MAGNITUDE OF COMMON MENTAL DISORDERS AND ITS ASSOCIATION WITH SCHOOL PERFORMANCE IN ADOLESCENTS AMONG SELECTED HIGH SCHOOLS IN ADDIS ABABA, ETHIOPIA

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Magnitude of Common Mental disorders and its Association with school Performance in Adolescents among selected high schools in Addis Ababa, Ethiopia

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Contents

List of acronyms

ADHD	Attention deficient hyperactivity disorder
AOR	Adjusted odds ratio
CMD	Common mental disorder
DSM	Diagnostic and statistical manual of mental disorder
EDHS	Ethiopian demographic health survey
ODK	Open data kit
GAD	Generalized anxiety disorder.
K10	Kessler Psychological distress scale
LSES	Low Socioeconomic Status
MDD	Major Depression disorder
PI	Principal Investigator
WASH	Water Sanitation and Hygiene
WHO	World health organization
UNICEF	United nation international children's emergency fund
SPSS-	Statistical Package for Social Sciences version 25

List of figures

List of tables

Abstract

Background: A wide range of physical, mental, and social abnormalities are referred to as common mental disorders(CMDs), which include somatic manifestations of illnesses including depression and anxiety. Compared to adults, young people have the highest frequency of mental health issues. Up to 20% of adolescents are likely to suffer from mental health disorders. The intense pressure to perform well academically has produced a highly stressful atmosphere that, if ignored, may be harmful to students' physical and emotional well-being.**Objective:** To assess the Magnitude of common mental disorder and its association with academic performance in Adolescents among selected high schools Addis Ababa, Ethiopia **Methods:** From June 2023 to February 2024, a cross-sectional study was undertaken. Multistage sampling was used to select 828 students. A self-administered survey was used that included Self-Reporting Questionnaire 24, K10 psychological distress scale and other semi structured instruments for the screening of substance use. The data was gathered using ODK version 1.25.2 software and exported to SPSS version 25 for analysis.Bivariable and multivariable logistic regression analyses were done to identify factors associated with common mental disorders.AORswith 95% CIs were calculated and variables with a p value of 0.05 were considered as significantly associated with common mental disorders.**Results:** A total of 828 high school students were recruited with a response rate of 98.2%. The prevalence of CMD among the participants was 266 (32.1%).Being female[AOR=0.69; 95% CI:0.49-0.96].Being grade 11[AOR=1.91; 95% CI:1.23-2.96], grade 12[AOR=1.78; 95% CI: 1.16 - 2.73],care giver father only[AOR=2.11; 95% CI: 1.15 -3.86] &Students from low income family[AOR=2.97; 95% CI: 1.39–6.34] were statistically associated with CMD. CMD were 3 times higher in those who were in academic difficulties[AOR= 2.63; 95% CI:1.92–3.61].About 17.1% (142/828) of students use addictive substances.CMD were 2x higher in substance user as compared to the counter group [AOR=1.79; 95% CI: 1.19–2.70].**Conclusion and recommendation:** The prevalence of common mental disorders & substance use was 32.1% &17.1% respectively among students. There was a strong correlation found between having a CMD and being female, having LSES, being a parent alone providing care, higher grade levels (grades 11 and 12), and substance usage. Considering these determinants, screening, early identification, and providing appropriate intervention for common mental disorders in the schools should be of great concern.key words**:**Prevalence,CMD, adolescent

1. Introduction

1.1. Background

Adolescents make up one in six persons on the planet in 2022, with 1.3 billion of them being teenagers. This represents a 16 percent share of the global population. (1)
The term "adolescent" refers to those who fall between the ages of 10 and 19, marking a critical phase of growth and development as they go from childhood to maturity.(2)

The state of mental health is characterized by an individual's ability to reach their full potential, manage everyday stressors, work efficiently, and make a positive contribution to their community. A mental disorder is a syndrome marked by cognitive, emotional regulation, or behavioural abnormalities that are clinically substantial, together with dysfunctional biological, psychological, or developmental processes. Individuals at any other point of the lifecycle do not exhibit the highest frequency of mental health disorders than young people, with up to 20% of teenagers likely to suffer from mental health disorders (3).

Mental illness accounted for 11% of the overall disease burden in Ethiopia, making it the most common non-communicable ailment (4).
Every stage of life, from infancy and adolescence to maturity, is critical for mental health. (5). In order to foster total well-being, schools place a high priority on three crucial and interconnected aspects of mental health: social (how we relate to others), emotional (how we feel), and behavioural (how we act) (6).

Adolescents are suffering from mental health disorders are more susceptible to social distancing, prejudice, stigma (which might influence their willingness to ask for assistance), challenges in the classroom, risk-taking, physical illness, and abuses of human rights. Compared to adults at any other period of their lives, young people have the highest frequency of mental health issues Up to 20% of teenagers are likely to suffer from mental health disorders (7).

In addition to managing the social and academic rigors of their future professional lives, students often adjust to a variety of psychosocial adjustments. The intense pressure to perform well academically has produced a highly stressful atmosphere that, if ignored, may be harmful to students' physical and emotional well-being. (8)

A wide range of physical, mental, and social abnormalities are referred to as common mental disorders (CMDs), which include somatic manifestations of illnesses including depression and anxiety. It is characterized by symptoms that can have long-term repercussions on a person's life, including physical discomfort, weariness, irritability, forgetfulness, sleeplessness, and difficulties concentrating (9).

There were 22.2% of disorders overall that caused severe disability and/or distress (11.2% of mood disorders, 8.3% of anxiety disorders, and 9.6% of behavioural disorders). The disorder classes with the earliest median age of beginning were anxiety (6 years), behaviour (11 years), mood (13 years), and drug use (15 years). As a result, most mental disorders begin in childhood (10).

1.2Statement of Problem

The years from 10 and 19 are known as adolescence, which is the transitional period between childhood and adulthood. It is a special period in human growth and a crucial time to establish the groundwork for long-term health. Teens grow quickly in terms of their physical, cognitive, and emotional development. This influences their emotions, thoughts, decision-making, and interactions with others and their environment (WHO).

The burden on young people in Africa, who already face challenges in making ends meet in fiercely competitive job markets, is set to increase as the continent's population is predicted to double over the next thirty years. When their goals are not fulfilled, many may suffer from psychological issues, and some will abuse drugs to get over their disappointment. Notwithstanding this, there is a dearth of empirical data on the frequency, distribution, and pattern of mental disorders, including substance use disorders, from a nationally representative sample of adolescents. This kind of data is crucial for determining the

priorities for allocating resources for the implementation of preventive measures as well as for management.

