Prevalence of Common Mental Illness and Its Associated Factors among Hawassa City High School Students in Hawassa, Sidama Region, Ethiopia

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Abstract

Introduction: Common mental illness is a group of mental disorders that include depression, anxiety, and somatoform disorders. World Health Organization estimated that common mental illness accounts for 30% of non-fatal disease burden worldwide. There are limited school-based studies on adolescent mental health in developing countries like Ethiopia, particularly in Hawassa City, Southern Ethiopia.

Objectives: To assess the prevalence of common mental illness and associated factors among Hawassa City secondary and preparatory school students, in Hawassa City, Southern Ethiopia.

Methods: Institution-based cross-sectional study was conducted between 30th October and 1st December 2020. A multistage sampling technique was used to select 634 students and a Self-Reported Questionnaire was used to assess common mental illness. Data were coded and double entry undertaken using EpiData version 3.1 and exported to Statistical Package for Social Sciences (SPSS) version 26 for analysis. Bivariable logistic regression analysis was undertaken and variables with a P-value <0.25 were entered into a multivariable regression model. Multivariable logistic regression was used to identify associated factors, and a P value <0.05 was considered as the cut-off point to declare a

significant association.

Result: The prevalence of common mental illness was 20.7%. After adjusting for other variables age 15-19 years [AOR=0.51, 95% CI: (0.27, 0.97)], female sex [AOR=1.79, 95% CI: (1.10, 2.39)], grade 9 [AOR=0.41, 95% CI: (0.22, 0.76)], grade 10 [AOR=0.46, 95% CI: (0.23, 0.82)], chew khat currently [AOR=2.46, 95% CI: (1.07, 5.65)], poor social support [AOR=2.34, 95% CI: (1.27, 4.32)] and had medical illness [AOR=3.16, 95% CI: (1.64, 6.09)] were independent predictors of common mental illness.

Conclusion: The prevalence of common mental illness among high school students in the study area is high. Older age, female sex, higher grade, khat chewing, poor social support and having medical illness were risk factors for common mental illness. Guidance and counseling for high graders and females, strengthening student clubs (anti-drug) and improving communication between students, parents, and teachers were recommended.

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1. Introduction

Mental illness is defined as “any disorder that is generally characterized by a change in mood, thought and/or behavior. Common mental illnesses (CMI) include depression, anxiety, and Somatoform disorders[1]. These disorders are highly prevalent in the general community; hence they are considered ‘common’ and impact on the mood or feeling of victims. The symptoms of common mental illness range from mild to severe, and the duration from months to years. Furthermore, CMI are diagnosable health conditions that are distinct from feelings of sadness, stress or fear that anyone can experience from time to time in their daily lives[2]. Mentally distressed individuals manifest with different levels of depression, anxiety or somatic symptoms. Moreover, the CMI significantly affects social, enjoyment, work interactions and academic attainment, leading to adverse health outcomes including death by suicide[3][4].

Depressive disorders are characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration. It can be mild and long-term or severe and periodic and it usually significantly affects the person’s regular task at work or school and other life activities as a whole. Depressive disorders can be classified as Major depressive disorder and Dysthymia based on the severity of symptoms

and their recurrence. Anxiety disorder is a vague, subjective, non-specific feeling of uneasiness, apprehension, tension, (excessive nervousness) fear, a sense of impending doom, irrational avoidance of objects or situations and anxiety attack[5]. It includes generalized anxiety disorder (GAD), panic disorder, phobias, social anxiety disorder, obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). Psychosomatic disorders are illnesses that manifest as physical symptoms however the causes always arise from mental and emotional instead of physiologic disorders of the body. The term also refers to conditions in which a medical examination fails to find any organic cause and appears to result from emotional conditions[6]. Since many people experience these conditions simultaneously (comorbidity), it is inappropriate to simply add these three figures together to arrive at a total for common mental disorders[2].

During the adolescence period, a fast-growing child will consistently seek to learn new things, engage in self-experimentation, and initiate an autonomous lifestyle. As a result, adjustments are necessary to accommodate physical maturity, changing roles within families and peers. Compared to adults, adolescents show higher stress levels and fewer coping resources and often mental disorders which are diagnosed in adults often begin in adolescence. The stressful process of differentiation and identity consolidation can result in significant psychological distress[7]. Most adolescents experience a diminished quality of life in practically all areas: with respect to their own bodies, school, their mental state, and their families[8].

