlier study from the United States indicated that TV usage, participation in sports, two-parent family structure, and family members' smoking status were significantly associated with ADHD (5). Researchers from Egypt (Menoufia Governorate) also reported associations between ADHD and factors like a low socioeconomic level, higher birth order, male gender, smoker fathers, consanguineous parents, family history of ADHD, low birth weight, artificially fed children, and pupils living with a single parent (6). Additional factors like Maternal complications during pregnancy, attending primary school, history of head trauma, maternal alcohol use during

pregnancy, bottle feeding during the first six months, and child's age 6–11 years were significantly associated with ADHD (7).

Conceptual issues surrounding ADHD include the overdiagnosis or underdiagnosis of the disorder, the potential for comorbidity with other mental health conditions, and the issue of prescribing stimulant medication to individuals with ADHD (8). Some practitioners argue that ADHD is over diagnosed and that the symptoms of the disorder are often attributed to other factors, such as behavioral problems or anxiety. Other critics suggest that ADHD is underdiagnosed and that individuals with the disorder may struggle without proper treatment (9). On the contrary, others argue that ADHD is rather misdiagnosed and so they forward their recommendations for how to better support primary care physicians in their diagnosis of ADHD (1, 9). Inconsistencies in theories and concepts surrounding ADHD have also been identified. However, studies thus far have produced mixed results, making it difficult to draw firm conclusions (8).

1.2. Statement of the Problem

The foundation of every child's long-term well-being and the guarantee of a happy, healthy life is optimal for early childhood development (ECD) (10). Optimizing school preparation for inclusive and equitable quality education for the most disadvantaged and marginalized children, particularly for disabled children, is the global vision and commitment of ECD of the UNs (11).

According to the 2010 global burden of diseases (GDB) study, which was the first to include ADHD for burden quantification, the year life disability/disability-adjusted life year of ADHD (YLDs/DALYs) was 491,500. Together, conduct disorder and ADHD accounted for 0.80 % of total global DALYs and 0.25% of total global DALYs (12). It has been linked to higher healthcare costs for individuals and their families. Healthcare costs for people with ADHD in the United States appear to be higher when compared to age-matched controls. A historical population based cohort study, published in 2001, which monitored 4880 people and compared the nine-year median medical expenses per person reported that ADHD medical costs were US\$4306, while non-ADHD medical costs were US\$1944 (i.e. more than double) ($p < 0.01$) (13).

For both individuals and society, untreated ADHD can have serious financial and social repercussions. Untreated ADHD can be expensive, resulting in missed work, medical bills, and social and legal consequences. A study done in Australia showed the total social and economic cost of ADHD in 2018 to 2019 was US\$12.76 billion (with per person costs of US\$15,664 per year) (14).

Moreover, ADHD is considered a disability from both legal and medical perspectives in the USA under the rehabilitation act of 1973 and the Americans with Disability Act (ADA) (15). In the hope of alleviating a major health cost, in 2019, the American Academy of Pediatrics (AAP) released updated guidelines on ADHD that uphold the central role of early diagnosis and timely treatment (16).

The scarcity of data on ADHD in Sub-Saharan Africa, particularly Ethiopia, reflects the lack of focus on mental health in general and on optimum early childhood development in particular. A mini article review have indicated that there are challenges and gaps in the diagnosis, treatment, and referral of children with ADHD and other mental illness majorly because of lack of knowledge, stigma, cultural attitudes, lack of specialists with the necessary training, inadequate facilities, and the high cost and limited availability of pharmaceuticals (17).

However, as demonstrated by a multitude of studies worldwide, ADHD prevalence estimates were 7.6 % for those under the age of 12 years and 5.6 % for adolescents between the age of 12 and 18 years (18). The prevalence of ADHD symptoms in Arab nations varies considerably between 1.3% and 16% (8) and studies conducted in Italy reported a prevalence of ADHD ranging between 2.9% - 5.9% (19). Similarly, Africa had a combined prevalence of 7.47% in children and adolescents (20). Cross- sectional studies done in Ethiopia report an overall prevalence of ADHD ranging between 7.3% - 13% from different settings (7, 21-24).

Additionally, it is crucial to identify contributing variables in the treatment of ADHD in children and adolescents for several reasons. One, treatment plans can be customized to the child's and family's unique requirements and preferences. Second, for monitoring the effectiveness and safety of different interventions such as behavioral therapy, medication, or combination therapy. And lastly, to reduce stigma and raising understanding and acceptance of mental health services among families, communities, and children can be beneficial, particularly in low-resource settings where traditional and religious views may impact treatment choices and help-seeking behavior (16, 25, 26).

It is noteworthy that ADHD is a chronic disorder that may impact many aspects of an individual's life, including academic problems, social skills difficulties, and strained parent-child interactions. Socially dysfunctional children with ADHD have significantly higher rates of comorbid psychiatric conditions like anxiety, conduct, and substance use disorders. ADHD affects not just the child, also the child's parents and siblings, producing disruptions in family and marital functioning (1).

1.3. Rationale of the Study

From different searches to the best of the investigator's knowledge, only 1 published hospital-based research done to assess the prevalence and associated factors of ADHD in Ethiopia. The vast majority of children with ADHD remain undiagnosed and receive no specialized care. Likewise, in existing works of literature, there has not been a comprehensive exploration of the significant factors like emotional and behavioral problems of children, in Ethiopia, indicating the importance of performing further studies to understand these factors. Thus, this study aimed to determine the prevalence of ADHD and its related factors at different governmental hospitals, in Addis Ababa, Ethiopia.

The findings of this study provide important information regarding the prevalence of ADHD in hospital setups in Addis Ababa, which is currently unknown. This information can help policymakers like the Federal Ministry of Health (FMOH) to develop effective prevention and management strategies for children and adolescents suffering from ADHD in the country. It can also help healthcare providers and caregivers to identify the risk factors associated with ADHD which can be used to develop targeted interventions to prevent or manage ADHD in children. Furthermore, the study could foster larger-scale research in the area, which will be more generalizable and have a greater impact on the understanding of ADHD globally.

2. Literature Review and conceptual framework

2.1 literature review

ADHD is a neurodevelopmental disorder that affects an individual's ability to control their behavior, focus their attention, and regulate their impulses. ADHD is divided into three subtypes: predominantly inattentive, predominantly hyperactive-impulsive, and combined subtypes. To diagnose ADHD, an individual must have exhibited symptoms consistent with the disorder since childhood. There are several theories on the causes of ADHD, including genetics, environmental factors, and brain structure and function (1).

ADHD affects people of all ages, and its prevalence rates are known to vary between children, adolescents, and adults. Studies show that ADHD occurs in 7 to 8 percent of prepubertal elementary school children, about 5 percent of youth including children and adolescents, and about 2.5 percent of adults (1). In 2023, the global prevalence of ADHD in children and adolescents was determined to be 7.6% (95% CI: 4.8-7%) using a systematic review and meta-analysis which implemented 61 cross-sectional researches (96,907 children aged 3 to 12 years) (27). A meta-analysis of 67 studies in China, with a total sample size of 275,502 participants indicated that the prevalence of ADHD was 6.26% (95% CI: 5.36–7.22%) Sixty-seven papers were included in a systematic review carried out in China, and the pooled prevalence of ADHD among children and adolescents was 6.26% (95% CI: 5.36-7.22%). The subtypes with the highest prevalence rates were ADHD-I, followed by ADHD-HI, and ADHD-C (28). An extensive meta-analysis on the prevalence of ADHD in Italy was published, fifteen distinct studies in all, they found an average prevalence estimate of 5.9% (1.4 to 16.7%) based on symptom criteria (19). A systematic review done in Arab countries using 22 cross sectional studies found that the prevalence of ADHD ranged between 1.3-16%, prevalence of hyperactive type ADHD between 1.4- 7.8%, and the prevalence of inattention type between 2.1-2.7% (29). In Africa, 12 studies that satisfied the inclusion criteria were included in the final analysis of an African meta-analysis, and the combined prevalence of ADHD in children and teenagers was 7.47% (95% CI 60–9.26) (20).

The prevalence of ADHD in Fayoum City, Egypt, among school-aged children was 21.8% and 16.2% based on the teacher and parent scales respectively (30). By combining reports from parents and teachers, among school-age children in Botswana and in a study based on a hospital set up in Uganda the incidence of ADHD ranged between 11.7% and 12.3% (31, 32). The distribution of ADHD with the highest prevalence in Botswana was the presentations of the predominantly inattentive type (7.2%, n = 125) followed by the hyperactive/impulsive (1.2%, n = 20), and the combined (3.9%, n = 68) subtypes (32).

In community-based cross-sectional studies done in Girja, southwest, and northeast Ethiopia the overall prevalence of ADHD was 7.3 %, 9.9%, and 13% respectively (21-23) and on the other hand a study done in a hospital-based setting in west ambo, the prevalence was 8.4% (20).

Depending on which source or both sources of questionnaire use (teacher or parent) was utilized to determine the subtypes, a study done in the US revealed significant variations in the distribution of ADHD subtypes which concluded that the ADHD subtype distribution is sensitive to how symptom information is combined (33).

In addition, there was a substantial correlation between ADHD and factors including watching TV, participating in sports, having a two-parent family, and whether or not family member's smoke (34). In contrast to other earlier studies, obesity was not found to be significantly related to ADHD and in the same study there was a higher likelihood that a child may be diagnosed with ADHD if they are depressed, anxious, have health insurance, or are male (34). Also a study done in China has shown the co-occurrence of internalizing symptoms, like depression and anxiety, with ADHD (35). New studies done in US showed that early childhood traumatic head injury was associated with increased risk for secondary ADHD (36, 37).

Other researchers from Egypt also reported associations between ADHD and factors like child exposure to punishment, irritable parents' relation, poor parent-child relationship, watching TV, cyanosis, and head trauma (30). Moreover, ADHD was more likely in children with parental consanguinity and whose mothers were exposed to passive smoking during pregnancy in the above study.

ADHD was also closely related to maternal pre-pregnancy obesity and overweight, pre-eclampsia, hypertension, paracetamol exposure, and childhood atopic illnesses (5). Maternal pre-pregnancy obesity, overweight, and smoking during pregnancy are confounded by familial or genetic characteristics, according to previous familial studies, and more reliable research is needed to prove the link (5).

Studies done in Ethiopia show maternal complications during pregnancy, mothers' illiteracy, attending primary school, history of head trauma, maternal alcohol use during pregnancy, bottle feeding during the first six months, and children aged 6–11 were significantly associated with ADHD (22). A meta-analysis study published by the American Academy of Psychiatry concluded that VLBW subjects had an increased risk of ADHD diagnosis and symptomatology compared with controls (38) and also another study which published that birth weight is indirectly associated with ADHD severity via disturbance of neuropsychological functions (39).

Moreover, a study done in Spain showed that being the middle child and living with both biological parents appeared to be a protective factor against the development of ADHD (40). A recent study done in Germany attempted to examine the association of birth order and number of siblings with the occurrence of ADHD and it

came to the conclusion that there is an increased of ADHD in first born and also in children with no siblings, while the number of siblings was not associated with ADHD (41). Another research done in Spain came with a similar result where ADHD was associated with birth order and that firstborn children had nearly twice the ADHD risk of children with other birth orders (42).

2.2 Conceptual framework

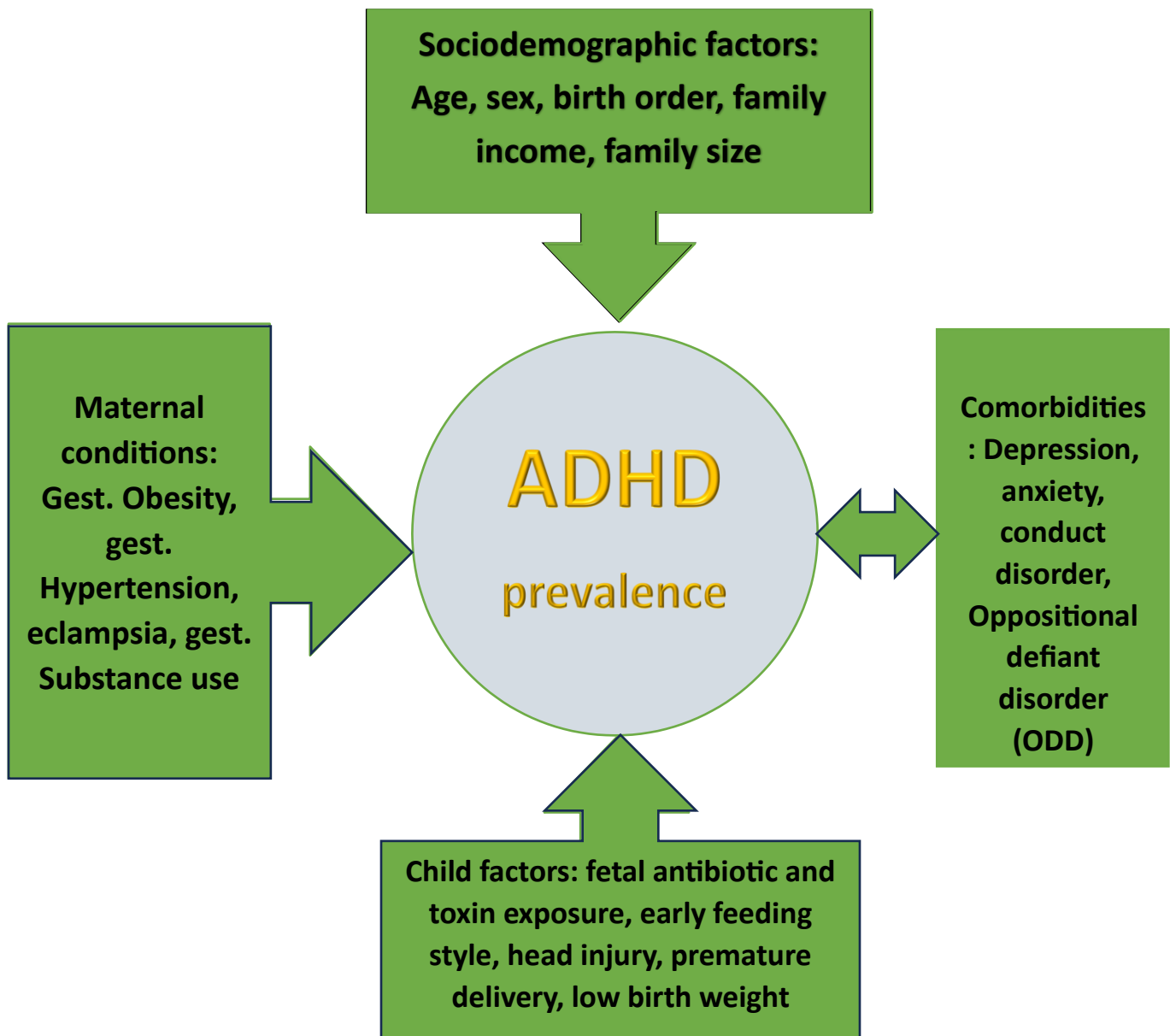


Figure 1 Conceptual framework (7, 22, 31, 43, 44)