1.3 Significance of the study

There hasn't been enough institutionally published data in the past few decades on the incidence of common mental illnesses and the risk factors for them among Ethiopia's teenage high school pupils. The relationship between substance abuse and mental illness, as well as how it affects students' academic achievement, are not well enough studied. Although a few research on common mental disorders have been conducted in the past, the majority of them are out of date and do not accurately depict the state of affairs now. Ethiopia's national mental health program statute and national mental health policy are severely lacking in resources. Thus, this research will aid in the implementation of policies that will improve the distribution of mental health services for children who are impacted by mental health issues, raise public awareness of these issues, and offer education and training to the community and society about mental health issues and strategies for resolving them. Since most kids and teenagers with mental illnesses have trouble getting along with their classmates in school, this research will be helpful in delivering services there. Lastly, the study will illustrate the present impact of common mental illnesses and substance abuse on adolescents' academic performance.

2. Literature Review

2.1. Magnitude of Mental disorder

2.1.1 Globally

Around 75% of those suffering by mental disorders reside in low-income countries, making up 14% of the worldwide disease burden(11).The primary source of the burden of disease is becoming more widely acknowledged. Mental disorders account for 970.1 million cases in 2019 compared to 654.8 million instances in the 1990s, according to a comprehensive examination of the global burden of disease in 2018 (12). The primary cause of the rise in the estimation of mental health disorders after 1970 can be traced to the development of diagnostic operational criteria for mental disorders and their subsequent inclusion in the DSM nomenclature (13).Numerous studies in the field of mental health present differing conclusions about distinct mental health conditions generally and CMDs specifically. In the US and Australia, surveys, for instance, have revealed that the prevalence of mood and anxiety disorders over a 12-month period ranges from 6.6% to 18.1% [12]. The prevalence of CMDs was reported to be 25% in Chile, 29.9% in Brazil, and 29.9% in Santiago in South America(14).It is estimated that 24.6% of people in Britain have CMDs.(15). Moreover, a prevalence estimate of 24.2% was reported in a different study setting conducted in Britain (16). It was observed that the incidence in eastern Asia was approximately 8.8% (17).

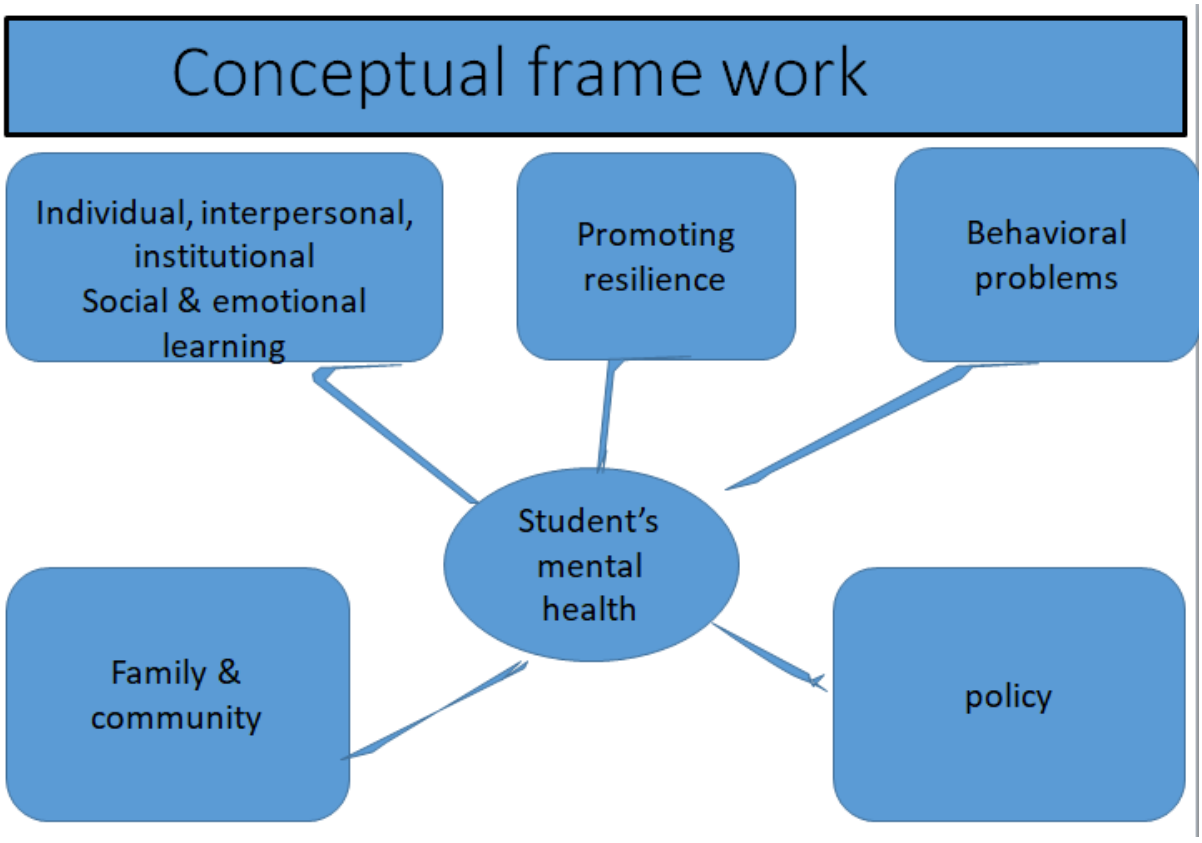
2.1.2 Africa

Different studies in Africa found varying results for CMD prevalence in population-based surveys. For instance, it was said that the prevalence of CMDs was 10.8% in Kenya and 34.9% in South Africa. A different study carried out in Nigeria revealed that the 12-month prevalence of CMDs was 5.8%, and the life-time prevalence was 12.1% (18). According to several community-based research carried out in Ethiopia, the prevalence of CMDs ranges from 11.2% to 33.4%(19). The literature has revealed that some characteristics are strongly connected with the development of common mental disorders (CMDs). These risks include female sex, low educational status, older age, unemployment, family history of mental illness, chronic physical health problems, and substance use (20).

The World Health Organization defines substance use as the use of any combination of drugs, including alcohol, cigarettes, prescription medications, illicit narcotics, inhalants, and

solvents. Among the substances that teenagers use frequently include marijuana, inhalants,cannabis, heroin,khat,tobacco, alcohol, and cocaine (3).

According to the results of a survey conducted on preparatory students in a governmental school in Addis Ababa in 2021, 25% of the participants used drugs. Cigarettes, khat, and alcohol were commonly used drugs. Strong correlations were found between substance usage and the following factors: family history of substance use, gender,school policies controlling substance use, parent-child relationships school mini-media and pro-social activity, and the availability of substance retail stores.(21)



The relationship between the explanatory variables and the result variable is shown by the solid line.