Many longitudinal studies have shown that mental disorders become more prevalent from childhood to adolescence[9]. One in 5 adolescents aged 13-18 already have or will have a serious mental illness. Mental illnesses that manifest during adulthood begin during adolescence, 50% and 75% of all mental illness cases started by age 14 and 24 respectively. Moreover, it is estimated that intervention for mental illness usually starts eight to ten years later than the onset of symptoms. Approximately half of students aged 14 and above with mental illnesses are expected to drop out of high school. Still, depression is the most common type of mental disorder faced by adolescents often accompanied by anxiety and mental distress. Back in 2011, almost 29% of high school students in secondary and preparatory schools who took part in a national school-based survey claimed feelings of sadness and hopelessness almost every day for two weeks or longer during the past year- a red flag for possible clinical depression[10].

Moreover, the consequence of CMI can be short or long term and unless the symptoms are too dramatic or rather extremely distressing, they are often neglected by the relatives and are considered to be due to some kind of weakness on the patient's part[11]. Individuals with mental disorders are also affected by diseases like cancer, cardiovascular disease, HIV/AIDS. Homelessness and inappropriate incarceration are more common. Stigmatization and discrimination are also observed, and many are deprived of their human right as well as economic, social, and cultural rights, with restrictions on the rights to work and education, reproductive rights and the right to the highest attainable standard of health. Apart from this, they will be subject to physical and sexual abuse, neglect, harmful and degrading practices in health facilities[12].

From the perspective of the magnitude of common mental disorders; studying the distribution and the factors that have contributed to the adolescent age group is of paramount importance for introducing preventive and control strategies at

the right time[13].

2. Methods and Materials

Study setting

The study was carried out in Hawassa city administration which is the capital city of Sidama region. It is located 275km from Addis Ababa, Ethiopia. The city is classified into eight administrative sub-cities with 32 kebeles (20 urban and 12 rural). Currently, the city has a total population of 367,908 of which 51% are females. According to the National Housing and Population Census of 2007, the proportion of adolescents (10-19 years) in the city is about 29.64% of the total residents. There are a total of 29 secondary and preparatory schools with 462 sections among which 15 are governmental and 14 are non-governmental. A total of 27055 students enrolled from grades 9 - 12 in the 2019/20 academic year. There are six student clubs in most of the schools. HIV/AIDS, Anti-substance use, and reproductive health clubs are working on health issues with the support of the city health department and non-governmental organizations.

Study design and period

Institution-based cross-sectional study design was conducted from November to December 2020.

Source and Study Population

Source population

The source population was all high school students in Hawassa City.

Study population

Randomly selected students from the selected high schools in Hawassa city

Inclusion and Exclusion Criteria

Inclusion Criteria

Students who are enrolled in high schools of Hawassa city in 2020/2021GC.

Exclusion Criteria

Students who were absent in their classrooms during follow-up data collection time were excluded from the study.

Sample size determination

Sample size for objective one

Sample size was calculated by using a single population proportion formula with the following assumptions:

- 95% level of confidence (Z= 1.96)
- 50% Prevalence of CMI (Since no similar study was conducted in this setting).
- Margin of error 5%(d=0.05)

$$n = (Z1 - \alpha/2)^2 p(1-p)/d2 = \frac{(1.96)^2 * 0.5 * 0.5}{(0.5)^2} = 384 \text{ students}$$

Furthermore, to account for the clustering effect, the multi-stage sampling technique that was used in this study, a design effect of 1.5 was accounted for in the calculations to arrive at a sample size of 576. After adding a 10% non-response rate the final sample size was 634.

Sampling technique and sampling procedure

A multi-stage sampling was employed, which involves four stages. In the first stage, from a total of 29 schools, 5 schools were randomly using the lottery method. The total sample size for the study was distributed proportionally across each school based on the number of students enrolled in each school. In the second stage, grades in each selected school were stratified by their levels as 9, 10, 11 and 12. In the third stage, 3 sections from each grade were chosen by using simple random sampling. Finally, by using a roster as a sampling frame, subjects were selected by simple random sampling. Class representatives from each section were contacted for ease of contacting the study participants.