3. Objectives

3.1 General objective

- To assess the prevalence of ADHD and associated factors among children and adolescents that visit outpatient departments in public hospitals, in Addis Ababa, Ethiopia, 2023.

3.2 Specific objectives

- To determine the prevalence of ADHD among children and adolescents that visit outpatient departments at public hospitals in Addis Ababa, Ethiopia, 2023.
- To identify the associated factors with ADHD among children and adolescents that visit outpatient departments at public hospital in Addis Ababa, Ethiopia, 2023.

4. Research Methods and Procedure

4.1 Study Design:

The study employed facility-based, qualitative cross-sectional research design.

4.2 Study Setting:

There are 12 public hospitals in Addis Ababa city administration, six of them administered by the Addis Ababa Health Bureau, five by the Federal Ministry of Health, one by the Ministry of Defense, and one by the Police Force (45). This study was conducted at one general (SPHMMC) and two specialized public hospitals (Ras Desta Damtew Memorial Hospital and Menelik II Referral Hospital), outpatient Department of Pediatrics and ophthalmology (PROPD) which were selected randomly.

SPHMMC was established in 1968 E.C and is a rapidly expanding comprehensive hospital, especially after starting medical college in 2000 E.C/2007 G.C. It has 19 departments with 14 general specialty training and 16 sub-specialty training departments. The Department of Pediatrics and Child Health is one of the specialty units at SPHMMC which includes a pediatrics orthopedics ward, one Neonatal Intensive Care Unit (NICU), one Pediatric Intensive Care Unit (PICU), one pediatric Regular Outpatient Department (PROPD), and different referral clinic programs. It also consists of one pediatric emergency ward and four admissions wards. About 6,900-7,100 children and adolescents visit the Pediatrics regular OPD yearly. Ras Desta Damtew Memorial Hospital was established in 1924 E.C and is well known for its specialization on Ear, Nose and Throat (ENT) and ophthalmology services. It provides all types of clinical services including pediatrics outpatient services where an average of 5,900 children and adolescents visit the PROPD yearly. Moreover, Menelik II Referral Hospital was established in 1909 E.C and is the first hospital in Ethiopia. It is known for its specialized care on ophthalmology, and it provides different types of clinical services by 17 departments, including pediatrics inpatient and outpatient services. The PROPD unit has an average of 3,600 patient flow rate in a year.

4.3 Study Population:

4.3.1 Source population

The source population included all children and adolescent patients who received services at the pediatric regular outpatient department (PROPD) of SPHMMC, and both PROPD and ophthalmology OPD at Ras Desta hospital and Menelik II hospital, during the study period.

4.3.2 Study population

All children and adolescents between the ages of 5- and 14-years visiting outpatient services at the PROPD and ophthalmology OPD at SPHMMC, Ras Desta hospital and Menelik II hospital, whose caregivers or parents volunteered to participate in the study and who fulfilled the inclusion criteria during the data collection period were sampled. This age range was selected as the ADHD screening questionnaire that was implemented, i.e. the DBD rating scale, is applicable for those at and above the age of 5 years (44) and as most of the PROPDs age limit for patient visit is 14 years of age.

4.4 Inclusion and exclusion criteria

4.1 inclusion criteria

- All children and adolescents between the ages of 5 and 14 years seen during the data collection period and whose parents/guardians consented to participate in this study were included in this study.
- Parents or caregivers who know the child's condition for the past 6 months were included in this study.

4.2 Exclusion Criteria

- Parents or caregivers who were not willing to respond to the questionnaire.

4.5 Sample Size:

4.5.1 Sample size for the first objective

• The sample size was calculated using 8.4 % as prevalence of ADHD among children and Adolescents from study done in West Shewa (7). A 95 % level of certainty and a maximum discrepancy of 5% were assumed. A single population proportion formula given below was used to calculate the sample size. $n = (Z^2 P (1-P) / d^2$

$$n = (1.96)^2 \times (0.084) (1-0.084) / (0.05)^2$$

$$n = (3.8416) (0.084) (0.916) / 0.0025 = 118$$

n= 130, adding 10% non-response rate

4.5.2 Sample size for second objective

The sample size for the second objective was calculated using Epi info 7 Assumptions CI=95% Power=80%

Table 1 Double proportion sample size determination for the second objective (23)

Variable	CI	Power	OR	Sample		
				Exposed	Non-exposed	total
Financial crises	95%	80	4.76	28	42	70
Previous history of mental health problem	95%	80	8.45	16	24	40
C/S delivery	95%	80	6.38	21	31	52
Lifetime use of substance	95%	80	2.43	83	124	207

The sample size calculated for the first objective (130) is less than sample size calculated for second objective (207). Therefore, the larger sample size was taken and adding 10 % nonresponse rate resulted in 227 which will be the minimum sample size required for this study.

This sample size was proportionally allocated between the three hospitals:

PROPD- SPHMMC (n=7000 per year, 583 per month), PROPD Ras Desta hospital (n=5900 per year, 492 per month), and PROPD Menelik II Hospital (n= 3600 per year, 300 per month). This gave 96, 81, and 50 respectively.

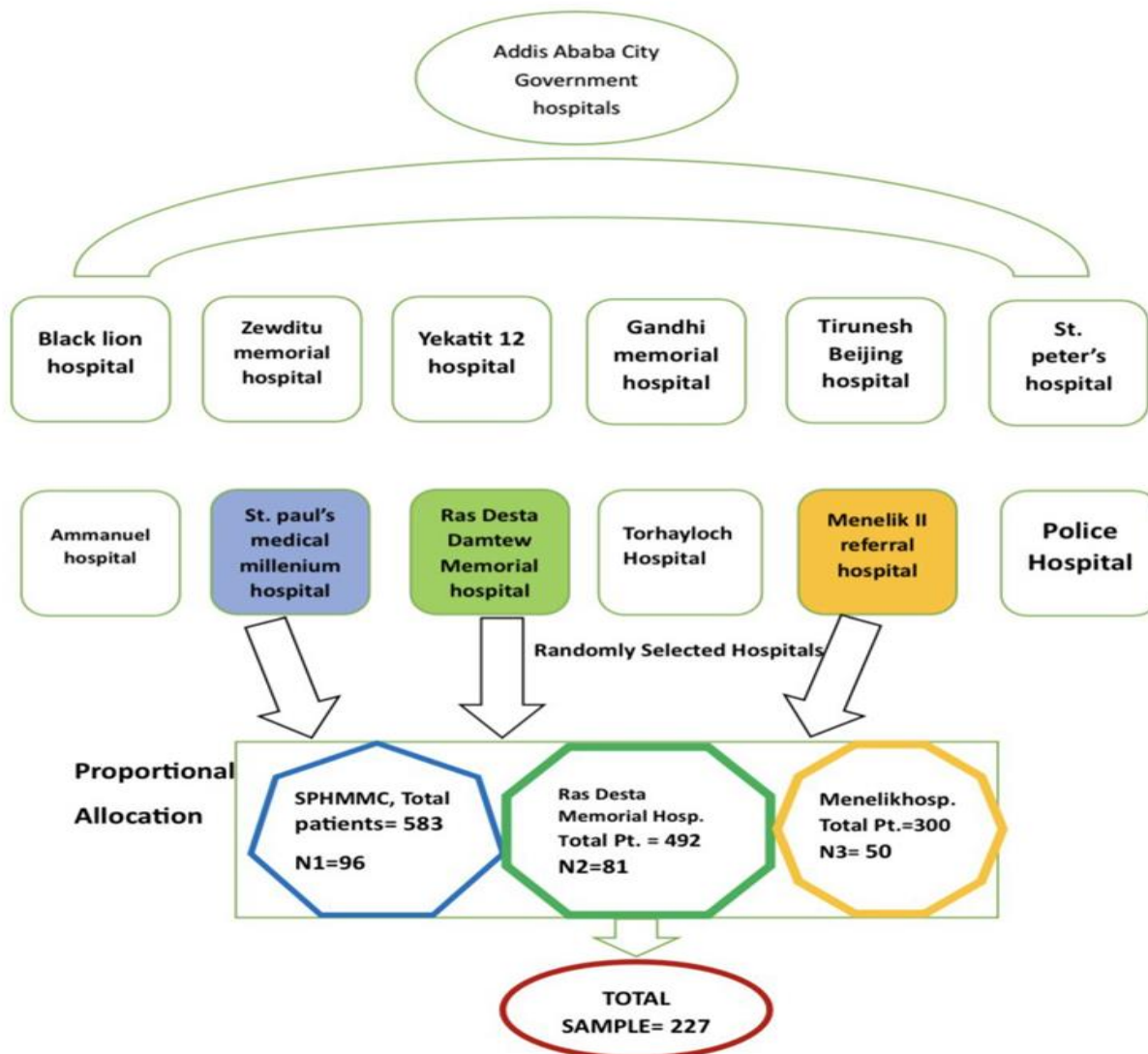


Figure 2 Schematic representation of sampling procedure

4.6. Sampling Procedures:

A systematic random sampling method was used (every fifth caregiver at SPHMMC, every fourth at Ras Desta hospital and every third at Menilik hospital) after the first participant was selected by lottery method. If the respective sampled participant refused to partake in the study, the next participant was included in the study.

4.7. Measurement

4.7.1. Study Variables

4.7.1.1 Dependent variables

- ADHD

4.7.1.2 Independent variables:

- Sociodemographic factors:
 - parental and child age,
 - child sex, birth order,
 - parental education level,
 - parental occupation,
 - family income,
 - family size,
 - residence,
 - family history of psychological & neurological illness.
- Maternal risk factors:
 - maternal history of psychological & neurological symptoms,
 - mother's age at the time of pregnancy,
 - substance -alcohol, cigarette, khat - use during pregnancy,
 - drug/medication use during pregnancy,
 - insecticide/ pesticide exposure during pregnancy,
 - duration of pregnancy,
 - maternal complication during pregnancy,
 - maternal complication during delivery,
 - mode of delivery.
- Child factors:
 - child feeding style during the first 6 months of life,

- infant complication after delivery,
- history of head injury since birth,
- number of screen hours.
- Psychosocial factors:
 - parental marital status and
 - child living condition.

4.8 Data Collection instruments and procedure:

Quantitative data were collected using a questionnaire containing five parts. The first part of the questionnaire contained questions that helped to collect data related to the demographic characteristics of the participants. The second part contained a questionnaire that attempted to assess the child's health conditions. The third part contained questions to assess the maternal and family health characteristics of the participants. The fourth part contained a scale designed by Pelham and colleagues (1992) which is a proxy-administered (parent or teacher) questionnaire that is based on the DSM-IV diagnostic criteria for ADHD, ODD, and conduct disorder. The last part was a scale designed by a child psychiatrist, Robert N. Goodman (1997) to assess emotional and behavioral problems in children and adolescents.

4.8.1 Questionnaires

4.8.1.1 Socio-demographic characteristics questionnaire

To get data related to participants' socio-demographic characteristics (sex, age, birth order, parents' age during the pregnancy time of the child, parent's education level, parents' occupation status, parents' marital status, family size, family income, and child living circumstance), questions were adopted from research done at a comparative setup. In addition to items on socio-demographic information, questions regarding the child's screen time and parents' concern about their child's language development and communication were included by expert opinion with adjustments made to ensure applicability to our current study.