3. Objective

3.1. General objective

- To assess the Magnitude of common mental disorder and its association with academic performance in Adolescents among selected high schools Addis Ababa, Ethiopia from June 2023 to February 2024

3.2. Specific objectives

- To describe the Magnitude of common mental disorder
- To describe the Magnitude of substance use
- To determine associated factors with commonmental disorders
- To determine association between mental disorder and academic performance

4. Method and Materials

4.1. Study area and period

Ethiopia's Addis Ababa is where the study was carried out. Ethiopia's capital, Addis Ababa, is home to an estimated 3,602,000 people as per the 2007 census. Take 18% of this adolescent group. The city is divided administratively into 99 woredas and 11 subcities. (22).There are 444 government schools in Addis Abeba, with 36% of them being preschools, 48% being primary schools, 13% being secondary schools, and 3% being preparatory schools, according to a 2018 survey conducted by the Addis Ababa Education Bureau (23).Addis Abeba was chosen as the study area because it is home to a diverse population that includes members of many ethnic groups, which would ensure the validity of the findings.

4.2. Study design.

- Across-sectional study was carried out.

4.3 Study Period

- The study was conducted with in a period of June 2023 to February 2024

4.3. Population

4.3.1. Source population

- All Adolescent students attending in Addis Ababa High School

4.3.2. Study population

- Adolescent students attending in selected AA high schools during June 2023 to February 2024

4.4. Eligibility

4.4.1 Inclusion

- Included in the data collection were high school students in grades 9 to12 who attended class and gave their informed consent.

4.4.2 Exclusion criteria

- Excluded from the study were students who were gravely unwell during the time of data collection and those who declined to take part.

4.5. Sample size determination and sampling technique.

4.5.1. Sample size determination

The sample size was calculated using the single population formula assumption. The percentages of, anxiety, depression and stress in students at Arsi University in Ethiopia were derived from a previously published study and were40.4%, 60.8%, and 52.3%respectively. based on the assumptions of 95%, 5% margin error, and confidence interval (CI).As a result, the following calculation will be used for the first objective is, which is the prevalence of depression.

$$n=\frac{(Z\alpha/2)\ 2\times p(1-p)}{d^2} \qquad n=\frac{(1.96)\ 2\times 0.523\times .477}{(0.05)^2} \quad =383$$

Where n is the smallest sample size,

P is the anticipated frequency of mental illnesses

d is the precision level (error margin).

Z is the result with 95% confidence.

Two phases of multi-stage sampling were employed, and the sample size was multiplied by the number of stages. Consequently, 383×2 = 766.
The ultimate sample size was 766 + 77 = 843, taking into account 10% of the non-response rate. The prevalence of stress and anxiety, measured by p, was 40.4% and 60.8 percent, respectively, for the second and third objectives. However, the 805 and 814 sample sizes that are determined are fewer than 843. That's why 843 was the minimal sample size needed for this research.

4.5.2. Sampling technique and procedure

Three stages were involved in the multi-stage sampling that was used. Four high schools were picked at random using the lottery technique in the first stage, out of a total of 71 high schools. Based on the total number of students enrolled in each institution, the study's sample size was allocated proportionately among them all. In the second phase, grades in all of the chosen schools were arranged according to their levels: 9, 10, 11, and 12. Ultimately, a basic random selection method was used to select students from each grade.
using simple random sampling.

(Figure 2)

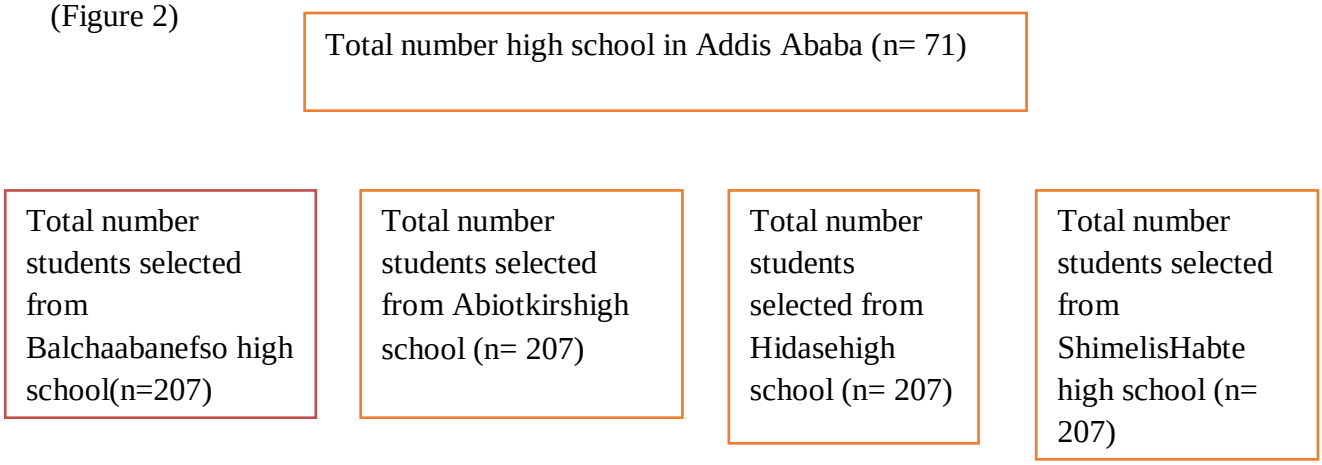


Figure 2Schematic illustration of the students' sampling process from June 2023 to February 2024 in specific high schools in Addis Ababa, Ethiopia

4.6 Data Collection Tool and Procedures

Following the students' selection, self-administered questionnaires were used to gather data. The questionnaire includes questions about school performance, drug and substance use status, and sociodemographic data as well as the Kessler Psychological Distress Scale. The data was gathered using ODK version 1.25.2 software, and it was stored on the Kobo Toolbox server.

4.7 Data Quality control and management

To guarantee the data's quality, the self-administered questionnaire was assessed on 165 students, or 5% of the sample size, at Keftegna 23 High School. Prior to beginning data collecting, issues found during the pre-test were fixed. The first draft of the questionnaire was written in English. To maintain internal consistency, the English version was translated into Amharic and then back into English. Every question was correctly coded, and the primary investigator provided on going oversight throughout the pre-test and data collecting periods.Every day that data was being collected, the collected data was examined for consistency and completeness.

4.8. Variables

4.8.1 Outcome variable

Main outcome variable: common mental illness (CMD). If the Kessler psychological distress (K10) scale score was ≥7, CMD was diagnosed. A person can rate their 30-day experience with anxiety and depression symptoms on a five-level Likert scale by answering the 10-item K10 scale. In Ethiopia, Tesfaye et al. have already validated the K10 scale (24).

4.8.2 Explanatory variables

- Socio demography
    - SexAge, Economic status of parents, educational status Caregiver
- Type of mental disorder
- School performance.
- Substance abuse status

4.9. Operational Definition and Definition of Terms

Adolescenceis the age range of 10 to 19 years old, marking the transition from childhood to adulthood. It is a special time in human development and a crucial moment to establish the groundwork for long-term health. Teenagers grow quickly in all areas—physical, cognitive, and psychological. This has an impact on their emotions, thoughts, decision-making, and interactions with the outside environment.