Data Collection tools and procedure

Data collection tools

Data was collected using a structured self-administered questionnaire with five parts. The questionnaire started by enquiring about the socio-demographic characteristics of students. The second part of the questionnaire was the Self-Reporting Questionnaire-20 (SRQ-20). SRQ-20 was used to estimate the prevalence of common mental illness among students. It is a standardized 20-item questionnaire that was first developed by the World Health Organization (WHO) for the purpose of screening common mental illnesses. The SRQ has recently been validated in Eritrea and it has been used for community surveys. In this study, students who were found to have 7 or more symptoms of the 20-item self-reporting questionnaires (SRQ-20) in the last 4 weeks were considered as having common mental illness. The cutoff point was used based on the reports from the validation study of SRQ-20 that gave the highest sensitivity and specificity which corresponds to a cut-off point of 7[14][15]. The third part of the questionnaire was about behavioral factors, which include a history of substance use/abuse. The fourth part of the questionnaire was about social support and school belongingness factors. Perceived Social support will be measured by a multi-dimensional scale of perceived social support and school belongingness will be measured by the Simple School Belonging Scale[16][17]. The last part of the questionnaire assessed

past illness and abuse-related factors. The Questionnaires were first developed in English then translated to Amharic and back to English to check for consistency. In this study, the data were collected using the Amharic language questionnaire.

Data collection procedure

Data collectors were three health professionals who were working in the study area, one supervisor with previous experience in data collection and supervision was recruited and checked the data quality and supervised the overall procedure of data collection on a daily basis. The principal investigator also followed the overall procedure of data collection closely. Those who were not selected left the class till the end of the data collection process. Students who were absent during data collection were informed through their friends and data was collected from them on the next day.

Operation definitions

Common mental illness- students who were found to have 7 or more symptoms(headache, lack of appetite, sleep problem, being frightened, shaking hands, feeling nervous, poor digestion, not thinking clearly, feeling unhappy, crying more than usual, difficulty to enjoy daily activities, difficulty with decision making, daily work suffering, not feeling life is useful, feeling worthless person, thinking of ending life, loss of interest in life, always feeling tired, uncomfortable feelings in the stomach, and easily tiring) of the SRQ-20 questions in the last one month were considered as having common mental illness[14].

Social support- was assessed by using a 12-item Multidimensional Scale of Perceived Social Support. Four-point Likert scale, 1=never, 2=sometimes, 3=most of the time and 4=always was used. A score of 36-48 was considered a high level of social support whereas a score of 24-35 and 12-23 were considered as moderate and low levels of social support respectively[17].

School belongingness In this study students who scored above the mean were considered a high sense of school belonging and those below the mean score were considered a low sense of school belongingness[16].

Data management and analysis

Data was coded and double undertaken by using EpiData version 3.1. Then, the data was exported to SPSS version 26 for cleaning and analysis. Descriptive analysis was performed for the dependent and independent variables and frequency and percentage measures were presented by using tables and graphs. Binary logistic regression was undertaken to see the association between dependent and independent variables. Variables having a p-value of <0.25 on bivariable logistic regression were selected as candidate variables for the multivariable logistic regression model. In the multivariable binary logistic regression model, the backward model building method was used while building the model. Fitness of the logistic regression model (non-significant Hosmer & Lemeshow) and multicollinearity (VIF) was checked, variables having a P-value of <0.05 were considered statistically significant and adjusted Odds Ratio (AOR) with 95% confidence interval was presented to show the magnitude of association.

Quality assurance techniques

The quality of data was assured by proper designing and pre-testing, proper categorization, and coding of the questionnaire. Both the data collectors and supervisors were trained for one day on techniques of approaching, introducing themselves and on clarification of the importance of responding to the questions of the study to the study participants before the start of data collection. The supervisor was trained on how to check the completeness and consistency of questionnaires. The pretest was carried out in 5% of the sample size one week prior to the actual data collection time at Shashemene High School. The questionnaire was checked for its clarity, understandability, uniformity and completeness of the questions and important amendments were made based on the pretest result. The logical flow of ideas was maintained.