4.8.1.2 Child health conditions

This section assessed the child's previous and current mental and chronic medical condition by implementing a questionnaire from previous research done in a comparative setting.

4.8.1.3 Maternal and family health conditions

This section also assessed the child's mother and family, previous and current, both mental and chronic medical conditions by implementing a questionnaire from previous research done in a comparative setting. It also assessed maternal complications during pregnancy and delivery, maternal exposure to insecticides, pesticides, and prescribed medications during pregnancy.

4.8.1.4 Disruptive Behavior Disorder Rating Scale

The presence of ADHD was assessed using the Disruptive Behavior Disorder rating scale (DBD) rating scale, Amharic translated version. It has been validated and used previously in a comparative setup.

The DBD rating scale is a proxy administered (parent or teacher) questionnaire that is based on the DSM-IV diagnostic criteria for ADHD. It has a Cronbach's $\alpha = 0.9$ for ADHD (44). In our setup also, it was found to be easily understood by participants and when internal consistency was checked while computing with SPSS, the Cronbach's α equated to 0.9 as well.

Additionally, all DBD items had high negative predictive power (0.6 - 0.9) and positive predictive power, high specificity (93.5 – 99.7%), and low false positive rates with a PPP of (0.23 – 0.55) for the ADHD item (25). It showed enough technical merits to be used as a preliminary tool for identifying children who may require further clinical evaluation by mental health experts for behavioral disorders (25).

It is a 45-question screening measure of which we used 26 questions. It has subscales for inattention and hyperactivity-impulsivity with 18 questionnaires and 2 behavioral neurology combined subtypes. Each symptom is rated on a 4-point scale indicating the occurrence and the severity of symptoms: 1 (not at all), 2 (just a little), 3 (pretty much), or 4 (very much). The symptom is accepted as positive when the respondent rates it as pretty much and or very much. To say the study subject has inattention, six or more symptoms of inattention need to be rated as pretty much and or very much. Similarly, the study subject is considered as having a hyperactivity-impulsive subtype of ADHD, if he/ she rated six or more of the hyperactivity-impulsivity symptoms as pretty much and or very much. The study subject is considered as having the combined subtype of ADHD, when he/she responds six or more pretty much for each of the hyperactive impulsive symptoms and inattention symptoms (44).

4.8.1.5 Strength and Difficulty Questionnaire

The factors associated with the rate of ADHD were measured using the Strengths & Difficulties Questionnaire for ages 4-17 (SDQ 4 -17) (46), Amharic version, which is found online for free. It is a brief 25-item measure of behavioral and emotional difficulties, of which 20 questions are used, that helped to assess psychological adjustments in children and aimed to detect any emotional and behavioral problems. When the internal consistency was checked while computing with SPSS, the Cronbach's alpha equated to 0.71.

4.8.2 Data Collection Procedure

4.8.2.1 Pilot study

A pilot study was conducted on a randomly selected 11 children and adolescents between the age group of 5 and 14 years, that visited a government health center, in Addis Ababa. Confusing alternatives in some items were modified.

4.8.2.2 Data collection, Quality Control and Management

Before the main data collection was done, an orientation was given to the data collectors (2 nurses working at the respective OPDs each) regarding the purpose of the study, participant voluntariness, and confidentiality. After doing all this, and with their willingness assured, data was collected at the waiting area. The collected data was reviewed and checked for completeness and consistency by the principal investigator regularly during the data collection time. The data was collected from October 21 – December 1, 2023. Before analysis was done data was pre-coded and cleaned and then data entry was done using Epi-info version 7 and the entered and cleaned data was exported to Statistical Packages for Social Science (SPSS) version 20.0 software for data analysis by the principal investigator.

4.9 Operational Definition:

- Inattention: When the child has six or more symptoms rated as pretty much of inattention of the DBD rating scale (44).
- Hyperactivity-Impulsivity: When the child has rated six or more of the hyperactivity-impulsivity symptoms of the DBD rating scale as pretty much (44).
- ADHD-C: is when the child responds six or more pretty much for each of hyperactive- impulsive symptoms and inattention symptom (i.e. when he /she fulfill criteria for both inattentive and hyperactivity-impulsivity) (44).
- Previous Mental Illness: Information either subjectively told or medically confirmed any of mental health problem manifestation.

- Use of Substances at conception: is the use of at least one of the substances (cigarette, alcohol, khat, and others) for at least one time throughout the time of pregnancy of the child being asked (1).
- Perceived low birth weight: is subjective judgment or impression that a new born has a lower birth weight than what is considered typical or expected for the gestational age (43).
- Caregiver: a member of the participant's family or other close relative who sees them the most, spends time with them frequently, helps them out financially, socially, mentally, and physically, and has primarily served as collateral for the participant for at least six months.

4.10 Data processing and analysis

Once the data had been exported to SPSS version 20 from the Epi-info version 7, descriptive and inferential statistical methods were used to analyze data. An effort was made to describe research participants' demographic information by employing descriptive statistics (frequency counts and percentage values). Moreover, because of the nature of the data, which was non-normal distribution, median was used as a cut-off point for categorization and standard deviation were calculated for continuous demographic variables. To determine the prevalence of ADHD, frequency counts, and percentage values were used. To look into associations between ADHD and each of the independent factors, assumptions for binary logistic regressions were checked. Multicollinearity among independent variables was checked by looking at variance inflation factors (VIF) and tolerance- values. A VIF value of <10 and Tolerance- values > 0.1 was used as a cutoff point for indicating no collinearity. Then binary logistic regression was done to identify the associated factors. Variables with a p-value of <0.25 were included for analysis using multivariate logistic regression and significance was determined at a p-value of < 0.05 to identify the independent association. Data were presented in text, tables, and figures.

4.11 Ethical Considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) of SPHMMC (Pm 23/176). After official permission from the college was obtained, data collection was started at the college. A separate ethical clearance was required to continue the research at the other two hospitals, Ras Desta Memorial Hospital and Menelik II referral hospital, from Addis Ababa city administration health bureau. After acquiring the mandatory clearance from the health bureau, data collection was started at those hospitals.

An information sheet explaining the purpose of the study and written consent was provided for the participants. Only after having adequate information about the study and the issue of confidentiality and privacy, parents/guardians who agreed to be involved in this study were involved. Children aged 12 and above were asked to give assent also. Confidentiality of the information collected was maintained by omitting participants' names

from the questionnaire, participants who volunteered to leave their phone numbers were reassured about the confidentiality. The data was pre-coded. With the preliminary analysis, significant candidates who were found to have ADHD symptoms were tracked back and recommended to have further psychiatric screening at the child psychiatry OPD so that they get an appropriate evaluation and available treatment.

4.12 Dissemination Plan

After the research completion and finalization of the report, the findings of the study will be disseminated to the department of Psychiatry, and it will be presented as one of the partial fulfillments of residency program in Psychiatry department.

SPHMMC's academic and Addis Ababa city administration health bureau, research office, will receive a final report that includes interpreted findings, discussion, and suggestions. All efforts will be made to publish the results to the local and international journals and to present it in national and international scientific conferences to be accessed by the public, and policy makers.

5. Results

5.1 Socio-demographic characteristics:

Out of 227 questionnaires, all were completed by participants, giving a 100 % response rate. Of the 227 responders, females were much more in number than males, 59.9% (136). The age of the study participants ranged from 5 – 14 years, with a mean age of 9.02 years ($SD \pm 2.743$).

The mean age of mothers during the time of their pregnancy was 26.78 years ($SD \pm 5.626$) and that of the fathers was 33.44 years ($SD \pm 6.873$), with the mode being 26 and 30 years, respectively. The majority of the participant's parents were living together, 91.6% (208) but 8.4 % (19) were living with single parent and 2.6% (6) were living with relatives.

On the childbirth order, firstborn children took 54.6% (124) of the total sample. The majority of the participants are from urban residences, 200 (80.1%), and also from a family size of 5 and below, 170 (74.9%).

The median income of parents was 8000 birr, the mean was 9885 birr (± 8351.76) per month while 52.9 % (127) earned less than the median. The median screen time of a child is 2 hours ($SD \pm 1.930$), while 31.3 % (71) of them had screen time above the average.

Table 2 Sociodemographic characteristics of children and adolescents (age 5-14 years) who visited regular OPDs at 3 different hospitals in Addis Ababa, 2023

Characteristics	Categories	Frequency	%
Child Age	5-9	124	54.6
	10-14	103	45.4
Child Sex	Male	91	40.1
	Female	136	59.9
Childbirth order	First child	124	54.6
	Second & above	103	45.4
Mother Age During Pregnancy	15-26 years	122	53.7
	>26 years	105	46.3
Father Age During Pregnancy	15-32years	95	41.9
	>32 years	132	58.1
Mother Education level	Unable to read and write	33	14.5

	Primary Edu & able to read and write only	49	21.6
	Secondary education	55	24.2
	Diploma, Degree & above	90	39.6
Father Education Level	Unable to read and write	13	5.7
	Primary Edu & able to read and write only	38	16.8
	Secondary education	65	28.6
	Diploma, Degree & above	111	48.9
Mothers Occupation	unemployed	104	45.8
	Employed	123	54.2
Fathers Occupation	unemployed	11	4.7
	Employed	216	95.3
Parents Marital status	Separated	19	8.4
	Married	208	91.6
Parents Living Condition	Together	208	91.6
	Separated	19	8.4
Family Monthly income	0-8000 birr	120	52.9
	> 8000 birr	107	47.1
Family Size	2 -5	170	74.9
	> 5	57	25.1
Child Living Circumstance	Single parent	19	8.4
	Both parents	202	89.0
	Relatives	6	2.6
Family Residence	Urban	200	88.1
	Rural	27	11.9
Child's Average screen time	0 - 2 hours	156	68.7
	> 2 hours	71	31.3

5.2 Child's Clinical Characteristics

Out of the 227 children who participated in the study, 4 of them (1.8%) had a diagnosed mental illness and 8.4 % (19) had also diagnosed chronic medical conditions. 1.3 % (3) had a known family history of mental illness and 4.4 % (10) had a family history of a chronic medical condition. Moreover, 21.1 % (48) of parents responded that their child's language development and communication concerned them.

Table 3 Clinical characteristics of children and adolescents (age 5-14 years) who visited regular OPDs at 3 different public hospitals in Addis Ababa, 2023

Characteristics	Categories	Frequency	%
Child's history of known mental illness	No	223	98.2
	Yes	4	1.8
Types of Child's Mental Illness	Autism	2	.9
	Intellectual disability	2	.9
Child's history of known chronic medical illness	No	208	91.6
	Yes	19	8.4
Types of the child's medical illness	epilepsy	8	3.5
	cardiac	1	.4
	others	10	4.4
Family history of known mental illness	No	224	98.7
	Yes	3	1.3
Family history of medically confirmed physical illness	No	217	95.6
	Yes	10	4.4
Types of family medical illness	Asthma	5	2.2
	Diabetes	3	1.3
	Epilepsy	2	.9
Family Concern about Child's language development and communication	No	179	78.9
	Yes	48	21.1

5.3 Maternal and neonatal characteristics

The mean age of mother's during the time of their pregnancy was 26.78 years ($SD \pm 5.626$) and 2.6% (6) of them had a known medical illness prior to their pregnancy and 1.8 % (4) of them also had a known mental illness priorly. During the time of pregnancy 14.1 % (32) encountered complications - Hypertension 8.4% (19), Diabetes 2.2 % (5), Asthma 2.2 % (5), and Bleeding 1.3% (3). 4% (9) of mothers had exposure to pesticides and antimalaria and 17.6 % (40) had taken prescribed medications during their pregnancy period.

Concerning neonatal conditions, 10.1 % (23) were born preterm, 15.0 % (34) had a perceived low birth weight and delivery was via SVD with no medication in 62.1 % (141), Caesarian section being the second common 23.8 % (54). 6.2 % (14) reported that their child sustained a serious head injury priorly and 4.4% (10) reported of a serious medical illness like meningitis.

