PREVALENCE OF COMMON MENTAL ILLNESS AND ITS ASSOCIATED FACTORS AMONG HAWASSA CITY HIGH SCHOOL STUDENTS, HAWASSA, SIDAMA REGION, ETHIOPIA

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Abstract –
Introduction: Common mental illness is a group of mental illnesses that include depression, anxiety, and somatoform disorders. World Health Organization (WHO) reported that common mental illness contributed for 30% of non-fatal disease burden worldwide. School going adolescents and youths have a higher prevalence than people in general. However, there is 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 its associated factors among secondary school students in Hawassa City, Southern Ethiopia, 2020.
Methods: Institution based cross-sectional study conducted between November and December 2020. Multistage sampling technique employed to select 634 students. Data were collected using a pretested and structured self-administered questionnaire and Self-Reported Questionnaire (SRQ-20) was used to measure common mental illness. Bivariable and multivariable logistic regression analysis was used to identify factors associated with common mental illness, and adjusted odds ratio with 95% confidence interval was used to measure the magnitude of the 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 having 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 club (anti-drug) and improving student, parent and teachers communication were recommended.

Keywords - Common Mental Illness, Social Support, School Belongingness

I. INTRODUCTION

A disorder that is generally characterized by a change in mood, thought, or behavior is referred to as mental illness. Common mental illness (CMI) include depression, anxiety, and Somatoform disorders(1).As these disorders are widespread in the general population, they are regarded as "common" and they have a great effect on the victims' emotions or feelings. Common mental illnesses can have minor to severe symptoms, and they can last for months or years. CMI is diagnosable medical illnesses that making them unique from common human emotions like grief, worry, and fear(2). Mentally ill people exhibit varied degrees of somatic, depressive, or anxiety symptoms that have a negative impact on their social interactions, pleasure of life, ability to function at work, academic success, and even lead to suicide(3, 4).

Sadness, loss of interest or pleasure, feelings of guilt or low self-worth, interrupted sleep, altered appetite, fatigue, and difficulty concentrating are all signs of depressive disorders. 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. Based on the severity of the symptoms and their recurrence, it can be divided into two categories: major depressive disorder and dysthymia. Anxiety disorder is characterized by a generalized, subjective, non-specific feeling of unease, tension, fear, and sense of impending dread, as well as irrational avoidance of certain situations or items and anxiety attacks(5). It comprises obsessive-compulsive disorder, post-traumatic stress disorder, panic disorder, phobias, social anxiety disorder, and generalized anxiety disorder. Whereas, psychosomatic illness manifest as physical symptoms however the causes always arise from mental and emotional instead of physiologic disorders of the body. It also describes disorders that appear to have an emotional origin but for which a medical assessment reveals no physiological reason(6).Because many individuals suffer from these conditions concurrently, it is incorrect to simply add these three prevalence together to arrive at a total for mental disorder(2).

Fast-growing youngsters will always want to learn new things, try out new experiences, and start living an independent lifestyle; as a result, they need to adjust to physical change, change in responsibilities

in families, and peers. Compared to adults, adolescents show higher stress levels and fewer coping resources and often mental disorders which are diagnosed in on adults often began in adolescence. Stressful events like distinction and character consolidation could leave people feeling quite distressed(7). Most teenagers endure a lower quality of life in almost every aspect, including their relationship with their own bodies, their education, their mental health, and their families(8).

Many prospective studies have revealed that common mental illness become significantly 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 to mental illness usually started eight to ten years later than the onset of symptoms. Approximately half of students age 14 and above with mental illnesses are expected to drop out of high school. Adolescents still experience depression as the most prevalent mental illness, which is frequently accompanied with anxiety and stress. In 2011, over 29% of secondary and preparatory school students who participated in a national school-based survey reported experiencing sadness and hopelessness nearly daily for two weeks or longer in the previous year, which is a sign of potential clinical depression(10). The impacts of CMI could be short-term or long-term, and unless the symptoms are very severe or extremely worrying, they are frequently ignored by the families and interpreted as the result of the patient's frailty(11).Individuals with mental disorder are also affected by diseases like cancer, cardiovascular disease, HIV/AIDS. Homelessness and inappropriate incarceration are more common. Social stigma and discrimination are common and individuals with mental illness are denied their human rights, along with their financial, societal, and cultural freedoms, and their access to work, education, and the greatest possible level of health is restricted. In addition, they will experience neglect, damaging and demeaning behaviors, physical and sexual abuse, and other mistreatment in medical facilities(12). From the perspective of magnitude of common mental illness; studying the distribution and the factors that have contributed among adolescent age group is of a paramount importance for introducing the preventive and control strategies at the right time(13).