Insomnia:- the inability to stay asleep for more than 20 to 30 minutes, the inability to sustain sleep, or early waking 30 minutes before the intended time.

Substance use:-The term "substance use" describes the use of a variety of substances, including alcohol, cigarettes, prescription and illicit drugs, inhalants, and solvents. Among the substances that teenagers use frequently include hookah, khat, marijuana, cocaine, tobacco, cannabis, heroin, liquors like alcohol, and inhalants.

Substance-induced sleep disorders: This category includes sleep disorders such as insomnia that are brought on by drug, alcohol, or drug usage.

Substance-induced neurocognitive disorders: These conditions are characterized by modest to substantial deficits in neurocognition brought on by substance use that continue after the initial phase of intoxication and acute withdrawal.

Generalized anxiety disorder (GAD): Adolescents with this condition experience distress in day-to-day activities, frequently stemming from thoughts of their own inadequacy in a variety of domains, such as social and academic performance.
Major depressive disorder-A person diagnosed with major depressive disorder is defined as having five or more symptoms in a two-week period, with at least one of the symptoms being a low mood or lack of interest or enjoyment.

ADHD- a neuropsychiatric disorder affects pre-schoolers, kids, teens, and adults. A pattern of reduced sustained attention and increased impulsivity or hyperactivity is what defines it.

4.10. Data processing and Analysis

Following the data collecting process using ODK version 1.25.2, all filled-out forms were verified as complete before being exported to SPSS version 25 for analysis. For continuous data, the terms mean and standard deviation were utilized, whereas frequency and percentage were employed to describe categorical data. The size of common mental diseases and potential contributing factors were analysed using binary logistic regression. A 5% level of significance was employed for statistical analysis, and the association was presented using the crude odds ratio (COR) with a 95% confidence interval (CI). At last, text, tables, and charts were used to present the findings.

4.11. Ethical consideration

The department of pediatrics and child health's Research and Publications committee granted ethical clearance. The administration of Balcha Abanefso, Abiot Kirs, Hidase, and Shimelis Habte secondary schools was then given a formal letter of support and a copy of the ethical clearance. Each student gave written consent after the study's administration at their local school gave authorization. All participant names and other personal identifiers were removed from the anonymous data collection, confidentiality was upheld during the whole study, and the material was stored in a secure location.

4.12. Dissemination and utilization of results

The study's findings will be presented to the department of pediatrics and child health at Addis Abeba University's College of Health Sciences, School of Medicine, in order to partially meet the requirements for a specialized certificate in pediatric and child health. The study's results will also be distributed to other relevant organizations. The manuscript will also be published in peer-reviewed journals.

5.Results

5.1 Socio-demographic Characteristics

In this study, 843 students were proportionally allocated to four high schools: BalchaAbanefso 25% (210/843), AbiotKirs 25% (210/843), Hidase 25% (211/843), and ShimelisHabte Secondary Schools 25% (210/843). Of the 843 selected students, 828 (98.22%) completed the self-administered questionnaire and eligible for analysis.

Among the 828 students, 42.6% (353/828) were male and 57.4% (475/828) were female, resulting in a male-to-female ratio of 1:1.3. The median (Q1, Q3) age of the students was 17 (16, 18) years. More than a quarter,29%(240/828) of the students were grade twelve students, followed by 28% (232/828) were grade nine. More than half 59.7 % (494/828) of the student's current caregivers were their mothers and fathers. Regarding family income, nearly half 47% *(*389/828) of families had a monthly income of 5,000 to 10,000 Birr.Table 1 displays the sociodemographic attributes of the population under investigation.

Table 1 shows the sociodemographic characteristics of students attending particular high schools in Addis Ababa, Ethiopia between June 2023 and February 2024.

Variables		Frequency	Percent
School	BalchaAbanefso	207	25.0
	Abiotkirs	207	25.0
	Hidase	207	25.0
	ShimelisHabte secondary schools	207	25.0
	Total	**828**	**100.0**
Sex	Male	353	42.6
	Female	475	57.4
	Total	**828**	**100.0**
Grade	9^{th}	232	28.0
	10^{th}	162	19.6
	11^{st}	194	23.4
	12^{nd}	240	29.0
	Total	**828**	**100.0**
Care giver	A. Mother & Father	494	59.7
	Mother only	188	22.7

	Father only	57	6.9
	Grandparents	66	8.0
	Orphaned	23	2.8
	Total	**828**	**100.0**
Monthly income	<1000birr	77	9.3
	1000-2999birr	66	8.0
	3000-4999birr	176	21.3
	5000-10,000birr	389	47.0
	>10,000birr	120	14.5
	Total	**828**	**100.0**

5.2Kessler psychological distress (K10) score and prevalence of common mental disorder (CMD)

CMD was measured using the Kessler Psychological Distress Scale (K10). The Scorerange from 0 to 40. The mean±SD of K10 scale score of total students was 11.01±10.9 with the range of 0 to 40. WhereasK10 scale scorein four schools, Hidase school students had the highest mean score 13.37 ±12.27 followed byShimelisHabte secondary school, AbiotKirs and BalchaAbanefso,with the mean ± SD score of10.98± 10.10, 9.84± 11.23 and 9.85 ± 9.76 respectively. (Table 2).

Table 2 K10 score of students, in selected high schools Addis Ababa, Ethiopia from June 2023 to February 2024

Kessler psychological distress score of each school						**Percentiles**		
Secondary schools	Range	Minimum	Maximum	Mean	Std. Deviation	25	50	75
BalchaAbanefso	40	0	40	9.84	11.23	2.0	5.0	20.0
Abiotkirs	26	0	36	9.85	9.76	4.0	5.0	20.0
Hidase	30	0	40	13.37	12.27	4.0	6.0	25.0
shimelisHabte	29	0	39	10.98	10.10	5.0	6.0	21.0

From June 2023 to February 2024, the total prevalence of common mental disorders in selected high schools in Addis Ababa, Ethiopia, was determined to be 266/828 (32.1%; 95% CI: 29–35.4) (Fig. 2). In terms of the prevalence of common mental disorders in various educational settings, over half of Hidase high school students—42.0% (42/828)—had CMD, compared to roughly 31.4% (65/828), 27.7% (57/828), and 27.5% (57/828) of ShimelsHabte,

AbiotKirs, and BalchaAbanefso students, respectively. Table 3 shows a statistically significant difference (P 0.004) in the prevalence of CMD between high schools.