Table 4 Maternal and neonatal characteristics of children and adolescents (age 5-14 years) who visited regular OPDs at 3 different public hospitals in Addis Ababa, 2023

Maternal Characteristics			
Characteristics	Categories	Frequency	%
Mothers known medical illness before the pregnancy	No	221	97.4
	Yes	6	2.6
Mothers known mental illness before pregnancy	No	223	98.2
	Yes	4	1.8
Mother's known medical illness during pregnancy	No	195	85.9
	Yes	32	14.1
Types of confirmed maternal medical illness	Hypertension	19	8.4
	Diabetes	5	2.2
	Asthma	5	2.2
	Bleeding	3	1.3
Maternal exposure to pesticides or antimalaria during pregnancy	No	218	96.0
	Yes	9	4.0
Mothers who took prescribed medication during pregnancy	No	187	82.4
	Yes	40	17.6

Neonatal Characteristics			
Characteristics	Categories	Frequency	%
Child born after a term pregnancy	No	23	10.1
	Yes	204	89.9
Children born preterm or post term	7 months	2	.9
	8 months	20	8.8
	10 months	1	.4
Mode of delivery	SVD without medication	141	62.1
	SVD with medication/instrument	31	14.1
	Caesarian section	55	23.8
Skinny perceived Infants after delivery	No	193	85.0
	Yes	34	15.0
Weight of Skinny Perceived Infants	1500 – 2160 grams	13	5.6
	2160 – 2400 grams	21	9.7
Baby cried immediately	No	42	18.5
	Yes	185	81.5
Baby breastfed immediately	No	34	15.0
	Yes	193	85.0
Baby exclusively breastfed for 6 months	No	47	20.7
	Yes	180	79.3
Child sustained a serious head injury	No	213	93.8
	Yes	14	6.2
Child underwent serious brain illness like meningitis	No	217	95.6
	Yes	10	4.4

5.4 Maternal substance use Characteristics.

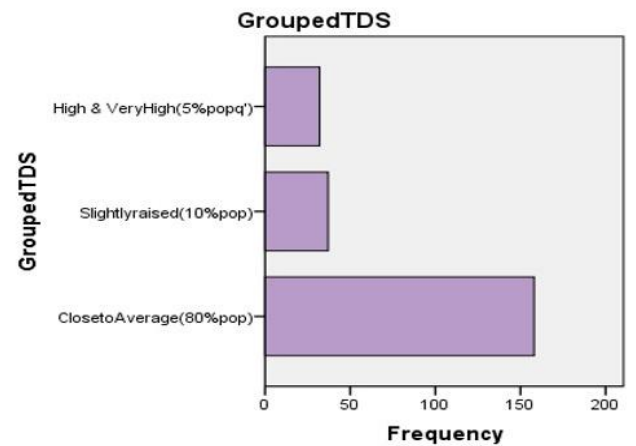
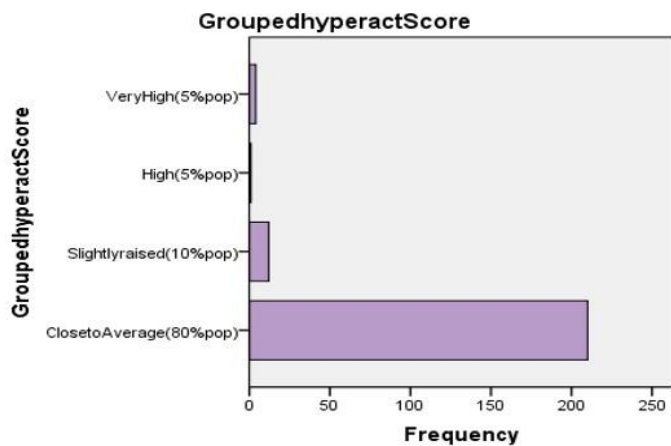
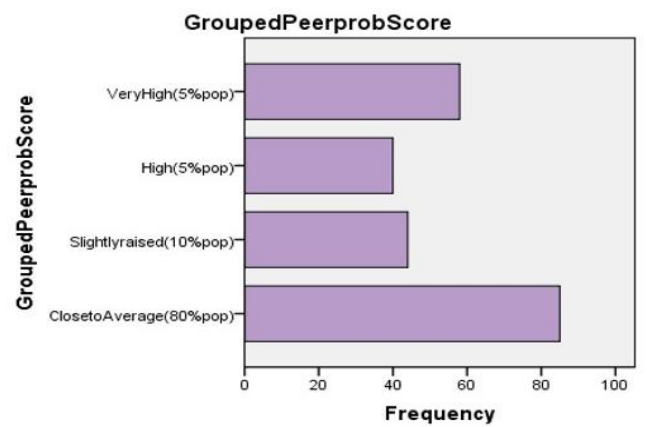
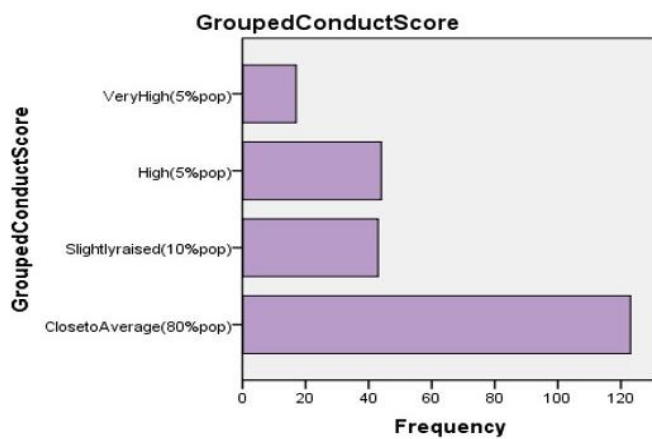
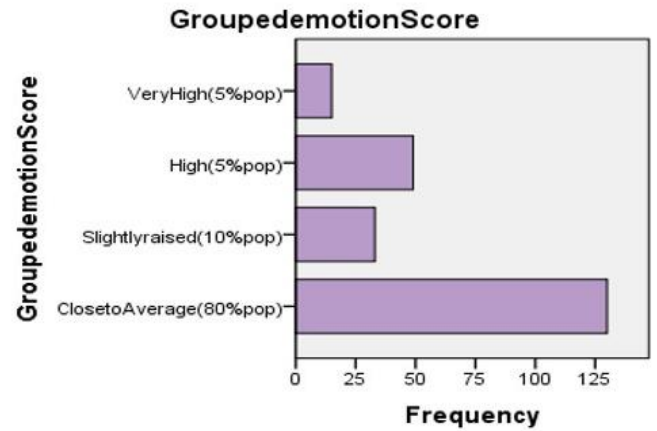
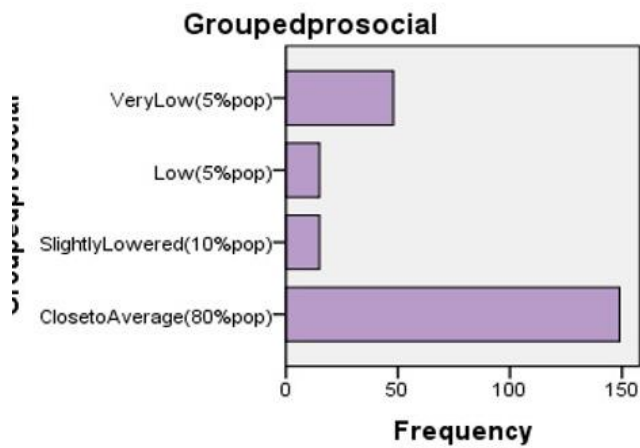
Alcohol was used in 21.1 % (48) of mothers during their pregnancy and other substances, i.e. khat and cigarette in 3.1 % (7) of mothers.

Table 5 Maternal substance use characteristics of mothers of children and adolescents (age 5-14 years) who visited regular OPDs at 3 different public hospitals in Addis Ababa, 2023

Characteristics	Categories	Frequency	%
Maternal substance use even once in her lifetime	Alcohol	70	30.8
	Others (Khat, cigarette)	10	4.4
	None	147	64.8
Maternal substance uses even once during her pregnancy time	Alcohol	48	21.1
	Others (Khat, cigarette)	7	3.1
	None	172	75.8

5.5 Psychosocial factors

The children's mental health status was assessed using five aspects of their emotional and behavioral difficulties as well as their prosocial behavior. On the prosocial scale 6.6% (15) scored low and 21.1% (48) very low. On the emotional problem, conduct problem, and peer problem scales, they scored 21.6% (49) high & 6.6% (15) very high, 19.4% (44) high & 7.5% (17) very high, 17.6% (40) high & 25.6% (58) very high, respectively. The total difficulty score was high in 7.5% (17) and very high in 6.6% (15) of the participants. Of the participants, 39.3 % (89) showed increased internalizing scores, and 5.7 % (13) showed increased externalizing scores. Moreover, 14.1% (32) of participants fulfilled the ODD criteria of the rating scale.



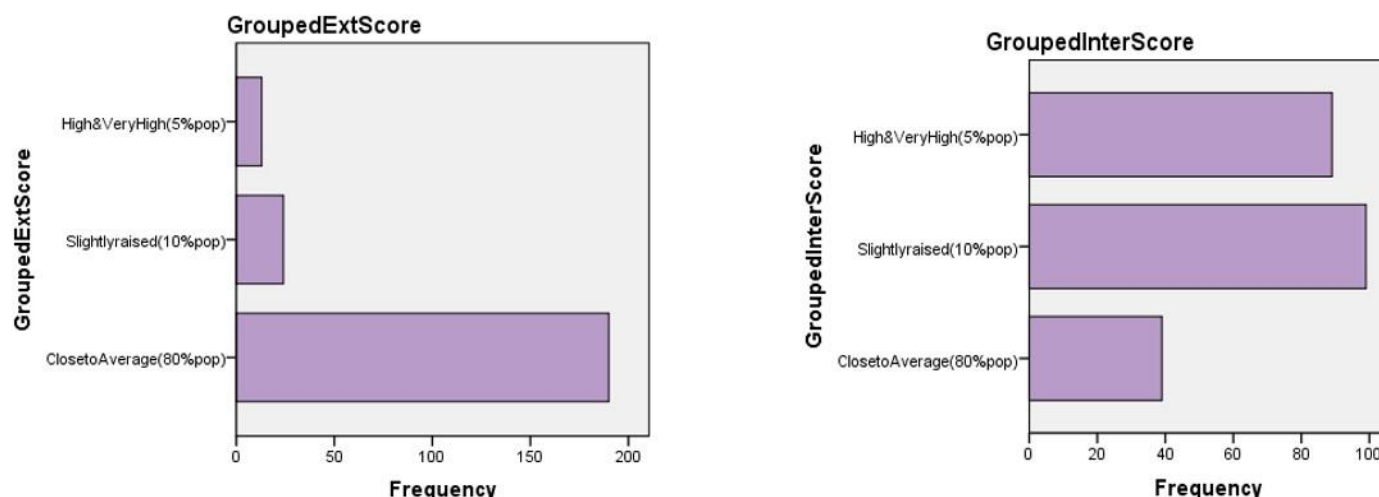


Figure 3 Psychosocial factors of children and adolescents (age 5-14 years) who visited regular OPDs at 3 different public hospitals in Addis Ababa, 2023, using the SDQ rating scale.

5.6 Prevalence of ADHD

In this study, the overall prevalence of ADHD among children and adolescents was 13.21 % (30), 95 % CI (9.1, 18.3). The hyperactive–impulsive type of ADHD was the most prevalent 12 (5.3%), followed by a comparative presentation of the inattentive and combined types 9 (4 %) each. The prevalence of ADHD was higher among females, 20 (14.7 %) than in males 10 (11 %). The highest prevalence of ADHD was at age of 7 years (16.7%), 10 years (17.2%), and 11 years (23.1%). In general, ADHD was higher in children aged 10 – 14 years (17.5 %) when compared to those aged 5 – 9 years (9.7 %).

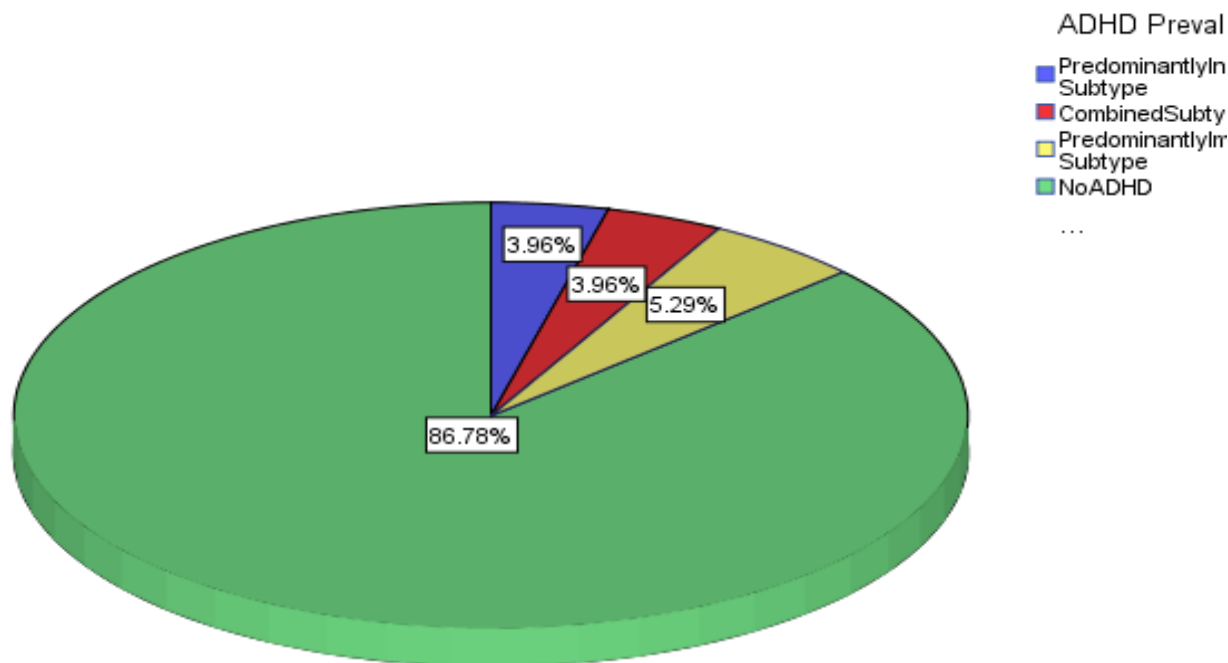


Figure 4 Prevalence of ADHD (with its subtypes) among children and adolescents (age 5-14 years) at 3 different public hospitals in Addis Ababa, 2023 (n=227)

5.7 Factors Associated with ADHD

5.7.1 Bivariate analysis

By doing the bivariate analysis with $p\text{-value} < 0.25$, the following variables were found to have moderate association with the occurrence of ADHD, i.e., the age of the child, the child's birth order, mother's and father's educational level being primary and less, child's mental illness, child screen time, mother's illness during pregnancy, perceived low birth weight at birth, breastfeeding immediately, breastfeeding exclusively, baby cried after birth, mother exposure to prescribed medications, child history of serious head injury, maternal substance use history during pregnancy, externalizing and internalizing signs, oppositional defiant disorder score and total difficulty score.