Result

Socio-demographic characteristics

A total of 613 students participated in this study with a response rate of 96.7%. The mean (SD) age was 17.8 (1.76) years and range between 15 to 24 years. More than half, 318 (51.9%) of the students were males and 190 (31.0%) were in grade nine. The majority 398 (64.9%) of the students were Sidama ethnic group, 565 (92.2%) were single and 343 (56.0%) were protestant followers. Regarding the educational status of the parent of the students, 225 (36.7%) of the participants' fathers has attended college and above while 176 (28.7%) of the participants' mothers can only read and write. Two hundred eighty-five (46.5%) of the students were currently living with both parents whereas 120 (19.6%) were living with a single parent. Most (60.7%) of the participants' families were urban dwellers (**Table 1**).

Table 1. Socio-demographic characteristics of Hawassa City high school students, Hawassa, Southern Ethiopia 2020.

Variable (*n=613)*	Number (%)
Age (in years)	
15-19	537 (87.6)
20-24	76 (12.4)
Sex	
Male	318 (51.9)
Female	295 (48.1)
Grade level	
9th	190 (31.0)
10th	162 (26.4)
11th	126 (20.6)

12^{tn}	135 (22.0)
Ethnicity	
Sidama	398 (64.9)
Amhara	54 (8.8)
Oromo	42 (6.9)
Wolayta	38 (6.2)
Other*	81 (13.2)
Religion	
Orthodox	121 (19.7)
Muslim	57 (9.3)
Protestant	343 (56.0)
Others**	92 (15.0)
Marital status	
Single	565 (92.2)
Married	43 (7.0)
Divorced	0 (0.0)
Widowed	0 (0.0)
Separated	5 (0.8)
Father's educational status	
Illiterate	46 (7.5)
Read and write	142 (23.2)
Primary education	75 (12.2)
Secondary education	125 (20.4)
College and above	225 (36.7)
Mother's educational status	
Illiterate	88 (14.4)
Read and write	176 (28.7)
Primary education	94 (15.3)
Secondary education	137 (22.3)
College and above	118 (19.2)
Current living with	
Both parents	285 (46.5)
Father or Mother only	120 (19.6)
Relatives	63 (10.3)
Friends	57 (9.3)
Alone	48 (7.8)
Spouse	40 (6.5)
Family place of residence	
Urban	372 (60.7)
Rural	241 (39.3)

Substance use characteristics of the participants

Among the total study participants, 133(21.7%) chewed khat at least once in their lifetime and 69(11.3%) reported chewing khat currently. Of the current khat chewers 25(36.2%) stated that they chew once per week. Forty-two (6.9%) of the participants were ever cigarette smokers while 22(3.6%) reported smoking in the last month. Regarding alcohol consumption, 162(26.4%) reported that they were ever alcohol consumers whereas 97(15.8%) drink alcohol currently. Among the current alcohol consumers, over two-thirds (69.1%) of them consume once per week. Forty-nine (8.0%) of the respondents smoked shisha at least once in their life, whereas nine (1.5%) of them currently smoke shisha. Furthermore, about 14(2.3%) had ever used ganja/cannabis and 5(0.5%) were current users of ganja/cannabis (**Table 2**).

Table 2. Substance use characteristics of students in Hawassa City high schools, 2020.

Variable		Number (%)	
Ever chewed khat *(N=613).*			
Yes		133 (21.7)	
No		480 (78.3)	
Currently chewed khat (last one month) *(N=613).*			
Yes		69 (11.3)	
No		544 (88.7)	
Frequency of khat chewed per week (n=69)			
Every day		16 (23.2)	
Once		25 (36.2)	
Twice		21 (30.4)	
Other		7 (1.1)	
Ever smoked a cigarette *(N=613).*			
Yes		42 (6.9)	
No		571 (93.1)	
Currently smoked cigarette (last one month) {m/613/}			
Yes		22 (3.6)	
No		591 (96.4)	
Ever drunk alcohol *(N=613).*			
Yes		162 (26.4)	
No		451 (73.6)	
Drink alcohol currently (last one month) *{m/613/}*			
Yes		97 (15.8)	
No		516 (84.2)	
Frequency of drinking per week (n=97)			
Every day		3 (3.1)	
Once		67 (69.1)	

Twice		25 (25.7)
Other		2 (2.1)
Ever smoked shisha (N=613)		
Yes		49 (8.0)
No		564 (92.0)
Smoked shisha currently (last one month) (N=613)		
Yes		9 (1.5)
No		604 (98.5)
Ever smoked ganja (cannabis) (N=613)		
Yes		14 (2.3)
No		599 (97.7)
Currently smoked ganja (cannabis) (last one month) (N=613)		
Yes		5 (0.8)
No		608 (99.2)
Frequency of ganja smoking per week (n=5)		
Daily		1 (20.0)
Once		2 (40.0)
Twice		2 (40.0)

Social support and School belongingness conditions of the participants

In terms of social support, 262(42.7%) of the participants had moderate support and 243(39.6%) had strong social support. The mean (SD) sense of school belongingness score of the study participants was 25.3 (7.71) with a range of 10 to 40. More than half 325 (53.0%) of the participants had a low sense of school belongingness (**Table 3**).