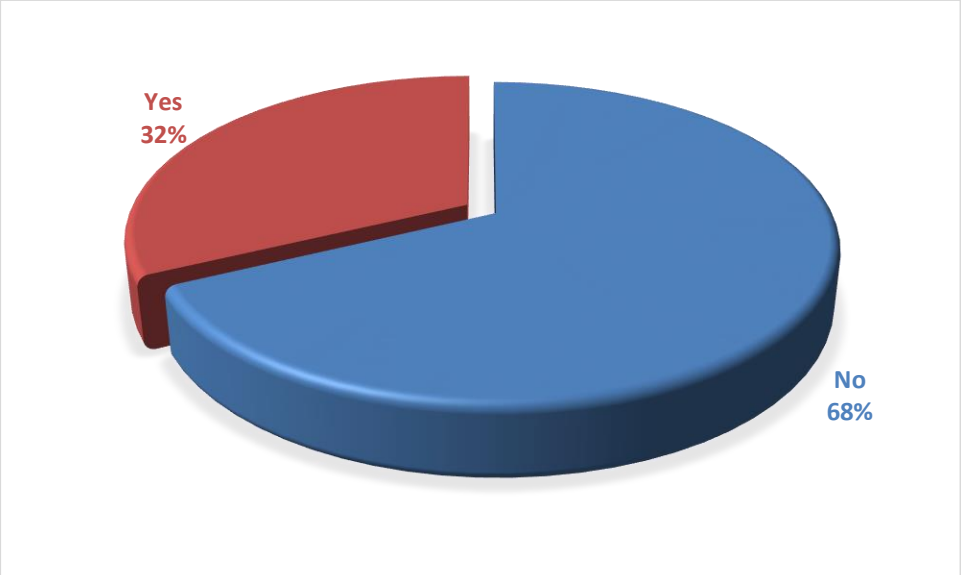


Fig 3 Prevalence of Common mental disorder among selected high schools Addis Ababa, Ethiopia from June 2023 to February 2024

5.3 Substance use

Regarding Substance, nearly two thirds 61.7% (511/828) of the student reported that Addictive substances are present in their living area. Khat and Alcohol were the dominant ones that accounts 36.1% (341/944) and 43.6% (511/944) respectively Fig 4.

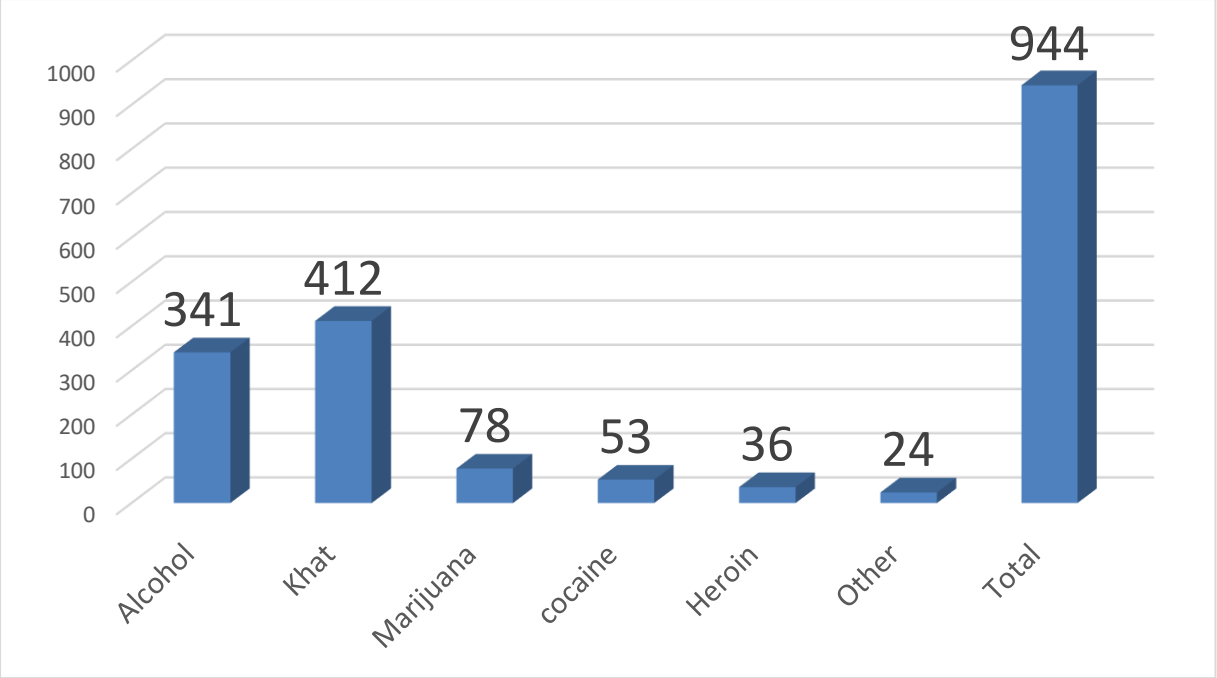


fig4: Type of Substance nearby in selected high schools Addis Ababa, Ethiopia from June 2023 to February 2024

About 17.1% (142/828) of students use addictive substances of these more than one third 40.8% (58/142) use every day) whereas 29.6 % (42/142), 10.6% (15/142), 10.6% (15/142) and 8.5% (12/142) use every 2-3 days, weekly, monthly, and other frequency respectively. Most 81.7 % (116/142) of the students were introduced to using substances by their friends followed by family that account 7% (10/142). Of 118 who try to withdraw substance, 40.7% (48/118) experience with drawl symptom.

Regarding the academic performance of the students, nearly half 47.9% (397/828) of the students had difficulties in their academic performance the rest 52.1% (431/828) hadn't.

Tabel 3 Frequency of substance use in selected high schools Addis Ababa, Ethiopia from June 2023 to February 2024

Variables		Frequency	Percent
Substance use status	Yes	142	17.1
	No	686	82.9
	Total	**828**	**100.0**
Frequency of substance use	Every day	58	40.8
	every 2-3 days	42	29.6
	Weekly	15	10.6
	Monthly	15	10.6
	Other	12	8.5

	Total	**142**	**100.0**
Who introduce you to use substance	Family	10	7.0
	Friends	116	81.7
	Other	16	11.3
	Total	**142**	**100.0**
Why adolescents try drugs	Peer pressure	417	39.3%
	to cope with home problems	236	22.2%
	lack of parental guidance	187	17.6%
	To deal with school	72	6.8%
	Depression	150	14.1%
	Total	**1062**	**100.0%**

5.4 Factors affecting common mental disorders.

This study used bivariable analysis to examine explanatory variables such sex, age, student grade, monthly income, current caregiver, drug and/or substance usage, frequency of substance use, and academic achievement. Six factors were chosen as potential candidates for the multivariable analysis for the prevalence of CMD based on the p-value (<0.25) of the bivariable analysis. These variables are: the student's age, grade, monthly income, the caretaker's present status, drug and/or substance use, and academic performance challenges.