Table 6 Binary logistic regression of sociodemographic characteristics among children and adolescents (age 5-14 years) in public hospitals in Addis Ababa, 2023 (p-value 0.25)

Characteristics		Total	YES ADHD (%)	No ADHD (%)	COR with 95% CI	p-value
Child Age	5-9	124	12(9.7)	112 (90.3)	1	0.088*
	10-14	103	18(17.5)	85 (82.5)	1.976(0.903,4.324)	
Sex of child	Female	136	20 (14.7)	116 (85.3)	1.397 (0.621, 3.141)	0.419
	Male	91	10 (11.0)	81 (89.0)	1	
Mother age during pregnancy	15-30	178	23 (12.9)	155 (87.1)	1	0.803
	>= 31	49	7 (14.3)	42 (85.7)	1.123(0.451,2.796)	
Father age during pregnancy 1	5-30	95	12 (12.6)	83 (87.4)	1	0.826
	>= 31	132	18 (13.6)	114 (86.4)	1.092 .499 2.390	
Birth order	First child	124	13(43.3)	17 (56.7)	1	0.186*
	2 nd & older	103	111(56.3)	86 (43.7)	1.688(0.778,3.664)	
Family size	1-5	170	22 (12.9)	148 (87.1)	1	0.833
	>5	57	8 (14.0)	49 (86.0)	1.098(0.460,2.625)	
Child living with	Single parents	25	4 (16.0)	21 (84.0)	1.289(0.410,4.055)	0.664
	Both parents	202	26 (12.9)	176 (87.1)	1	
Average monthly income	0 – 8000 birr	120	16 (13.3)	104 (86.7)	1.022(0.473,2.207)	0.956
	>8000 birr	107	14 (13.1)	93 (86.9)	1	

*(p<0.25) variables which have statistically significant associated with ADHD in the bivariable logistic regression analysis

Table 7 Bivariate logistic regression of maternal, neonatal and psychosocial characteristics among children and adolescents (age 5-14 years) in public hospitals in Addis Ababa, 2023 (p-value < 0.25)

Characteristics		Total	YES ADHD (%)	No ADHD (%)	COR with 95% CI	p-value
Mother's illness during pregnancy	Yes	32	8 (25)	24 (75)	2.621 (1.050,6.544)	0.039*
	No	197	22 (11.3)	173 (88.7)	1	
Maternal Substance use during pregnancy	Yes	55	13 (23.6)	42 (76.4)	2.822 (1.270,6.272)	0.011*
	No	172	17 (9.9)	155 (90.1)	1	
Medically confirmed physical illness before pregnancy	Yes	6	1 (16.7)	5 (83.3)	1.324(0.149,11.740)	0.801
	No	221	29 (13.1)	192 (86.9)	1	
Maternal exposure to prescribed medicine	Yes	40	8 (20.0)	32 (80.0)	1.875 (0.767,4.581)	0.168
	No	187	22 (11.8)	165 (88.2)	1	
Child's mental illness	Yes	4	3 (75)	1 (25)	21.778 (2.186, 216.9)	0.009*
	No	223	27 (12)	196 (87)	1	
Child screen time	0 - 2.15 hours	156	24 (15.4)	132 (84.6)	1.970 (0.767,5.056)	0.159
	>2.15hrs	71	6 (8.5)	65 (91.5)	1	
Perceived LBW	Yes	34	9 (26.5)	25 (73.5)	2.949 (1.215,7.155)	0.017*
	No	193	21 (10.9)	172 (89.1)	1	
Baby cried immediately	No	42	10 (76.2)	32 (23.8)	2.578 (1.104,6.021)	0.029*
	Yes	185	20 (10.8)	165 (89.2)	1	
Baby breast feed immediately	No	34	9 (26.5)	25 (73.5)	2.949 (1.215,7.155)	0.017*
	Yes	193	21 (10.9)	172 (89.1)	1	

Baby breast feed exclusively	No	47	9 (19.1)	38 (80.9)	1.793 (0.761,4.226)	0.182*
	Yes	180	21 (11.7)	159 (88.3)	1	
Child sustained head injury	Yes	14	6 (42.9)	8 (57.1)	5.906 (1.888,18.477)	.002 *
	No	213	24 (11.3)	189 (88.7)	1	
Externalizing score	Close to average (80%)	190	12 (6.3)	178 (93.7)	1	
	Slightly raised (10%pop)	24	10 (41.7)	14 (58.3)	10.595 (3.897,28.804)	0.000*
	High & Very High (5%pop)	13	8 (61.5)	5 (38.5)	23.733(6.725, 83.756)	0.000*
Internalizing score	Close to average (80%)	39	1 (2.6)	38 (97.4)	1	
	Slightly raised (10%pop)	99	9 (9.1)	90 (90.9)	3.80 (0.465,31.047)	0.213*
	High & Very High (5%pop)	89	20 (22.5)	69 (77.5)	11.014 (1.42,85.305)	0.022*
Total Difficulty Score	Close to average (80%)	158	7 (4.4)	151 (95.6)	1	
	Slightly raised (10%pop)	37	7 (18.9)	30 (81.1)	5.033(1.645,15.403)	0.005*
	High & Very High (5%pop)	32	16 (50)	16 (52)	21.57(7.726,60.232)	0.000*
ODD score	Yes	32	10 (31.2)	22 (68.8)	3.977 (1.651,9.580)	0.002*
	No	195	20 (10.3)	175 (89.7)	1	

*(p<0.25) variables which have statistically significant associated with ADHD in the bivariable logistic regression analysis

5.7.2 Multivariate logistic analysis

Consequently, multivariable logistic regression analysis was done, and the following variables were found to be significantly associated ($P < 0.05$). Child age (AOR= 3.395, 95 % CI (1.054, 10.93)), Maternal illness during pregnancy (AOR= 0.241, 95% CI (0.072,0.802)), maternal substance use during pregnancy (AOR= 0.321, 95% CI (0.112,0.925)), externalizing score for slightly raised and high & very high score (AOR= 4.302, 95 % CI (1.104, 16.773) and AOR= 8.336, 95 % CI (1.259,55.177), respectively and TDS for slightly raised and high & very high score AOR= 3.465, 95% CI (0.979,12.263) and AOR= 4.965, 95% CI (1.0023,24.101) respectively are factors found to be significantly associated with ADHD in this study. The following table shows the result THE multivariable regression analyses.

Table 8 Bivariate and multivariate logistic regression analysis of factors associated with ADHD among children and adolescents (age 5-14 years) in public hospitals in Addis Ababa, 2023 (p-value <0.05)

Variables	ADHD		COR (95%CI)	AOR (95%CI)	P-value
	Yes= 30 N (%)	No = 297 N (%)			
Child age					
5 – 9 years	12 (9.7)	112 (90.3)	1	1	0.04*
10 – 14 years	18 (17.5)	85 (82.5)	1.976(0.903,4.324)	3.395(1.054, 10.93)	
Maternal substance use during pregnancy					
Yes	13 (23.6)	42 (76.4)	2.822 (1.270,6.272)	3.896 (1.201, 12.637)	0.024*
No	17 (9.9)	155 (90.1)	1	1	
Maternal medical illness during pregnancy					
Yes	8 (26.7)	24 (12.2)	2.621 (1.050,6.544)	4.704 (1.285,17.213)	0.019*
No	22 (73.3)	173 (87.8)	1	1	
Child sustained head injury					
Yes	6 (42.9)	8 (57.1)	5.906 (1.88,18.477)	2.992 (0.510, 17.567)	0.225
No	24(11.3)	189 (88.7)	1	1	
Baby cried immediately.					
No	10 (76.2)	32(23.8)	2.578 (1.104,6.021)	3.062 (0.924, 10.143)	0.067
Yes	20 (10.8)	165 (89.2)	1	1	

Externalizing score					0.029
Close to average (80% po)	12 (6.3)	178 (93.7)	1	1	
Slightly raised. (10% pop)	10 (41.7)	14 (58.3)	23.733(6.725,83.76)	2.612 (0.567, 12.032)	0.218*
High&VeryHigh (10%pop)	8 (61.5)	5 (38.5)	0.595(3.897,28.804)	20.768(2.227,193.64)	0.008*
Total Difficulty score					0.016
Close to average (80% pop)	7 (4.4)	151 (95.6)	1	1	
Slightly raised. (10% pop)	7 (18.9)	30 (81.1)	5.033 (1.645,15.40)	7.477 (1.705,32.78)	0.008*
High & VeryHigh (10% pop)	16 (50)	16 (52)	21.571(7.726,60.23)	8.107 (1.355, 48.49)	0.022*

*(P <0.05) variables which were independently associated with ADHD in multivariate analysis

6 Discussion

This study revealed that the overall prevalence of ADHD in the PROPDs and ophthalmology outpatient departments at the 3 public hospitals in Addis Ababa between the ages of 5 – 14 years was 13.21 %. The factors that were significantly associated with the occurrence of ADHD were: the presence of maternal medical complications during pregnancy, history of head injury to the child, maternal substance use during pregnancy, presence of externalizing signs, and having an increased TDS.

6.1 Prevalence of ADHD among children and adolescents (5-14 years)

The total prevalence of ADHD in this study (13.21%) is nearly similar to the findings done in North-eastern Ethiopia, in a community-based study which was 13 % (23), Jimma (13.7%) (23), Southwest Ethiopia (9.9%) (22) and in studies done in Menoufia Governorate- Egypt (9.3%) (6), in school setups in Uganda (11.7%) (47), Botswana (12.3%) (32), Nigeria (12.4%) (48), and India (11.8%) (49).

The prevalence of this study is slightly higher than that of the other hospital-based study which was done in the West Shewa zone which was 8.4 % (7). This discrepancy may be due to the difference in the sociodemographic. The current prevalence is also slightly raised from studies done at community setups like in Girja district (7.3%) (21) and also from studies conducted in other parts of the world like in the rural area of northern India (6.34%) and Shahrud- Iran (4.4%) (50, 51). This difference may be due to the difference in the study setting and also a difference in the study participants' age which included preschoolers and also age 6-12 years. Also, the prevalence of this study was higher than a systematic review and a meta-analysis of studies that investigated the prevalence of ADHD in Africa from three electronic databases which reported (7.47%) (20).

In contrast, this finding is lower than the study done in Amman- Jordan (27.7%), and Egypt (21.1%) (30, 52) where the difference may be due to the difference in the study setting and methodological differences.

Concerning the subtypes of ADHD, the result of this study shows that ADHD predominantly impulsive type had a higher occurrence of (5.3%) compared to the other subtypes, inattention and combined, which both had 4 % occurrence. This result is different from other studies which shows that the combined subtype is the most prevalent and at times the inattentive ones were shifting among the three subtypes is observed based on the reporting type (33).

Regarding the distribution of ADHD within genders, the occurrence of ADHD was seen higher in female participants (14.7%) than in males with all the 3 subtypes being higher than the males in our study. Some researches indicate that ADHD is overlooked and underdiagnosed or delayed diagnosed in girls because of their fewer behavioral problems, less noticeable symptoms of inattention, and gender bias (53). However, our result is different from studies done in West Shewa, Girja district, Southwest Ethiopia, and Northeastern Ethiopia (7, 21-23) and from abroad studies done in Egypt, Jordan, and India (50, 54, 55), which all showed higher occurrence in male gender.

6.2 Factors affecting ADHD among children and adolescents (5-14 years)

It was found in this study that in early adolescence age 10- 14 years, the occurrence of ADHD is increased by a factor of 3.4 (95% CI (1.054, 10.93)), as compared to children aged 5- 9 years. This result is consistent with the findings from the centers for disease control and prevention (CDC) where the prevalence of ADHD in the age group of 12-17 years was higher than those of age 6 – 11 years (56).

We found that maternal complications that happen during pregnancy are factors significantly associated with the occurrence of ADHD (p-value = 0.02, AOR= 0.241(0.072,0.802)). This result is similar to the studies done in West Shewa and Uganda where perinatal complications were significantly associated with ADHD (7, 47).

Moreover, the externalizing score from the SDQ rating scale is significantly associated with the occurrence of ADHD in this study especially when the score of the scale is in the slightly raised level (p-value= 0.218) and the high & very high level (0.008). The odds of having ADHD were increased by 2.612 (95% CI (0.567, 12.032)) when the score was in the slightly raised level and almost by 20.768 (95% CI (2.227,193.64)) when the score is in the high & very high level. This scale is a measure of the sum of conduct and hyperactivity score that a child or adolescent may have. A higher externalizing score indicates more externalizing problems, such as hyperactivity, conduct problems, social problems and oppositional defiance. This result is in line with studies that disclose that children with ADHD also have high rates of co-occurring externalizing and internalizing psychopathologies. A

study done in Europe implies that ADHD-related hyperactivity and impulsivity are more likely to have an impact on the externalization symptoms experienced by ADHD patients (57).