Table 3. Social support and school belongingness conditions of students in Hawassa City high schools, Hawassa, Southern Ethiopia, 2020.

Variable *(N=613)*		**Number (%)**
Social support		
Poor		108 (17.6)
Moderate		262 (42.7)
Strong		243 (39.6)
Sense of school belongingness		
High		288 (47.0)
Low		325 (53.0)

Past illness and abuse-related conditions of the participants

Sixty-five (10.6%) of the participants reported having chronic medical illness. Among those with medical illness, the majority 36 (55.4%) had a recurrent headache (Migraine) and 10(15.4%) had heart disease. Regarding the family history of mental illness among the respondents, 56(9.1%) of them reported that they had members of their family suffered. Apart from illness, 95(15.5%) talked uncomfortably about sex and 60(9.8%) were touched uncomfortably in a sexual manner. Forty-four (7.2%) of the participants reported being beaten in the last three months (**Table 4**).

Table 4. Past illness and abuse-related characteristics of students in Hawassa City high schools, Hawassa, Southern Ethiopia, 2020.

Variable		Number (%)
Do you have any medical illness *(N=613)*		
Yes		65 (10.6)
No		548 (89.4)
Type of illness (n=65)		
Heart disease		10 (15.4)
Diabetes mellitus		4 (6.2)
Asthma		6 (9.2)
Migraine/recurrent headache		36 (55.4)
Other*		11 (16.9)
Family history of mental illness *(N=613)*		
Yes		56 (9.1)
No		557 (90.9)
Talked about sex uncomfortably (N=613)		
Yes		95 (15.5)
No		518 (84.5)
Touched uncomfortably in a sexual manner (N=613)		
Yes		60 (9.8)
No		553 (90.2)
Beaten in the last 3 months (N=613)		
Yes		44 (7.2)
No		569 (92.8)

Prevalence of common mental illness

Among the study participants, the overall prevalence of common mental illness was found to be 20.7% [95% CI: (17.5,

23.8)]. Of the 127 participants with common mental illness, 119 (93.7%) had moderate CMD and 8 (6.3%) of them had severe CMI. The distribution of SRQ-20 showed a mean (SD) score of 4.13 (3.78) and ranged from 0 to 17 (**Figure 1**).