The multivariable analysis's outcome showed that: male sex, grade 11 and 12 student, care giver father only, monthly income less than 1000-birr, monthly income 1000 -2999-birr,monthly income 3000 -4999 birr, monthly income 5000 - 10000 birr, substance use and difficulty in academic performance

The odds of CMD were 31% lower in males as compared to females[AOR=0.69; 95% CI: 0.49 -0.96; p-value 0.029].

The odds of CMD were 2 times higher in grade 11 students as compared to grade 9 students[AOR=1.91; 95% CI: 1.23 - 2.96; p-value 0.004]. whereas the odds of CMD were 2 times higher in grade 12 students as compared to grade 9 students[AOR=1.78; 95% CI: **1.16 - 2.73**; p-value 0.008].

The odds of CMD were 2 times higher in care giver father only as compared to care giver mother and father[AOR=2.11; 95% CI: 1.15 -3.86; p-value 0.015].

The odds of CMD were 3 times higher in parent monthly income less than one thousand as compared to parent monthly income greater than ten thousand [AOR=3.44; 95% CI: 1.58 – 7.47; p-value 0.002].

The odds of CMD were 3 times higher in parent monthly income between 1000-2999birr as compared to parent monthly income greater than ten thousand [AOR=2.97; 95% CI: 1.39 – 6.34; p-value 0.005].

The odds of CMD were 2 times higher in parent monthly income between 3000-4999birr as compared to parent monthly income greater than ten thousand [AOR=2.57; 95% CI: 1.37 – 4.83; p-value 0.004].

The odds of CMD were 2 times higher in parent monthly income between 5000-10,000birr as compared to parent monthly income greater than ten thousand [AOR=2.13; 95% CI: 1.21 – 3.76; p-value 0.009].

The odds of CMD were 2 times higher in substance user as compared to the counter group[AOR=1.79; 95% CI: 1.19 – 2.70; p-value 0.005].

The odds of CMD were 3 times higher in those who were in academic difficulties as compared to the counter group [AOR = 2.63; 95% CI: 1.92–3.61; p-value 0.0001].

Table 4 shows the findings of a bivariate and multivariate logistic regression study conducted from June 2023 to February 2024 on a subset of high schools in Addis Ababa, Ethiopia.

Explanatory Variables		**Prevalence of CMD**		**Bivariate analysis (COR)**	**Multivariate analysis (AOR)**	**P-value**
		No	Yes			
Sex	Male	255	98	**0.7[0.51-0.94]**	**0.69 [0.49 -0.96]**	**0.029**
	Female	307	168	1	1	
Grade	9th	171	61	1	1	
	10th	118	44	0.84[1.04 - 1.64]	1.11[0.69 – 1.79]	0.662
	11st	118	76	**1.80[1.19 - 2.72]**	**1.91 [1.23 – 2.96]**	**0.004**
	12nd	155	85	**1.53[1.03–2.28]**	**1.78 [1.16 - 2.73]**	**0.008**
Care giver	Mother & Father	361	133	1	1	
	Mother only	118	70	1.61 [1.0 - 2.0]	1.17 [0.87 – 1.95]	0.19
	Father only	33	24	**1.97 [1.12 - 3.46]**	**2.11 [1.15 -4.38]**	**0.015**
	Grandparents	42	24	1.55 [0.90 - 2.66]	1.10 [0.59 – 2.06]	0.749
	Orphaned	8	15	5.08 [2.10 - 12.28]	2.41 [0.89 – 6.54]	0.082
Monthly income	<1000birr	44	33	0.81 [0.47 -1.79]	**3.44 [1.58 – 7.47]**	**0.002**

	1000-2999birr	39	27	0.78 [0.45 – 1.34]	**2.97 [1.39 – 6.34]**	**0.005**
	3000-4999birr	111	65	0.60 [0.37– 1.0]	**2.57 [1.37 – 4.83]**	**0.003**
	5000-10,000birr	267	122	**0.25 [0.12 – 4.48]**	**2.13 [1.21 – 3.76]**	**0.009**
	>10,000birr	101	19	1	1	
Substance use	Yes	82	60	**1.70 [1.17 -2.47]**	**1.79 [1.19 – 2.70]**	**0.005**
	No	480	206	1	1	
Difficult in Academic performance	Yes	255	172	**2.74 [2.0 -3.71]**	**2.63 [1.92 – 3.61]**	**0.0001**
	No	337	94	1	1	

As for the relationship between substance use and academic achievement, our results showed that there was none that was statistically significant [COR = 0.79; 95% CI: 0.55 1.135; p-value 0.20].

6. Discussion

This prospective school-based cross-sectional study involved 828 students and was carried out from June 2023 to February 2024 at the secondary schools in Addis Ababa, Ethiopia at the BalchaAbanefso, AbiotKirs, Hidase, and ShimelisHabte.

According to our study, from June 2023 to February 2024, the prevalence of common mental disorders among a selected high schools in Addis Ababa, Ethiopia, was 326/828 (31.2.4%; 95% CI: 29 –35.4). This finding was in line with findings from other studies conducted in South American countries, such as Brazil, Chile, and Santiago, as well as African countries, such as South Africa, where the prevalence of CMDs was reported to be 29.9%, 25%, and 34.9%, respectively(14, 18).

In comparison to females, males had 31% fewer variables impacting CMD [AOR=0.69; 95% CI: 0.49 -0.96; p-value 0.029]. A systematic study and meta-analysis carried out in Ethiopia revealed a similar conclusion [25]. Similarly, research carried out at Mekelle High School [26], [27] and Egypt [28].There may be more female students experiencing mental anguish than male students due to the emotional nature of their reactions to stressors, domestic violence, and hormonal fluctuations during menstruation [28][29].

In comparison to parent monthly income more than ten thousand Ethiopian Birr, the odds of CMD were three times higher in the former case [AOR=3.44; 95% CI: 1.58 – 7.47; p-value 0.002]. Poverty and common mental diseases in low- and middle-income countries: a systematic review Low SES and CMD were positively correlated, according to five of the six investigations. Bivariate analyses indicated that low SES and CMD were positively correlated in five out of the six trials. SES was inversely linked with lifetime depression (OR: 0.5, 95% CI: 0.3–0.8) among elderly Nigerians in the exceptional study, as determined by the CIDI. Multivariate analysis revealed a positive correlation between low SES and CMD in all 5 of the studies that reported on them.

Compared to the countergroup, those experiencing academic challenges had three times the risk of CMD [AOR = 2.63; 95% CI: 1.92–3.61; p-value 0.0001). In a cohort research on mental health and academic achievement, selection and causality effects from early infancy to early adulthood were examined. The overall study included all women who gave birth to children in five geographically adjacent municipalities in southern Sweden during 20

consecutive months in 1995–1996. The findings indicated that mental health issues in early childhood and adolescence increase the risk for poor academic performance, indicating the need for awareness and treatment to provide equitable opportunities for education.(30)

In reference to the correlation between substance abuse and academic achievement, there was no statistically significant correlation found between the two [COR = 0.79; 95% CI: 0.55 1.135; p-value 0.20].This might be the case because the data was gathered from students who participated in their education; possibly as a result, they have effective coping mechanisms and are capable of succeeding academically.(30).