TDS, which is a measure of emotional and behavioral problems, has also been shown to be strongly associated with ADHD occurrence in this study. The odds of having a slightly raised score in those with ADHD increases by a factor of 7.477 (95% CI (1.705,32.78)) and by 8.107 (95% CI(1.355, 48.49)) for having a high and a very high score of TDS, which is also supported by other studies where TDS was significantly higher in children with ADHD than in children without ADHD in Britain (58, 59).

Maternal substance use during pregnancy is also found to have a strong association with the occurrence of ADHD in children and adolescents (p-value=0.035, AOR= 0.321 (0.112,0.925)). This is consistent with the results of earlier research conducted in southwest Ethiopia, Norway, and South Korea (22, 60, 61).

7. Strength and Limitations

Even though the study was institution-based, it was multicentered and included children and adolescents of various ages, increasing its representativeness. The most important variables, such as detailed maternal, neonatal, and childhood health conditions, were addressed. Standardized instruments were used to assess both the prevalence of ADHD and also factors that might be associated with it.

However, the use of only the parent rating scale of the standardized tool may not capture the full range of symptoms and impairments that children with disruptive behavior disorders may exhibit in different settings, such as school or peer groups. There may be recall bias when it comes to some variables like maternal and neonatal factors. Also, Because of the cross-sectional nature of our study, it is not possible to determine a causal association between ADHD and related variables. Moreover, the fact that SPHMMC has a separate child and adolescent psychiatry OPD (CAPOPD) may decrease the number of children with ADHD at PROPD as they will be triaged to CAPOPD directly which may give a false low prevalence.

8. Conclusion and recommendations

8.1 Conclusions

ADHD is prevalent among children attending OPDs at different Hospitals in Addis Ababa. It is also significantly associated with maternal complications during pregnancy, maternal substance use during pregnancy, child sustaining head injury, externalizing signs, and behavioral problems. This data demonstrates that ADHD is unquestionably a significant public health concern that needs to be given thorough consideration.

8.2 Recommendations

Our research explains several variables linked to ADHD in children and adolescents and advocates for comprehensive therapies to deal with the problem. Here are some recommendations for different stakeholders according to the findings of the current study.

Ministry of Health and Policymakers

- Develop national guidelines and policies: Considering the prevalence of the condition, hospitals, Addis Ababa Health Bureau, and MOH should create a structured system for the effective screening, diagnosis, and management of such a group of population.
- Support research and evaluation: Conduct further research on ADHD and evaluate the effectiveness of interventions.

Health care professionals

- Promoting awareness: Considering a slightly higher report of the hyperactive-impulsive subtype of ADHD, it might be warranted that it could be because parents and caregivers notice the inattentive and combined subtype less frequently. Thus, it might be important to increase the awareness of the different presentations of this disease in the community for a better understanding of the condition.
- Integrate screening and interventions: Findings of the current study suggest that the occurrence of ADHD in non-neurological or non-psychiatric clinics is significant. So other health professionals in their respective fields should know about the disease for them to fully assess their patient's condition and provide them with the necessary management or even referral to the respective bodies.
- The study showed that a great deal of the participants who fulfilled the criteria for ADHD also had a great association with increased externalizing signs and difficulty scores. This tells us that hyperactivity, conduct problems and social problems are parts and parcels of this condition and so mental health professionals should increase their awareness of the cooccurrence of these conditions for effective management of these patients also future researchers might investigate the extent of its burden.

For Researchers

- Because the use of only the parent rating scale of the standardized tool (in this study) may not capture the full range of symptoms and impairments that children with disruptive behavior disorders may exhibit in different settings, such as school or peer groups, future researchers are recommended to using both the parent and teacher-rated DBD scales which may provide a more comprehensive and accurate assessment of the child's functioning and needs.

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10. Annexes

Annex I- Information Sheet

Introduction:

Greetings, you are being asked to participate in a study which assesses the prevalence of ADHD and associated factors in children and adolescents at Saint Paul's hospital millennium medical college. You were selected because your child has visited the pediatrics regular OPD and child and adolescent psychiatric OPD on the selected time frame of the study.

Please listen carefully and feel free to ask any questions you may have to the investigator.

Purpose of the study: To assess the prevalence of ADHD and associated factors in children and adolescents at SPHMMC, Ras Desta Memorial hospital and Menillik Referral Hospital.

Procedure: Formal letter will be obtained from research and ethic committee of SPHMMC and Written informed consent will be obtained from each respondent just prior to the actual data collection. If you agree to this study, you will be asked questions including important things about your child.

Risks: there is no anticipated risk of participation and acceptance, or refusal will not affect any further care.

Benefits: It will help us to know the prevalence of ADHD and associated factors among children and adolescents attending outpatient services at SPHMMC, Ras Desta Memorial hospital and Menillik Referral Hospital. and will guide us to act accordingly.

Confidentiality: The study will be anonymous, findings will be strictly confidential, and your child's identification will not be mentioned. All information will be kept on a password protected computer.

Payment: You will not receive any payment for your participation except gratitude.

Right to refuse or withdraw: You may refuse any time to participate in the study and can withdraw your consent for the data gathered to be used.

Principal investigator: Etsub Amha – telephone number +251911726647

Annex II: Consent Form

Dear participant: I am I am collecting data and I am an investigator from SPHMMC, who is conducting a study on the prevalence of ADHD and associated factors among children and adolescents attending outpatient services at pediatrics units at SPHMMC, Ras Desta Memorial Hospital and Menilik Referral Hospital, Addis Ababa, Ethiopia, 2023 GC for partial fulfillment of specialty in psychiatry. You are selected randomly, and your child's participation is very important in investigating the prevalence of ADHD among children and adolescents at SPHMMC, Ras Desta Memorial Hospital and Menilik Referral Hospital. So here are some questions for you to answer which are important for the study. For your participation in this study, no payment will be granted, or no special privilege given to you. Besides, you're not obligated to answer any question which you do not wish to answer. If you feel discomfort responding to any of the questions about your child, please feel free to jump in any time you wish. Filling out the questionnaire will take about 20- 30 minutes. The information that you give will be kept confidential and won't be accessed by a third party; only be used for research purposes.

Therefore, would you agree to participate in this study? 1. Yes 2. No

Signature: _____

Phone number: _____ (Optional)

Thanks for your participation!

Annex- III- Questionnaire

English version

Part I: General and Socio-demographic characteristics

S.N	Questions	Response option	Remark
1	Age of child	_____year (s)	
2	Age of mother (during childbirth)	_____years	
3	Age of father (during childbirth)	_____years	
4	Birth order	1) First child 2) Second or above	
5	Sex of child	1) Male 2) Female	
6	Mother educational level	1) unable to read and write 2) Read and write only. 3) Primary education. 4) Secondary education. 5) Higher education and above	
7	Paternal educational level	1) unable to read and write 2) Read and write only. 3) Primary education. 4) Secondary education. 5) Higher education and above	
8	Mother Occupational status	1) Government employee 2) Private employee 3) Unemployed	

S.N	Questions	Response options	Remarks
9	Paternal occupational status	1) Government employee 2) Private employee 3) Unemployed	
10	Parents marital status	1) Married 2) Divorced 3) widowed 4) separated 5) single	
11	Living circumstances of parents	1) Together 2) separated	
12	Family size	1) 2 – 5 persons 2) Above 5 persons	
13	Residence	1) urban 2) rural	
14	Family income	_____ birr per month	
15	Child living with	1) Parents 2) Single parent 3) grandparents 4) relatives 5) foster child	

Part II: Maternal and infant factors

Child factors	YES	NO
1.child complication during/after delivery		
if yes please describe:		
2.child exposure to insecticide/herbicide during pregnancy		
3. did the child seem skinny right after delivery		
if yes please specify the birth weight : _____(Kg)		
4.was the child exclusively breast fed during the first 6 months of life		
if NO describe he's/her's feeding style _____		
5.has the child been exposed to significant head injury since birth		
6.current history of psychiatric or medical disorder in the child		
If YES please specify the disorder _____		
7. on average what amount of time does your child spend in a day seeing a television or phone screen? _____		
8. do you have any concern about your child's speech or communication?		

Maternal factors	Yes	No
1.is maternal neurological or psychological disorder present		
If yes please specify _____		
2. did the mother have any complications during pregnancy		
If yes please specify _____		
3. did the mother have any complications during delivery		
if yes please specify _____		
4. was the mode of delivery SVD		
6.maternal age at the time of pregnancy _____years		
7.history of taking drugs during pregnancy		
8. did the mother drink alcohol during pregnancy		
9. did the mother smoke cigarette during pregnancy		

Part III: Disruptive Behavior Disorder rating scale

Parent / Teacher DBD Rating Scale

Child's Name: _____ Form Completed by: _____

Grade: _____ Date of Birth: _____ Sex: _____ Date Completed: _____

Check the column that best describes your/this child. Please write DK next to any items for which you don't know the answer.

	Not at All	Just a Little	Pretty Much	Very Much
1. often interrupts or intrudes on others (e.g., butts into conversations or games)				
2. has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)				
3. often argues with adults				
4. often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others)				
5. often initiates physical fights with other members of his or her household				
6. has been physically cruel to people				
7. often talks excessively				
8. has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery)				
9. is often easily distracted by extraneous stimuli				
10. often engages in physically dangerous activities without considering possible consequences (not for the purpose of thrill-seeking), e.g., runs into street without looking				
11. often truant from school, beginning before age 13 years				
12. often fidgets with hands or feet or squirms in seat				
13. is often spiteful or vindictive				
14. often swears or uses obscene language				
15. often blames others for his or her mistakes or misbehavior				
16. has deliberately destroyed others' property (other than by fire setting)				
17. often actively defies or refuses to comply with adults' requests or rules				
18. often does not seem to listen when spoken to directly				
19. often blurts out answers before questions have been completed				
20. often initiates physical fights with others who do not live in his or her household (e.g., peers at school or in the neighborhood)				
21. often shifts from one uncompleted activity to another				
22. often has difficulty playing or engaging in leisure activities quietly				
23. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities				
24. is often angry and resentful				
25. often leaves seat in classroom or in other situations in which remaining seated is expected				
26. is often touchy or easily annoyed by others				
27. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)				
28. often loses temper				
29. often has difficulty sustaining attention in tasks or play activities				
30. often has difficulty awaiting turn				
31. has forced someone into sexual activity				
32. often bullies, threatens, or intimidates others				
33. is often "on the go" or often acts as if "driven by a motor"				
34. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)				
35. often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)				
36. has been physically cruel to animals				
37. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)				
38. often stays out at night despite parental prohibitions, beginning before age 13 years				
39. often deliberately annoys people				
40. has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery)				
41. has deliberately engaged in fire setting with the intention of causing serious damage				
42. often has difficulty organizing tasks and activities				
43. has broken into someone else's house, building, or car				
44. is often forgetful in daily activities				
45. has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun)				

parent teacher dbd v1

8/1/2005

የጠንካራና ደካማ ጎኖች መጠይቅ

ወ 4-17

አባዘምን ለእያንዳንዱ መዘርዘር ትይዩ 'አውነት አይደለም፤ 'በከፊል አውነት ነው' ወይም 'በአርግጥ አውነት ነው' የሚለው ስር ካሉት ሳጥኖች በአንዱ ምልክት ያድርጉ። ምንም እንኳን በፍጹም አርግጠኛ ባይሆኑ ወይም መዘርዘሩ ስሜት የማይሰጥ ቢመስልም፤ ለሁሉም መዘርዘሮች በሚችሉት አቅም መልስ ቢሰጡን ይረዳናል። አባዘምን የሚሰጡት መልስ ልጅዎ ባለፉት ስድስት ወራት ወይም በዘንድሮው የትምህርት ዘመን ያሳየውን/ያሳየችውን ባህሪ በተመለከተ ይሁን።