II. METHODS AND MATERIALS

2.1. Study setting

The investigation was carried out in the Hawassa city administration, Sidama region's capital city which is 275km far from Addis Ababa, Ethiopia. The city is dividedin to eight administrative sub-cities with 32 kebeles.Currently, the city has a total population of 367,908 of which 51% are females. Based on the national census of 2007, the proportion of adolescent (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 grade 9 - 12 in 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 in collaboration with the health department of the city 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

All high school students in Hawassa city were the source population.

Study population

Randomly selected students from the selected high schools in Hawassa city

Inclusion and Exclusion Criteria

Inclusion Criteria

Students who were enrolled at high schools in Hawassa city in 2020/2021.

Exclusion Criteria

Students who were absent in their class rooms during follow-up data collection time were excluded.

Sample size determination

Sample size for objective one

The sample size was calculated using the single population proportion formula with the following assumptions:

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

$$n = (Z1-\alpha/2)^2\, p\,(1-p)/d2$$

$$= \frac{(1.96)^2*0.5*0.5}{(0.05)^2} = 384 \text{ students}$$

Furthermore, to account for the clustering effect in this study, a design effect of 1.5 was included in the calculations to attain at a sample size of 576. After adding 10% non-response rate the final sample size was 634.

Sampling technique and sampling procedure

A multi-stage sampling technique was used, which involves four stages. In the first stage, from the total 29 schools, 5 schools was randomly using the lottery method. Based on the number of students enrolled in each school, the total sample size for the study was proportionally allocated among each of the schools. The second stage, grades in each selected schools was stratified by their levels as 9, 10, 11 and 12. At the third stage, by using a lottery method three sections selected from each grade.Finally, participants were selected using simple random sampling with a roster serving as the sampling frame. To make it easier to reach each study participants, class representatives from each section were contacted.

Data Collection tools and procedure

Data collection tools

Data were collected using a structured, pretested, and self-administered questionnaire with five parts. The questionnaire started by enquiring the socio-demographic characteristics of students. The second part of the questionnaire was the Self-Reporting Questionnaire-20 (SRQ-20), which was used to assess the prevalence of common mental illnesses among participants. It is a standard 20-item questionnaire that was first developed by WHO for the purpose of screening common mental illnesses. The SRQ has recently been validated in Eritrea and it has been used for studies in developing countries. In this study, participants were categorized as having common mental illness if they had seven or more symptoms of the 20 items self-reporting questionnaires (SRQ-20) in the previous four weeks. The cutoff value was chosen in accordance with the SRQ-20 validation research findings that showed the greatest sensitivity and specificity(14, 15).The behavioral factors section of the questionnaire, which included covered past substance use and abuse, was the third section. The social support and school belongingness factors were covered in the fourth section of the questionnaire. The multidimensional scale of perceived social support will be used to assess social support, and the simple school belonging scale will be used to evaluate a student's sense of school belongingness(16, 17).Last part of the questionnaire assessed about past illness and abuse related experience. The Questionnaires was first developed in English then was 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 healthcare providers who were working in the study area, one supervisor with previous experience on data collection and supervision was involved and checked the data quality and supervised the overall procedure of data collection on daily basis. The principal investigator also followed the overall procedure of data collection closely. Those who were not selected left the class until 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.

Data management and analysis

Data was coded and data entry undertaken by EpiData version 3.1. Then, the data were exported to SPSS version 26 for processing and analysis. Descriptive analysis was performed for the dependent and independent variables and frequency and percentage measures was presented by using tables and graphs. Bivariable and multivariable logistic regression analysis used to assess the association between dependent and independent variables. Variables having a $p < 0.25$ on bivariable logistic regression were selected for multivariable logistic regression model. During multivariable logistic regression analysis, backward model building method was used while building the model. Fitness of the logistic regression model (Hosmer & Lemeshow, $p=0.671$) and multicollinearity (VIF) was checked, variables having a p-value <0.05 were considered statistically significant and Adjusted Odds Ratio (AOR) with 95% Confidence Interval (CI) were presented to show the magnitude of association.