7. Strength and Limitations of the study

Its strength is that, compared to other studies, this one can be more broadly applied because it was carried out at four high schools (multisite) and had a big sample size.
The self-administered questionnaires used to collect the data may introduce reporting bias; some questions assessed history, which is susceptible to recall bias; the study was cross-sectional, making it difficult to establish a cause-and-effect relationship; and the inability to objectively assess academic performance in keeping with subject anonymity are some of the limitations of this research that should be taken into account.

8. Conclusion

Thirty-one percent of secondary school students had CMDs. There was a strong correlation found between having a CMD and being female, having LSES, being a parent alone providing care, higher grade levels (grades 11 and 12), and substance usage. As a result, this study suggests that students should have access to intervention services and create planned activities that would lower the frequency of CMDs and the factors that contribute to them. Promoting CMDs for screening, detection, and early treatment is always necessary as a foundation to address this issue. It was advised to provide guidance and counselling to female students in high school, support anti-drug student clubs, and enhance communication between parents, instructors, and students. The timing and distribution of resources for early intervention and preventive measures can also be influenced by these results.

Regarding Substance, nearly two thirds 61.7% of the students reported that Addictive substancesare present in their living area. Khat and Alcohol were the dominant ones that accounted for 36.1and 43.6% respectively.Of the total 828 respondents 17.1% of students use

addictive substances.Therefore there is a need of strengthening and strictly applying Ethiopian proclamation which bans the selling of substances like Alcohol,Khat and cigarette near their School compound and residency .

9. Recommendations

The following suggestions are made in light of the study's findings.

- The government ought to think on the following: assisting in the establishment of counseling and psycho-pedagogical support systems to help pupils develop their resilience. It also takes life skill training to discuss the issues honestly and take proactive measures to solve them.
- Longitudinal and interventional studies should be carried out to gain a deeper knowledge of the relationship between students' academic success and mental health trajectory.
- The ministry of health and school administrators should put more effort into bolstering the multimedia in schools to emphasize anti-drug concepts and to enhance communication between educators, parents, and students

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Annex I: Questionary

Annex I Assent form and QuestionaryAmharic Version

<u>የጥናቱመረጃእናስምምነትሰነድ</u>

እኔዶ/ርብሩክሰይድእባላለሁበአዲስአበባዩኒቨረሲቲየህክምናኮሌጅየህጻናትትምህርትክፍልየመጨረሻአመትየህጻና ትህክምናተማሪነኝ።ይህጥናትበአዲስአበባበተመረጡሁለተኛደረጃትምህርትቤቶችየሚካሄድሲሆን፣ወደዋናዉጥ ያቄናመልስከመግባታቺንበፊትስለጥናቱአላማናስለጥናቱአስፈላጊነትእንዲገነዘቡትአደርጋለሁ።በጥናቱላይለመሳ ተፍሙሉፈቃደኝንዎትንበእንዲሰጡበታላቅትህናእጠይቃለሁ፥፥

<u>የጥናቱመነሻሐሳብእናአላማ</u>

ይህጥናትየአእምሮህመሞችእናበጉርምስናዕድሜላይየሚገኙወጣቶችከትምህርትቤትአፈጻጸምጋርያለውግንኙነት ያጠናል።የጥናቱአላማበጉርምስናዕድሜላይየሚገኙወጣቶችየአእምሮህመሞችመጠንናከትምህርትቤትአፈጻጸም ጋርያለውግንኙነትተያያዥችግሮችንለማሳወቅነው።ከጥናቱየሚገኝውመረጃየጥንቃቄእቅጣጫዎችንለማሳየትና መተዳደሪያዎችንለማዘጋጀትይረዳል።

<u>ከእርሶምንይጠበቃል፤</u>

እርሶበጥናቱእንዲሳተፍከፈቀዱስለየማህበራዊእናጤናሁኔታመረጃይሰጣሉ።

በጥናቱላይበመሳተፍየሚያጋጥሙስጋቶች

እርሶበዚህጥናትበመሳተፉየሚደርስቦአንዳችምጉዳትአይኖርም።

<u>ሚስጥርስለመጠበቅ</u>

የጥናቱተሳታፊዎችንመረጃምሆነማንነትበሚስጥርየሚጠበቅይሆናልበመሆኑምየተሳተፈዉስምበጥናቱመጠይቅ ላይአይካተትም።

<u>በጥናቱለመሳተፍስለአለመፈለግወይምተሳትፎንስለማቻረጥ</u>

በጥናቱእንዲሳተፉአይገደዱምእንዲሁምተሳትፎዎንበማንኛውምጊዜማቻረጥይችላሉ።በመሳተፎራስዎንበተመለ ከተመግለፅየማይፈልጉትመረጃካለእንዲገልፁአይገደዱም።በጥናቱመሳተፍባይፈልጉየሚያድርስቦትምንምአይነት ተጽእኖአይኖርም።

<u>የጥናቱጥቅም</u>

ከዚህጥናትየሚገኝውመረጃበአዲስአበባለሚገኙሁለተኛደረጃትምህርትቤቶችእንዲሁምበሀገራችንለሚገኙሁለተ ኛደረጃትምህርትጠቃሚመመሪያያሳያል።

<u>በጥናቱወቅትጥያቄቢኖሮት</u>

ማንኛውምጥያቄካሎትከዚህበታችበተገለፀውየዋናተመራማሪአድራሻበመጠቀምመጠየቅይችላሉ።

የስምምነትሰነድ

እርሶበዚህጥናትለመሳተፍፍቃደኛስለሆኑበቅድሚያእያመሰገንንከበታችበተዘጋጀውቦታላይእንዲፈርሙበትህትና እንጠይቃለን።

ከዚህበታችፊርማዬየተገለፀውግለሰብከላይየተገለፁትንመረጃዎችበማንበብናበመረዳቴእንዲሁምለነበሩኝጥያቄ ዎችአጥጋቢመልስበማግኘቴየጥናቱተሳታፊእንድሆንተስማምቻለሁ።

የመረጃእናስምምነትሰነድ

ፊርማ:_____

ቀን፡_____

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1.የትምህርትቤትስም ----------

2.ፆታወንድ-------- ሴት---------

3.እድሜ----------

4.ክፍል----------

5.እንክብካቤሰጭዎችሀ.እናትእናአባትለ.እናትብቻሐ.አባትብቻመ. አያት

ሠ. ወላጆቹንበሞትያጣ

6.የወርገቢ

ሀ.‹1000 ብርለ.1000-2999ብርሐ.3000-4999ብርመ.5000-10000 ብርሠ.›10000 ብር

ክፍል 1መጠይቅ

1. በዚህአንድወርውስጥየመደበር (የመከፋት) ስሜትምንያህልጊዜይሰማዎትነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