የልጁ ስም

ወንድ/ሴት

የትውልድ ዘመን

	አውነት አይደለም	በከፊል አውነት ነው	በአርግጥ አውነት ነው
ስለ ሌሎች ሰዎች ስሜት ይጠነቀቃል/ትጠነቀቃለች	☐	☐	☐
ይንቀጥቀጥል/ትንቀጥቀጥለች፤ አረፍት የለሽ ነው/ነች፤ አንድ ቦታ አርፎ መቆየት አይችልም/አትችልም	☐	☐	☐
ብዙ ጊዜ ራሴን፤ ሆኔን አመመኝ ወይም አቅለሽለሽኝ ይላል/ትላለች	☐	☐	☐
ለሌሎች ልጆች ያለውን/ያላትን ነገር በቀላሉ ያጋራል/ታጋራለች(የሚበላ፤ መመዛወቻ፤ እርሳስ፤ ወዘተ)	☐	☐	☐
ብዙ ጊዜ በጣም ተናዳጅና ግልፍተኛ ነው/ናት(ይገፈፈራል/ትገፈፈራለች፤ ይማታል/ትማታለች፤ይጮሃል/ትጮሃለች፤ ይወራወራል/ትወራወራለች)	☐	☐	☐
አይደባለችም/አትደባለችም፤ገሰል ይላል/ትላለች፤ ለብቻው/ጥ የመመዛወት አገጣጣሚያ አለው/አላት	☐	☐	☐
በጥቅሉ ታዛዥ ነው/ናት፤ ብዙ ጊዜ አዋቂዎች/የጠየቁትን/የጠየቁትን ያደርጋል/ታደርጋለች	☐	☐	☐
ስለ ብዙ ነገር ይሰጋል/ትሰጋለች፤ ብዙ ጊዜ ትንሽ ትልቁ ያሳስበዋል/ያሳስባታል	☐	☐	☐
ሰው ተጎድቶ፤ ከፍተኛ ወይም እጭት ካየ/ካየች ይረዳል/ትረዳለች	☐	☐	☐
ያለማቋረጥ በተቀመጠበት/በተቀመጠችበት ይቁነጠጣል/ትቁነጠጣለች፤ይንቆራጠጣል/ትንቆራጠጣለች፤ ይጠማዘዛል/ትጠማዘዛለች	☐	☐	☐
ቢያንስ አንድ ጥሩ ጓደኛ አለው/አላት	☐	☐	☐
ብዙ ጊዜ ከሌሎች ልጆች ጋር ይደባደባል/ትደባደባለች ወይምጉልበተኝነቱን/ጉልበተኝነቷን ያሳያል/ታሳያለች	☐	☐	☐
ብዙ ጊዜ ደስተኛ አይደለም/አይደለችም፤ ይከፋጥል/ይከፋታልወይም እንባው/እንባዋ ይመጣል	☐	☐	☐
በጥቅሉ በሌሎች ልጆች ተወዳጅነት አለው/አላት	☐	☐	☐
በቀላሉ ሀሳቡ/ሀሳቧ ይበታተናል፤ትኩረቱም/ትኩረቷም አንድ ቦታ ላይ አይቆይም	☐	☐	☐
አዲስ ሁኔታዎች ሲገጥሙት/ሟት ይረበጃል/ትረበጃለች፤ወላጆቿ/ቿ ላይ ጥበቅ ይላል/ትላለች፤ ወይም አልለቅም ይላል/ትላለች፤ በቀላሉ በራስ መተንሚሽ ያጣል/ታጣለች	☐	☐	☐
ከእርሱ/ከርሷ ለሚያንሱ ልጆች ደግ ነው/ናት	☐	☐	☐
ብዙ ጊዜ ይዋሻል/ትዋሻለች ወይም ያጭበረብራል/ታጭበረብራለች	☐	☐	☐
ሌሎች ልጆች ይተናኩሉታል/ይተናኩላታል፤ ያበሽቁታል/ያበሽቁታልወይም ጉልበተኝነታቸውን ያሳዩታል/ያሳዩዋታል	☐	☐	☐
ብዙ ጊዜ ሌሎችን ለመርዳት ፈቃደኛ ነው/ናት(ወላጆች፤መምህራን፤ሌሎች ልጆች)	☐	☐	☐
አንድ ነገር ከማድረጉ/ከማድረጓ በፊት ስለነገሩ በቅድሚያ ያስተውላል/ታስተውላለች	☐	☐	☐
ከቤት፤ ከትምህርት ቤት ወይም ከሌላ ቦታ ይሰርቃል/ትሰርቃለች	☐	☐	☐
ከሌሎች ልጆች ይልቅ ከአዋቂዎች ጋር በቀላሉ ይግባባል/ትግባባለች	☐	☐	☐
ብዙ ነገሮች ይፈራል/ትፈራለች፤ በቀላሉ ድንግጥ ይላል/ትላለች	☐	☐	☐
የጀመራቸውን/የጀመረቻቸውን ነገሮች አስከመጨረሻቸው ድረስየከናወናል/ታከናወናለች፤ጥሩ የትኩረትስፋት አለው/አላት	☐	☐	☐

ለላ ሀሳብ ወይም አስተያየት አለዎት

አባዘምን ይገልብጡት - ከጀርባው ጥቂት ተጨማሪ ጥያቄዎች አሉ

Amharic version

ስሜ ዶ/ር እፁብ አምታ ይባላል ። በቅዱስ ጳውሎስ ሆስፒታል ሜዲካል ኮሌጅ የመጨረሻ አመት የድህረ ምረቃ ተማሪ ሲሆን ለመመረቁያ የምርምር መረጃ ሰብሳቢ ነኝ። ይህ ደብዳቤ በዚህ ምርምር ላይ ተሳታፊ እንዲሆኑ ለመጋበዝ ሲሆን የምርምሩ ዓላማ በልጆች እና በታዳጊዎች ላይ ሊከሰት የሚችል የአእምሮ መታወክ ለማወቅና እንዲሁም ለችግሩ አጋላጭ የሆኑ ተዛማጅ ምክንያቶች ለማወቅ ነው። የተለያዩ ጥናቶች በአሁኑ ወቅት የአእምሮ መታወክ ከግዜ ወደ ግዜ እየጨመረ መምጣቱን ያሳያሉ። በዚህም ምክንያት ልጆች ለተለያዩ ማህበራዊ እና ስነልቦናዊ ችግሮች በከፍተኛ ሁኔታ እየተጋለጡ መጥተዋል። ይህ ጥናት ፖሊሲ ለሚያወጡ ተቋማት እና አእምሮ ጤና ላይ ለሚሰሩ አካላት ከፍተኛ ጠቀሜታ ይኖረዋል።

የልጅ በዚህ ጥናት ላይ የመሳተፍ ውሳኔው የእርስዎ ውሳኔ ነው። አለመሳተፍ ቢፈልጉ እርሶ ወይም ልጅ የሚመጣባችሁ ምንም አይነት ችግር አይኖርም። መሳተፍም ከወሰኑ ምንም አይነት ጥቅም አይኖሮዎትም ሆኖም ግን በአእምሮ ጤና መታወክ ምርመራ ላይ ልጅ ከፍተኛ ነጥብ ካመጣ በእርስዎ ፍቃድ ሆስፒታል ውስጥ ወዳለው ልዩ ክፍል በመሄድ ተጨማሪ የአእምሮ ምርመራ ይደረጋል። በጥናቱ ላይ በሚሳተፉበት ወቅት በእርስዎ ላይ ሚደርስ ምንም አይነት ጉዳት የለም። በዚህ ጥናት ላይ የሚሰጡት ማንኛውም አስተያየት እና መልስ በኮድ ስርዓት ሚስጢራዊነት የሚቀመጥ ሲሆን ለማንም ሰው አይሰጥም። ስምዎንም ሆነ ስልቁጥርዎን መስጠት አይተበቅብዎትም። ካለ እርስዎ ፍቃድ እና ህዝባዊ መብት ለሶስተኛ ወገን መረጃው አይተላለፍም።

ለእርስዎ ካልመሰለዎት ከዚህ ጥናት ተሳታፊነት ራስዎን የማግለል ሙሉ መብት አለዎት። ቃለ መጠይቁ 20-25 ደቂቃ የሚፈጅ ሲሆን በዚህ ጥናት ላይ ለመሳተፍ ከፈለጉ የስምዎን ፊርማዎን በቅጹ ላይ መፈረም ይኖርበታል። ከዚያም መረጃ ሰብሳቢዎች ምላሽዎን እንዲሰጡ ይጠይቃሉ።

የተማራማሪው ስም፡ እፁብ አምታ ኢሜል፡ etsubamha@gmail.com

በቃለ መጠይቁ ላይ ለመሳተፍ ፍቃደኛ ነዎት? አዎ----- አይደለም----- ቀን _____

9.2 የተሳትፎ ማረጋገጫ ፎርም

የሰነዱን ይዘት አንብቤ የተረዳሁ ሲሆን ምርምር ፕሮጀክት ላይም ለመሳተፍ ፍቃደኛ ሆኛለሁ፤ በማንኛውም ሰአት የማገኘውን የጤና አገልግሎት ሳላጣ ከጥናቱ ራሴን የማግለል መብት እንዳለኝ ተረድቻለሁ።

የተሳተፈው ፊርማ _____ ቀን _____

የተቆጣጣሪው ስም እና ፊርማ _____ ቀን _____

የመረጃ ሰብሳቢ ስም እና ፊርማ _____ ቀን _____

በቅዱስ ጳውሎስ ሆስፒታል ሜዲካል ኮሌጅ ከ 5 አመት እስከ 14 አመት ያሉ ልጆች ላይ የአእምሮ መታወክ እና ተዛማጅ ምክንያቶችን ለማጥናት የተዘጋጀ ፡፡

መግቢያ፡ በዚህ አጠር ያለ ቃለ መጠይቅ ለመሳተፍ በመወሰንዎ አመሰግናለሁ፡፡ ይህ ጥናት በአገራችን ያለውን የልጆችን የአእምሮ ጤና መታወክ ይዘት ለማጥናት እና በቀጣይነትም የሚሰጠውን ህክምናና የጤና አገልግሎት ጥራት ለማሳደግ ታቅዶ የተዘጋጀ ነው፡፡ በእርስዎ የሚሰጥ ማንኛውም መረጃ በሚስጥራዊነት የሚቀመጥ ይሆናል፡፡ ካለ እርስዎ ፍቃድ ወይም የህግ አካል በስተቀርይህ መረጃ ለሶስተኛ ወገን አይሰጥም፡፡ መመሪያ መጠየቁ ስድስት ክፍል አለው፡፡ ቃለመጠይቅ ለማጠናቀቅ 20-25 ደቂቃ የሚፈጅ ሲሆን ምንም እንኳን በፍጹም እርግጠኛ ባይሆኑ ወይም መዘርዘሩ ስሜት የማይሰጥ ቢመስልም፤ ለሁሉም መዘርዘሮች በሚችሉት አቅም መልስ ቢሰጡን ይረዳናል፡፡ እባክዎን የሚሰጡት መልስ ልጁ/ልጅቱ ባለፉት ስድስት ወራት ወይም በዘንድሮው የትምህርት ዘመን ያሳየውን/ያሳየችውን ባህሪ በተመለከተ ይሁን፡፡

ክፍል አንድ: የማህበራዊ አኗኗር መረጃዎች				
ጥያቄ ቁ	መጠየቅ	አማራጭ	እለፍ	ኮድ
1.1	የልጅዎ እድሜ ስንት ነው	ምላሾች በሚቀርብ ሙሉ አመት _____		
1.2	የልጅዎ ፆታ ምንድን ነው	ወንድ ሴት		
1.3	ልጅዎ በተረገዘ ጊዜ የእናት እድሜ ስንት ነበር	_____		
1.4	ልጅዎ በተረገዘ ጊዜ የአባት እድሜ ስንት ነበር	_____		
1.5	ልጅዎ ስንተኛ ልጅ ነው	1.አንደኛ ልጅ 2.ሁለተኛ እና ከዛ በላይ		
1.6	የልጁ እናት የትምህርት ደረጃ ምንድን ነው	1.ማንበብ መጻፍ እማትችል 2. ማንበብ እና መጻፍ ብቻ የምትችል 3.አንደኛ ደረጃ 4.ሁለተኛ ደረጃ 5.ዲፕሎማ 6.ዲግሪ/ከዛበለ		

1.7	የልጁ አባት የትምህርት ደረጃ ምንድን ነው	1. ማንበብ መጻፍ የሚችል 2. ምንበብ እና መጻፍ የሚችል 3. አንደኛ ደረጃ 4. ሁለተኛ ደረጃ 5. ዲፕሎማ 6. ዲግሪ/ከዘበላ		
1.8	የልጁ እናት የስራ ሁኔታ	1. ስራ የላትም 2. የመንግስት ስራ 3. የግል ስራ		
1.9	የልጁ አባት የስራ ሁኔታ	1. ስራ የለውም 2. የመንግስት ስራ 3. የግል ስራ		
1.10	የወላጆች የትዳር ሁኔታ	1. ተጋብተናል 2. ተፈተናል 3. በምት የተለየ 4. ብችኛ ወላጅ		
1.11	የወላጆች የአኗኗር ሁኔታ	1. አብረን ነው ምንኖረው 2. ተራርቀን ነው ምንኖረው		
1.12	የቤትዎ ወርሃዊ ገቢ በአማካኝ ስንት ነው	_____ ብር		
1.13	የመኖሪያ አካባቢ	1. ከተማ 2. ገጠር		
1.14	በ ቤትዎ ውስጥ ስንት ሰዎች አሉ	2 – 5 > 5		
1.15	ልጁ ሚኖረዉ ከማንጋር ነዉ	1. ከወላጆች ጋር 2. ከአንድ ወላጅ ጋር 3. ከዘመድ ጋር 4. በማደጎ		

ክፍል ሁለት፡- የጤና ሁኔታን የተመለከተ				
2.1	ልጅዎ በአሁን ወቅት የአይምሮ ችግር አለበት	1.አዎ 2.አይ 3.ካለ ይግለፁ_____		
2.2	ልጅዎ ከዚህ በፊት የአይምሮ ችግር ነበረበት	1. አዎ 2. አይ 3. ከነበረበት ይግለፁ__		
2.3	ከቤቴሰብ ውስጥ የአይምሮ ወይም ስነ-ልቦናዊ ችግር የነበረበት / ያለበት አለ	1. አዎ 2. አይ 3. ካለይግለፁ__		
2.4	በቤቴሰብ ውስጥ በህክምና የተረጋገጠ የቆየ የጤና/ አካላዊ ችግሮች አለ?	አዎ አይ ካለ ይግለፁ ____		
2.5	ከእርግዝናዎ ወቅት በፊት ያጋጠሞት በህክምና የተረጋገጠ የቆየ የጤና / አካላዊ ችግር አለ?	አዎ አይ ካለ ይግለፁ ____		
2.6	ከእርግዝናዎ ወቅት በፊት ያጋጠሞት የአይምሮ ወይም ስነ-ልቦናዊ ችግር አለ?	አዎ አይ ካለ ይግለፁ ____		
2.7	የልጃችሁ ንግግርና የሐሳብ ልውውጥ ያሳስባችሁ ይሆን?	አዎ አይ		
2.8	ልጃችሁ ቴሌቪዥን ወይም ስልክ በማየት በቀን ውስጥ በአማካይ ምን ያህል ጊዜ ያሳልፋል?			