Quality assurance techniques

By properly designing, pre-testing, categorizing, and coding the questionnaire, the quality of the data was ensured. Both the data collectors and supervisors was oriented for one day on techniques of approaching, introducing themselves and on clarification of the importance of responding to the questions of the participants before the start of data collection. The supervisor got orientation on how to verify the consistency and completeness of questionnaires. One week before the actual data collection period, the pretest was conducted in 5% of the sample size at Shashemene high school. The questionnaire's simplicity, understandability, consistency, and completeness were examined, and significant adjustments were made based on the results of the pretest. Moreover, the logical flow of the ideas was maintained.

III. RESULTS AND DISCUSSION

Socio-demographic characteristics

Six hundred thirteen students participated, with a response rate of 96.7%. The mean (SD) age of the participants was 17.8 (1.76), ranging between 15 and 24 years. More than half (51.9%) of the students were male, and 190 (31.0%) were in grade nine. Majority 398 (64.9%) of the students were Sidama ethnic group, 565 (92.2%) were single and 343 (56.0%) were protestant religion followers. In terms of the

parents' educational backgrounds, 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 family were urban dwellers (**Table 1**).

Substance use related factors

Above one fifth (21.7%) of the study's total participants reported chewing khat at least once in their lives, and 69 (11.3%) said they were doing so currently. From 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 one 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 third (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 smoking shisha. Furthermore, about 14(2.3%) had ever used ganja/cannabis and 5(0.5%) were current users of ganja/cannabis (**Table 2**).

Social support and school belongingness

Two hundred sixty two (42.7%) of the participants reported moderate social support, while 243 (39.6%) reported strong social support. The mean (SD) sense of school belongingness score of the study participants were 25.3 (7.71) and with a range 10 to 40. More than half 325 (53.0%) of the participants had low sense of school belongingness(**Table 3**).

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, majority 36 (55.4%) had 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 family suffered. Apart from illness, 95(15.5%) were talked uncomfortably about sex and 60(9.8%) were touched uncomfortably in sexual manner. Forty four (7.2%) of the participants reported being beaten in the last three months(**Table 4**).

Prevalence of common mental illness

The 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 range of the SRQ-20 was 0 to 17, with a mean (SD) score of 4.13 (3.78) (**Figure 1**).

Factors associated with common mental illness

In the bivariable 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 sexual manner and beaten in previous three months were found to have significant association with common mental illness.

On multivariable analysis age, sex, grade level, currently chew khat, social support and any medical illness were independent predictors of common mental illness. Students with ages 15–19 were 49% less likely to develop common mental illness compared to students with ages 20–24 [AOR = 0.51; 95% CI: (0.27, 0.97)]. 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 in grades 9 and 10 were 59% and 54% less likely to have common mental illnesses compared to those in grade 12, [AOR=0.41, 95% CI: (0.22, 0.76)] and [AOR=0.46, 95% CI: (0.23, 0.82)]respectively. The odds of common mental illness were 2.46 times higher among students who chew khat currently compared to those who do not chew [AOR=2.46, 95% CI: (1.07, 5.65)]. Students with 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, the odds of common mental illness was 3.16 times greater among those who had a medical illness as compared to those who had no medical illness[AOR=3.16, 95% CI: (1.64, 6.09)]. (Table 5)

IV. DISCUSSION

The prevalence of common mental illness among the students was 20.7%. Among the 127 participants with common mental illness, 119 (93.7%) had moderate and 8 (6.3%) had severe CMI. Ages, sex, grade level, currently chewing khat, social support, and having a medical illness were independent predictors of common mental illness.

This study found that the prevalence of common mental illness was 20.7%. The finding was comparable with the prevalence reported by a cross sectional study conducted in six developing countries of Africa, Asia and Latin America found consistent result with 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 pooled prevalence (21.58%) reported by a study conducted in Ethiopia. Additionally, studies also reported comparable prevalence to this study, 12-25% among children and adolescents in Ethiopia(22), 21.6% among university students in Ethiopia(23).