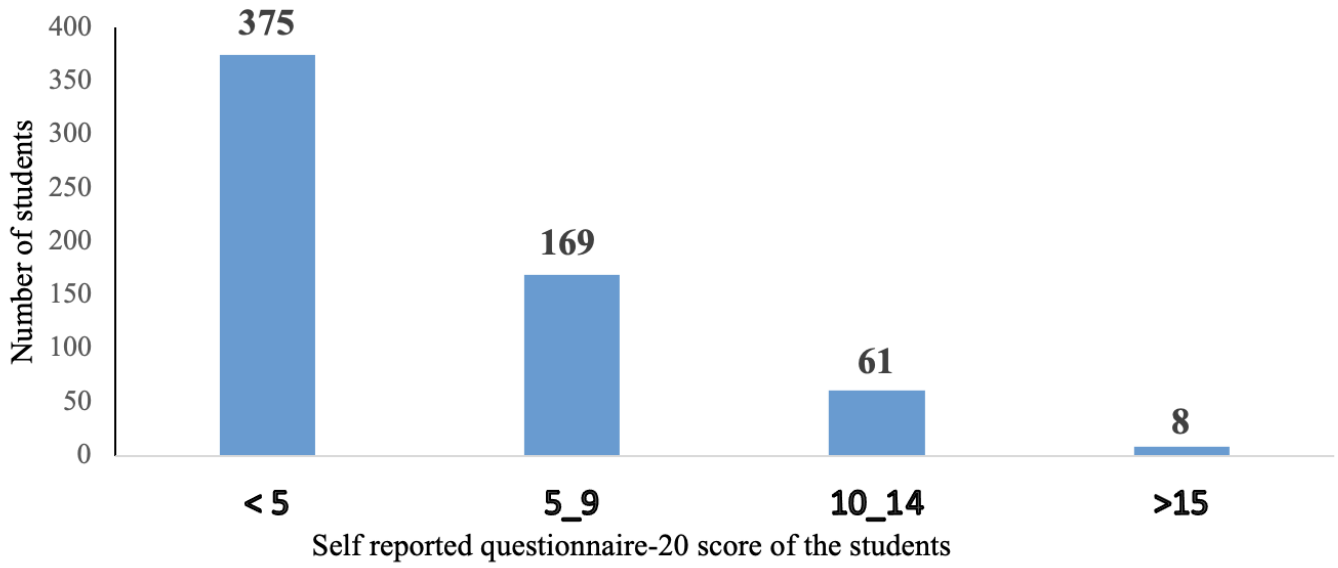

Figure 1. Self-Reported Questionnaire-20 score distribution among high school students in Hawassa City.

Factors associated with common mental illness

In the bivariable logistic regression analysis sex, grade level, current living arrangement, ever chewed khat, currently chew khat, ever drunk alcohol, currently drink alcohol, ever smoked ganja (cannabis), social support, any medical illness, touched uncomfortably in a sexual manner and beaten in the last 3 months are significantly associated with common mental illness.

After adjusting for potential confounding variables by running multivariable logistic regression age, sex, grade level, currently chew khat, social support and any medical illness were found to be independent predictors of common mental illness. Students with age 15-19 years had 49% [AOR=0.51, 95% CI: (0.27, 0.97)] decreased odds of common mental illness compared to students with age 20-24 years. The odds of having a common mental illness were 1.79 times higher among female students compared to their male counterparts [AOR=1.79, 95% CI: (1.10, 2.39)]. Students who are in grades 9 and 10 had 59% [AOR=0.41, 95% CI: (0.22, 0.76)] and 54% [AOR=0.46, 95% CI: (0.23, 0.82)] less likely to have common mental illness compared to those students in grade 12, respectively. The odds of common mental illness were 2.46 times higher among students who chew khat currently compared to those who don't chew [AOR=2.46, 95% CI: (1.07, 5.65)]. Students who had poor social support had 2.34 times higher odds of common mental illness compared to students with strong social support [AOR=2.34, 95% CI: (1.27, 4.32)]. Additionally, students who have medical illness had a 3.16 times increased risk of common mental illness than those students without any medical illness [AOR=3.16, 95% CI: (1.64, 6.09)]. (Table 5)

Table 5. Bivariable and multivariable analysis factors associated with common mental illness among Hawassa City high school students. (n=613).

Variables	Common mental illness			
	Yes (%)	No (%)	COR(95% CI)	AOR(95% CI)
Age				
15-19	106(19.7)	431(80.3)	0.64(0.37-1.11)	0.51(0.27-0.97)*
20-24	21(27.6)	55(72.4)	1	1
Sex				
Female	73(24.7)	222(75.3)	1.61(1.08-2.39)	1.79(1.10-2.93)*
Male	54(17.0)	264(83.0)	1	1
Grade level				
9th	33(17.4)	157(82.6)	0.50(0.29-0.83)	0.41(0.22-0.76)*
10th	26(16.0)	136(84.0)	0.45(0.26-0.79)	0.46(0.23-0.82)*
11th	28(22.2)	98(77.8)	0.68(0.39-1.19)	0.69(0.36-1.32)
12th	40(29.6)	95(70.4)	1	1
Father's educational status				
Illiterate	8(17.4)	38(82.6)	0.68(0.30-1.55)	0.61(0.25-1.53)
Read and write	23(16.2)	119(83.8)	0.63(0.37-1.08)	0.62(0.32-1.19)
Primary education	11(14.7)	64(85.3)	0.56(0.27-1.13)	0.49(0.22-1.09)
Secondary education	32(25.6)	93(74.4)	1.11(0.67-1.85)	0.97(0.54-1.74)
College and above	53(23.6)	172(76.4)	1	1
Family residence				
Urban	83(22.3)	289(77.7)	1.29(0.86-1.93)	1.40(0.81-2.40)
Rural	44(18.3)	197(81.7)	1	1
Ever chewed khat				
Yes	45(33.8)	88(66.2)	2.48(1.61-3.82)	1.51(0.76-3.01)
No	82(17.1)	398(82.9)	1	1
Currently chew khat				
Yes	30(43.5)	39(56.5)	3.55(2.10-5.99)	2.46(1.07-5.65)*
No	97(17.8)	447(82.2)	1	1
Ever drunk alcohol				
Yes	48(29.6)	114(70.4)	1.98(1.31-3.00)	1.30(0.66-2.57)
No	79(17.5)	372(82.5)	1	1
Currently drink alcohol				
Yes	33(34.0)	64(66.0)	2.32(1.41-3.72)	1.05(0.46-2.42)
No	94(18.2)	422(81.8)	1	1
Ever smoked ganja/cannabis				
Yes	7(50.0)	7(50.0)	3.99(1.37-11.60)	2.16(0.63-7.49)
No	120(20.0)	479(80.0)	1	1
Social support				