ክፍል ሦሥት፡- የእርግዝና፣ወሊድ እና የጨቅላ ህጻናት ጉዳዮች መረጃ				
3.1	በእርግዝናዎ ወቅት ያጋጠሞት በህክምና የተረጋገጠ የቆየ የጤና/አካላዊ ችግር አለ?	አዎ አይ		
3.2	ከሚከተሉት የቱ ነው	የደም መፍሰስ የደም ግፊት የስኳር ህመም		

		ያባላዘር በሽታ ሌላ		
3.3	የወሊድ ሁኔታዎች እንዴት ነበር	በማህጸን ያለ መዳኒት በማህጸን በ መዳኒት በመሳሪያ በሆድ ኦፕሬሲን ሌላ		
3.4	ልጅዎ 8 ወር ከሞላው በኋላ ነው የተወለደው	አዎ አይ ካልሆነ ይግለጹ _____		
3.5	ልጅዎ ሲወለድ በጣም ቀጫጫ ነበር	አይ አዎ		
3.6	ልጅዎ እንደተወለደ አልቅሷል	አይ አዎ		
3.7	ልጅዎ እንደተወለደ ወዲያው ጡት መጥባት ጀምሯል	አይ አዎ		
3.8	ልጅዎ እስከ 6 ወር ጡት ጠብቷል	አይ አዎ		
3.9	ልጅዎ ከተወለደ በኋላ ችግር አጋጥሞታል	አይ አዎ ካለይግለጹ _____		
3.10	በእርግዝና ወቅት ለጸረ አረም/ወባ ተጋልጠው ያውቃሉ	አይ አዎ		
3.11	ልጅዎ ከባድ የጭንቅላ ትጉዳት ደርሶበት ያውቃሉ	አይ አዎ		

ክፍል ዐራት፡- የዕፅ ተጠቃሚነት ዳሰሳ		
4.1	በሒወትዎ ከሚከተሉት የትኛውን ተጠቅመዋል	
4.1.1	ትንባሆ/ሲጋራ	አዎ አይ
4.1.2	መጠጥ(ጠላ፣አረቄ፣ጠጅ፣ቢራ፣ወይን ወዘተ)	አዎ አይ

4.1.3	ጫት ቅመው ያውቃሉ	አዎ አይ
4.2	ልጅዎን ባረገዙበት ወቅት ከሚከተሉት የትኛውን ተጠቅመዋል	
4.2.1	ትንባሆ/ሲጋራ	አዎ አይ
4.2.2	መጠጥ(ጠላ፣አረቄ፣ጠጅ፣ቢራ፣ወይን ወዘተ)	አዎ አይ
4.3.3	ጫት ቅመው ያውቃሉ	አዎ አይ

ክፍል አምስት፡- የሕመሙ ምልክት መዳሰሻ ጥያቄዎች

0= የለም 1 = በጣም አልፎ 3 = አንዳንድ ጊዜ ወይም በመጠኑ 4= ሁልጊዜ

ለእያንዳንዱ ጥያቄ ከአንድ በላይ መልስ መስጠት አይቻልም፡፡ ለአንድ ጥያቄ ከአንድ በታላይ ምልክት ማድረግ ያስፈልጋል		0	1	2	3
5.1	በትምህርት ቤት ውስጥ ትምህርት እየተማረ ወይም የቤት ስራውን እየሰራ ባለበት ውስጥ ብዙ ጊዜውን ሌላ ነገር በመስራት ያሳልፋል?				
5.2	ልጅዎ በአንድ ስራ ወይም ጫወታ ላይ ሃሳቡን ሰብስቦ መቆየት ይቸግረዋል?				
5.3	ልጅዎን ሲያናግሩት እርስዎን ከልቡ የማያዳምጥ መስሎ ተሰምቶዎት ያውቃል?				
5.4	ልጅዎ ዘወትር ትዛዞችን ያለመከተልና ስራዎችን ያለመጨረስ ቸግሮ ታይቶበት ያውቃል?				
5.5	መምህሩ ካስረዱት በኋላና እርስዎ ምን መስራት እንዳለበት ካስረዱት በኋላ የተባለውን ነገር መተግበር አቅቶት ያውቃል?				
5.6	ልጅዎ ረጅም ጊዜ ወይም ትኩረት የሚፈልጉ ተግባሮችን ይጠላል?				
5.7	ልጅዎ በተደጋገሚ የቤት ስራ ወይም የክፍል ስራ ለመስራት ሲዘጋጅ የተሰጡት መሳሪያዎች ሁሉ ፍፁም ተሟልተው አይገኙም ነበር?				
5.8	አንድ ነገር እየሰራ በአጠገቡ ሌላ ነገር ቢካሄድ የያዘውን ስራ ማከናወን ይቸግረዋል?				
5.9	ልጅዎ እለት ከእለት የሚያከናውናቸውን ተግባራት ረስቶ ያውቃል?				
5.10	ልጅዎ መቁነጥነጥን በማብዛቱ የተነሳ አርፎ እንዲቀመጥ ሰዎች ነግረውት ያውቃሉ(ለምሳሌ፡- መቀመጫ ላይ ሆኖ መቁነጥነጥ፣እጅና ጣቶችን መፍተል፣ መቅጠጥ፣እንዲያው ተረጋግቶ መቀመጥ አለመቻል)				
5.11	ልጅዎ ት/ቤት በነበረበት ጊዜ ለረጅም ጊዜ ተረጋግጦ መቀመጫው ላይ መቆየት አስቸግሮት ያውቅ ነበር?				

5.12	ልጅዎ አስፈላጊ ባልሆነ ሁኔታ መርጥ ወይም በነገሮች ላይ መንጠልጠል፣መውጣት መውረድ ወይም እቃዎችን በማንሳት አስቸግሮት ያውቃል?				
5.13	ልጅዎ ብቻውንም ሆኖ ከጓደኞቹ ጋር ረጋ ብሎ መጫወት ይችላል?				
5.14	ዘወትር ልጅዎ እንቅስቃሴ የበዛበት ተግባር ይታይበታል?				
5.15	ልጅዎ ሁልጊዜ ለፍላፊና መናር ከጀመረ ንግግሩን ማቆም እንደማይችል ሰዎች ለእርስዎ ነግረዎት ያውቃሉ				
5.16	ልጅዎን አንድ ነገር መጠየቅ ፈልገው ገና ጥያቄውን ሳይችሉ ፈጥኖ መልስ ሰጥቶ ያውቃል				
5.17	ልጅዎ ከሌሎች ጋር በሚጫወቱበት ጊዜ ወይም ሰልፍ መጠበቅ በሚያስፈልግበት ጊዜ ተራውን ወይም ቅድመ ተከተሉን ጠብቆ ለማቆየት ይችላል?				
5.18	የልጁ መምህር ወይም ሌሎች ንግግር ወይም ጨዋታ በሚያደርጉበት ጊዜ ልጁ ጣልቃ እየገባ እንዲሟደብኝ ያቀረቡበት ስሞታ አለ?				
5.19	ልጅዎ ብዙውን ጊዜ ከትላልቅ ሰዎች ጋር ይከራከራል/ ትከራከራለች				
5.20	ልጅዎ ብዙውን ጊዜ የጥላቻ ወይም የበቀል ስሜት አለው/ አላት				

5.21	ልጅዎ ብዙውን ጊዜ ለሠራው ስህተት ወይም ለፈጸመው መጥፎ ድርጊት ሌሎችን ይወቅሳል				
5.22	አብዛኛውን ጊዜ የአዋቂዎችን ጥያቄ ወይም ደንብ አለማክበርን በንቃት ይቃወማል ወይም አይቀበልም				
5.23	ብዙውን ጊዜ የሚናደድና ቅር የሚሰኝ ነው/ናት				
5.24	ብዙውን ጊዜ ሌሎችን ልብ የሚነካ ወይም በቀላሉ የሚያበሳጭ ነው/ ናት				
5.25	ልጃችሁ ብዙውን ጊዜ በቁጣ ይገነፍል / ትገነፍላለች				
5.26	ብዙውን ጊዜ ሰዎችን ሆን ብሎ/ ብላ ያበሳጫል/ ታበሳጫለች				

ክፍል ስድስት : የጠንካራና ደካማ ነጥቦች መጠይቅ				
ለእያንዳንዱ ጥያቄ ከአንድ በላይ መልስ መስጠት አይቻልም። ካሉት ሳጥኖች በአንዱ ምልክት ያድርጉ		እውነት አይደለም	በከፊል እውነት ነው	በእርግጥ እውነት ነው
6.1	ስለ ሌሎች ሰዎች ስሜት ይጠነቀቃል/ትጠነቀቃለች			
6.2	ብዙ ጊዜ ራሴን፤ ሆዴን አመመኝ ወይም አቅለሽለሽኝ ይላል/ትላለች			
6.3	ለሌሎች ልጆች ነገር በቀላሉ ያጋራል/ታጋራለች(የሚበላ፤			
6.4	ብዙ ጊዜ በጣም ተናዳጅና ግልፍተኛ ነው/ናት (ይንፈራፈራል/ትንፈራፈራለች፤ይማታል/ትማታለች ፤ይጮሃል/ ትጮሃለች፤ ይወራወራል/ትወራወራለች)			
6.5	አይደባለቅም/አትደባለቅም፤ገለል ይላል/ትላለች፤ ለብቻው/ዋ የመጫወትአዝማሚያ አለው/አላት			

6.6	በጥቅሉ ታዛዥነው ብዙ ጊዜ አዋቂዎች/ጠየቁትን/የጠየቁትን ያደርጋል/ታደርጋለች			
6.7	ስለ ብዙ ነገር ይሰጋል/ትሰጋለች፤ ብዙ ጊዜ ትንሽ ትልቁ ያሳስበዋል/ያሳስባታል			
6.8	ሰው ተጎድቶ፤ ከፍቶት ወይም አሞት ካየ/ካየች ይረዳል/ትረዳለች			
6.9	ቢያንስ አንድ ጥሩ ዓደኛ አለው/አላት			
6.10	ብዙ ጊዜ ከሌሎች ልጆች ጋር ይደባደባል/ትደባደባለች ወይም ጉልበት ጥንቅቅን/ጉልበት ጥንቅቅን ያሳያል/ታሳያለች			
6.11	ብዙ ጊዜ ደስተኛ አይደለም/አይደለችም፤ ይከፋዋል/ይከፋታል ወይም እንባው/እንባዋ ይመጣል			
6.12	በጥቅሉ በሌሎች ልጆች ተወዳጅነት አለው/አላት			
6.13	አዲስ ሁኔታዎች ሲገጥሙት/ሚገኙ ይረበጥ/ትረበጥላችሁ፤ ወላጆች/ቺ ላይ ጥብቅ ይላል/ትላላችሁ፤ ወይም አልለቅም ይላል/ትላላችሁ፤ በቀላሉ በራስ መተማመን ይቻላል/ታቻላል			
6.14	ከእርሱ/ከርሷ ለሚያንሱ ልጆች ደግ ነው/ናት			
6.15	ብዙ ጊዜ ይወሻል/ትወሻለች ወይም ያጭበረብራል/ታጭበረብራለች			
6.16	ሌሎች ልጆች ይተናኮሉታል/ይተናኮሏታል፤ ያበሽቁታል/ያበሽቋታል ወይም ጉልበት ጥንቅቅን ያሳይታል/ያሳይዋታል			
6.17	ብዙ ጊዜ ሌሎችን ለመርዳት ፈቃደኛ ነው/ናት (ወላጆች፤ መምህራን፤ ሌሎች ልጆች)			
6.18	ከቤት፤ ከትምህርት ቤት ወይም ከሌላ ቦታ ይሰርቃል/ትሰርቃለች			
6.19	ከሌሎች ልጆች ይልቅ ከአዋቂዎች ጋር በቀላሉ ይግባባል/ትግባባለች			
6.20	ብዙ ነገሮች ይፈራል/ትፈራለች፤ በቀላሉ ድንግጥ ይላል/ትላላች			