However, the prevalence of the current study was higher than the studies done among secondary school adolescent in California (7.6%) (24), Iran (17.7%) (25), Egypt (16.8%) (26) and Santiago Chile (10%)(27). Likewise, the finding was also higher than the pooled prevalence in sub-Saharan Africa 14.3%(28) and Harari regional state in eastern Ethiopia 14.9%(29). The discrepancy may result from variations in the study population's socioeconomic status, cultural background, and school environment, as well as from the data collection tool used (some of those studies use K10, CIDI, or GHQ). This study used a self-administered tool for data collecting may have overestimated the prevalence as another cause for the discrepancy.

On the other hand, the finding was lower compared to the prevalence from school based studies in China (40.1%) (30), Saudi Arabia (54%)(31) and Egypt (41.7%)(32). 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) included in the study (Egypt and Dessie). The other possible reasons for this difference might be cut-off points used to ascertain CMI (6/20 SRQ) and the duration used to estimate CMI (studies also used 3 month duration of symptoms).

In this study, students with ages 15–19 were 49% less likely to develop common mental illness compared to students with ages 20–24. This finding was consistent with studies among adolescents in India (19), Morocco (20) and Saudi Arabia(36). Growing pressures, bodily changes, and psychosocial changes are potential causes of older students experiencing more common mental illness than younger students. Additionally, romantic relationships stress, school performance, peer pressure (substance use) and life decisions drive added stress and relate to increased levels of mental distress.

The odds of developing common mental illness were 1.8 times higher among female students than male students. The finding was parallel with a report from a review of studies 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 fact that female students experience mental distress at higher rates than male students may be due to the emotional character of their reactions to stressors, domestic abuse, and hormonal changes during periods(32, 33).
In this particular study, students' grade level identified assignificant factor of mental illness. Students in grades 9 and 10 were 59% and 54% less likely to have common mental illnesses compared to those in grade 12 respectively. The finding was supported by studies conducted in Indian high schools(39) and high schools in USA(24). 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 causes mental illness(2, 39).

The study also revealed that common mental illness have significant association with khat chewing. The odds of common mental illness were 2.5 times higher among students who chew khat currently compared to those who do not chew. Studies conducted in Ethiopia (29, 40-42), and Somaliland(21) also found positive association between khat chewing and mental illness. This may be so because substance misuse damages relationships, interferes with sleep, prevents students from attending class, and low academic performance increasing the likelihood that they will suffer from mental illness. However, causality cannot be confirmed using a cross-sectional study, suggesting that people with mental illness may be taking khat to relieve the symptoms (41).

Level of social support also determine the development of common mental illness among students. Students with poor social support had 2.3 times higher odds of common mental illness compared to students with strong social support. This finding is supported by studies conducted in Ethiopia(34, 38, 42) and Hargeisa Somaliland(21). This might be caused by social and environmental elements that can improve health during stress by preventing negative psychological effects and fostering a sense of belonging through connections(43).

Additionally, the odds of common mental illness was 3.2 times greater among those who had a medical illness as compared to those who had no medical illness. This finding was in line with a review of studies conducted in Ethiopia(37). Moreover, studies conducted in Araba Minch(44) and Saudi Arabia(36) also reported significant association between medical illness and common mental illness. This might be brought on by the stresses of taking continuous drugs, a sense of insecurity brought on by the fact that one is not cured and a poor prognosis, and barriers related to healthcare services.

LIMITATIONS

The study's cross-sectional design does not establish a clear temporal relationship. Furthermore, due of the sensitive nature of some responses, it is possible that respondents intentionally underreported the magnitude and determinant factors, which could introduce to social desirability bias.

V. CONCLUSION

The study showed that common mental illness is high and it is a major public health problem in the study area. Age, sex, grade level, current khat use, social support, and having chronic medical illness were identified as factors significantly associated common mental illness. Therefore, it is recommended to put programmes in place that encourage students to participate in extracurricular activities in order to improve social support, strengthen anti-substance use clubs at the school, and involve parents in school activities, with an emphasis on females, higher graders, and those with medical conditions.

Ethical consideration

Ethical approval for the study obtained from Institutional Review Board of Hawassa University College of Medicine and Health Science. Also, a letter of clearance from the Hawassa City Education Department was obtained for the selected schools. Participants were given a thorough description of the study's objective and benefits prior to the collection of their personal data, and then they provided written informed consent. The confidentiality issue was assured, and they were informed that they had the full right to stop or skip any inquiry that was unpleasant 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

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

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