Poor	39(36.1)	69(63.9)	3.18(1.86-5.33)	2.34(1.27-4.32)*
Moderate	51(19.5)	211(80.5)	1.35(0.86-2.14)	1.08(0.63-1.84)
Strong	37(15.2)	206(84.8)	1	1
Medical illness				
Yes	30(46.2)	35(53.8)	3.99(2.34-6.80)	3.16(1.64-6.09)*
No	97(17.7)	451(82.3)	1	1
Touched uncomfortably in a sexual manner				
Yes	21(35.0)	39(65.0)	2.27(1.28-4.02)	1.13(0.52-2.46)
No	106(19.2)	447(80.8)	1	1
Beaten in the last 3 months				
Yes	15(34.1)	29(65.9)	2.11(1.09-4.07)	1.81(0.80-4.11)
No	112(19.7)	457(80.3)	1	1

Discussion

The current study assessed the prevalence of common mental illness and its associated factors among Hawassa city high school students, in Hawassa, southern Ethiopia.

In this study, the prevalence of common mental illness was 20.7%. Among the 127 participants with common mental illness, 119 (93.7%) had moderate and 8 (6.3%) of them had severe CMI. Ages, sex, grade level, currently chew khat, social support and medical illness were independent predictors of common mental illness.

This study showed that the prevalence of common mental illness was 20.7%. This finding was in line with the prevalence reported by a cross-sectional study carried out in six developing countries of Africa, Asia and Latin America found consistent results with a prevalence of 20-30%[18], India (20.9%) [19], Morocco (23.3%) [20] and Hargeisa in Somaliland (19.8%) [21]. Furthermore, the finding was also comparable with the prevalence reported by a systematic review and meta-analysis conducted in Ethiopia, with a 21.58% pooled prevalence. Additionally, studies also reported comparable prevalence to this study, 12-25% among children and adolescents in Ethiopia[22], and 21.6% among university students in Ethiopia[23].

However, the result found from the current study was higher than the prevalence report of studies conducted among secondary school adolescents in California (7.6%) [24], Iran (17.7%) [25], Egypt (16.8%) [26] and Santiago Chile (10%)[27]. Likewise, the finding of this study was also higher than reports of a systematic review conducted in sub-Saharan Africa 14.3%[28] and Harari regional state in eastern Ethiopia 14.9%[29]. The difference might be due to socio-economic, cultural, and school environment characteristics differences among study populations and differences in data collection tools (some of those studies use K10 CIDI or GHQ). The other possible reason for this difference might be the data collection method used in the current study was a self-administered tool, and this might overestimate the prevalence.

On the other hand, this finding was lower compared to school studies in China[30], Saudi Arabia [31] and Egypt [32] with a

prevalence of 40.1%, 54% and 41.7% respectively. Additionally, studies in different parts of Ethiopia also reported higher prevalence, 34.9% at Mekelle city high schools [33], 57.6% at Dessie high school[34] and 30.8% among adolescents living in Jimma Zone[35]. The possible explanation for the differences might be as a result only preparatory (higher graders) students (more stress and pressure to succeed) were included in the study (Egypt and Dessie). The other possible reasons for this difference might be cut-off points used to compute prevalence estimates of CMI (6/20 SRQ) and the duration used to estimate CMI (studies also used a 3-month duration of symptoms).