2. በዚህአንድወርውስጥበጣምከመደበርዎ (ከመከፋትዎ) የተነሳምንምነገርሊያስደስትዎያልቻለበትምንያህልጊዜነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

3. በዚህአንድወርውስጥሊረጋጉቢችሉምእንኳንየመጨነቅስሜትምንያህልጊዜይሰማዎትነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

4. በዚህአንድወርውስጥበጣምከመጨነቅዎየተነሳምንምነገርሊያረጋጋዎትያልቻለበትጊዜምንያህልነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

5. በዚህአንድወርውስጥየመቁነጥነጥወይምእረፍትየማጣትስሜትምንያህልጊዜይሰማዎትነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

6. በዚህአንድወርውስጥበጣምከመቁነጥነጥዎየተነሳአንድቦታመቀመጥያልቻሉበትጊዜምንያህልነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

7. በዚህአንድወርውስጥለማንምአልጠቅምም (ዋጋየለኝም) የሚልስሜትምንያህልጊዜይሰማዎትነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
   1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

8. በዚህአንድወርውስጥምንምያህልሳይሰሩሲደክሞትየነበረውምንያህልጊዜነበር?
   4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት

1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

9. በዚህአንድወርውስጥተስፋየመቁረጥስሜትምንያህልጊዜይሰማዎትነበር?
4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

10. በዚህአንድወርውስጥሁሉንምነገር (ለምሳሌ- መናገር፡መነሳት፡መሄድ፡የመሳሰሉትን) የግድዎንያደርጉየነበረውምንያህልጊዜነበር?
4.ሁልጊዜ 3.አብዛኛውንጊዜ 2.ለጥቂትጊዜያት
1.እምብዛምአይሰማኝም 0.በፍጹምተሰምቶኝአያውቅም

ክፍል 2 መጠይቅ

1. በእናንተአካባቢአደንዛዥእፅይገኛል? ሀ. አዎለ. የለም
2. ለአንደኛዉጥያቄመልስአዎከሆነ፣ምንአይነትአደንዛዥእፆችይዘወተራሉ?
ሀ. አልኮልለ. ጫትሐ.ማሪዋናመ.ኮኬንሠ. ሄሮይንረ.ሌላካለይጥቀሱ------
3. አደንዛዥእፅተጠቃሚነህ/ሽ? ሀ. አዎ --------ለ. አይደለሁም---------
4. ለአንደኛዉጥያቄመልስአዎከሆነ፣ምንያህልጊዜሀ.በየቀኑለ.በየ 2-3 ቀንሐ. በየሳምንቱመ.በየወሩሠ. ሌላ----------
5. መጀመሪያአደንዛዥእፅእንድትጠቀምያደረገህማነዉ? ሀ.ቤተሰብለ.ጓደኛሐ. ሌላ-----
6. ወጣቶችለምንድንነዉአደነወዛዥአፅለመዉሰድየሚሞክሩትሀ.የጓደኛግፊትለ.ችግሮችንለመቋቋምሐ. የቤተሰብቁጥጥርማነስመ. ትምህርታቸዉላይለዉጥስለሚኖረዉሠ.ድባቴ
7. በትምህርትዉጤትላይችግርአጋጥሞህ/ሽያዉቃልሀ.አዎለ. አይደለም
8. አደንዛዥእፅለመተዉ/ለማቆም/ ሞክረህ/ሽየህመምስሜትተሰምቶህ/ሽያዉቃልሀ.አዎለ.አይደለም

English VersionQuestionary

Part I Socio-demographic				
S. No	Question	Answer	Code	Remark
101		1.Balcha abanefso,		
		2.Abiot kirs		
		3.hidase		
		4.shimelis Habte secondary schools		
102	Gender	Male		
		Female		
103	Age	_____Years		
104	Care giver of the adolescent	Mother & Father	1	
		Mother only	2	
		Father	3	
		Grandparents	4	
		Orphaned	5	
105	Income	<1000birr	1	
		1000-2999birr	2	

	3000-4999birr	3	
	<.5000-10,000birr	4	
	.>10,000birr	5	

Part II Clinical Characteristics

NO.	In the past 4 weeks	none of the time(0)	A little of time(1)	some of the time(2)	most of the time(3)	All of the time(4)
201	About how often did you feel tired out for no good reason?					
202	During the last 30 days, about how often did you feel nervous?					
203	About how often did you feel so nervous that nothing could calm you down?					
204	About how often did you feel restless or fidgety?					
205	About how often did you feel so restless you could not sit still?					
206	About how often did You feel depressed?					
207	About how often did you feel that everything was an effort?					
208	About how often did you feel so sad					

	that nothing could cheer you up?					
209	About how often did you feel hopeless?					
210	About how often did you feel worthless?					
For all questions, please select the appropriate response						
Part III About substance (drug) use						
301	Are drugs (addictive substances) easily available in your area?	Yes	1			
		No	2			
302	If yes? What types of drugs are available in your area?	Yes	1			
		No	2			
303	Do you use drugs?	Alcohol	1			
		Khat	2			
		Marijuana	3			
		Cocaine	4			
		Heroin	5			
		Other _____	6			
304	Who introduced you to drugs?	Yes	1			
		No	2			
		Other _____				
305	Why adolescents try drugs?	Peer pressure	1			
		to cope with home problems	2			
		To deal with school	3			
		lack of parental guidance	4			
		Depression	5			
306	If your answer to question 6 is yes, how often do you use?	Every day	1			
		Every 2-3 days	2			
		Weekly	3			
		Monthly	4			
		Others	5			
307	Have you been in difficulties in your academic performance?	Yes	1			
		No	2			
308	Do you experience withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	1			
		No	2			

Annex II: Declaration form

This is to certify that the thesis prepared by **Dr.BirukSeid**, entitled: **Magnitude of Common Mental disorders and its Association with school Performance in Adolescents among selected high schools in Addis Ababa, Ethiopia February 2024**and submitted in partial fulfilment of the requirements of speciality complies with the regulations of the university and meets the accepted standards with respect to originality and quality. This thesis has not been presented for a degree in any other university, and that all sources of materials used for the thesis have been duly acknowledged.

ASSURANCE OF PRINCIPAL INVESTIGATORS

I, the undersigned, declare that this postgraduate degree thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

1.Name of the student: _____Signature_____ Date.

_____

APPROVAL OF THE ADVISORS

This thesis has been submitted with my approval as university advisor.

APPROVAL OF ADVISOR

Name of the first advisor: _____Signature _____ Date. _____

Name of the second advisor: _____ Signature_____Date. _____

APPROVAL OF EXAMINER

Name: _____

Signature _____ Date. _____