In this study, students in the age groups of 15-19 years had 49% less odds of having common mental illness compared to students in the age group 20-24. This finding was supported by studies among adolescents in India [19], Morocco [20] and Saudi Arabia[36]. Possible reasons for higher mental distress among older than younger adolescents include increasing demands, and physical and psychosocial changes. Additionally, romantic relationship stress, school performance, peer pressure (substance use) and life decisions drive added stress and relate to increased levels of mental distress.

The odds of having a common mental illness were 1.8 times higher among female students compared to their male counterparts. A similar finding was reported from the systematic review and meta-analysis conducted in Ethiopia[37]. Likewise, studies conducted at High school of Mekelle[33], Woldya[38], Morocco[20], Egypt[32], India[39] and Saudi Arabia[36].The emotional nature of their response to stressors, domestic violence, and hormonal changes during menstruation could be the possible causes for the higher prevalence of mental distress among female students[32][33].

In this particular study, students' grade level was an important factor in mental illness. Students who are in grades 9 and 10 are 59% and 54% less likely to have common mental illness compared to those students in grade 12 respectively. This finding is supported by studies conducted in Indian high schools[39] and high schools in the USA. Preparations for the national university entrance exams and parental pressure on their children to succeed might have an influence on the student's mental distress level. Moreover, Students also will be more concerned about peer approval and pressure that may lead to stressful life events which in turn may cause mental illness[2][39].

The study also found that common mental illness was significantly associated with khat chewing. Students who chew khat currently had 2.5 times higher odds of having common mental illness compared to those students who didn't chew. Studies conducted in Ethiopia [40][29][41][42], and Somaliland[21] also found a positive association between khat chewing and mental illness. This may be due to the fact that substance use leads to impaired relationships, sleep difficulty, increased absenteeism from class and poor academic performance may lead to mental distress in students. However, a causal relationship cannot be established using cross-sectional design, persons with mental distress might be using khat to alleviate their symptoms[42].

Level of social support was also found to be a determinant factor for common mental illness in students. Students who have poor social support had 2.34 times higher odds of common mental illness as compared to students with strong social support. This finding is supported by studies conducted in Ethiopia[38][34][40] and Hargeisa Somaliland[21]. This could be due to social and environmental factors that can promote health through stress barring the adverse physiological effects by providing a sense of belonging through relationships [43].

Additionally, students with chronic medical illness were 3.16 times more likely to have common mental illness as compared to healthy students. This finding is in line with a systematic review and meta-analysis conducted in Ethiopia[37]. Moreover, studies conducted in Araba Minch[44] and Saudi Arabia[36] also reported a significant association between medical illness and common mental illness. This may be due to stresses associated with continuous medications, feelings of insecurity due to not being cured and poor prognosis, as well as other barriers to accessing healthcare services.

Conclusion

This study showed that common mental illnesses are one of the major public health problems in the study area. The present study showed a statistically significant association between age, sex, grade level, currently chew khat, social support, chronic medical illness and common mental illness.

Abbreviations

CMD	Common Mental Disorder
CMI	Common Mental Illness
DDS	Depressive Disorder Syndrome
GAD	Generalized Anxiety Disorder
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
OCD	Obsessive-Compulsive Disorder
PTSD	Post Traumatic Stress Disorder
UK	United Kingdom
UN	United Nations
US	United States
WHO	World Health Organization
YLD	Years Lived with Disability

Ethical consideration

Ethical approval to start the study was obtained from the Institutional Review Board of Hawassa University College of Medicine and Health Science. In addition, a permission letter was secured from the Hawassa City Education Department for selected schools. Written informed consent was obtained from participants after a detailed explanation of the purpose and benefit of the study right before the individual data collection. The confidentiality issue was assured, and their response was kept private. The participants were informed that they had full right to stop or jump any question that was uncomfortable to them at any time.

Availability of data and materials

“The dataset will not be shared in order to protect the participants’ identities”.

Conflicts of Interest

We the authors state that we do not have any conflicts of interest.

Authors’ Contributions

BTD planned the study, led, and supervised the collected data and lead analysis and drafted the manuscript and AK, YS, BT and TG conceived the study, supervised and revised the MS, and altogether authors read and accepted the final draft of the manuscript.

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