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BAHIR DAR UNIVERSITTY COLLEGE OF MEDICINE AND HEALTH SCIENCE DEPARTMENT OF PSYCHIATRY

PREVALENCE OF HAZARDOUS ALCOHOL USE AND ITS ASSOCIATED FACTORS AMONG TEACHERS WORKING IN PUBLIC HIGH SCHOOLS AT BAHIR DAR CITY, NORTHWEST ETHIOPIA 2022

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| FULL TITLE OF THE RESEARCH THESIS | PREVALENCE HAZARDOUS ALCOHOL USE AND ITS ASSOCIATED FACTORS AMONG TEACHERS WORKING IN PUBLIC HIGH SCHOOLS AT BAHIR DAR CITY, NORTHWEST ETHIOPIA 2022 |
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#### Abstract

Background: Hazardous alcohol use is a significant public health concern and an important target for prevention efforts within both teachers and other populations. For such efforts to be maximally effective, comprehensive information regarding the prevalence and associated factors of hazardous alcohol use is necessary to initiate early interventions. However, there is a scarcity of research in Ethiopia, particularly among public high school teachers in Bahir Dar.

Objective: To assess the prevalence of hazardous alcohol use and its associated factors among teachers working in public high schools at Bahir Dar City, Northwest Ethiopia 2022

Methods: An institutional-based cross-sectional study was conducted on public high school teachers in Bahir Dar city. 423 teachers were involved in study selected with simple random sampling technique from each high school by alphabetical order. Dependent variables were assessed using the Fast Alcohol Screening Test (FAST). Data were collected by Epicollect5 using a smart phone and exported to the SPSS statistical package version 25.0 for analysis. Bivariate and multivariable logistic regression analyses were conducted to identify associated factors with hazardous alcohol use. Adjusted odds ratios with $95 \%$ confidence intervals were used. A P-value $<0.05$ considered significant.

Results: a total of 407 teachers were involved with response rate of $96 \%$.The prevalence of hazardous alcohol use was $65(16 \%)$ ( $95 \%$ CI: 12.40-19.54), $57(20.9 \%$ ) were males and 8(6.1\%) were females, and the prevalence of alcohol dependence was $1.7 \%$. Male teachers (Adjusted OR $4.0495 \% \mathrm{CI}(1.66,9.81) \mathrm{P}<0.05$ ), teachers 30 to 34 years old (Adjusted OR $3.4195 \% \mathrm{CI} 1.18$, 9.91, $\mathrm{P}<0.05$ ), first degree holders (Adjusted OR 3.66 95\%CI 1.53, $8.76 \mathrm{p}<0.05$ ), psychological distress (K10 22 ) (Adjusted OR $4.9195 \%$ CI $2.44,9.88$, P0.05) and teachers with poor social support (Adjusted OR $3.9595 \%$ CI $1.49,10.45, \mathrm{P}<0.05$ ) were significantly associated with hazardous alcohol use.

Conclusion: Evident level of hazardous alcohol use was detected in this study. There is an urgent need to address the seriousness of hazardous alcohol use among high school teachers considering highlighted associated factors and the important role of teachers they play in schoolbased hazardous alcohol use problem prevention strategies.


Keyword: Hazardous alcohol use, high school teachers, high school, Ethiopia

## ABBREVIATIONS

| AUDIT | Alcohol Use Disorder Identification Test |
| :--- | :--- |
| FAST | Fast Alcohol Screening Test |
| HAU | Hazardous Alcohol Use |
| SPSS | Statistical Package for the Social Sciences |
| WHO | World Health Organization |

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## 1. INTRODUCTION

### 1.1. BACKGROUND

It is a high level or repeated alcohol use that puts the user or others at risk of undesirable consequences for their health, social, or economic status(3).Alcohol is the most commonly used substance in the general population as well as in the workforce(1). Excessive alcohol use is a significant public health problem and is responsible for about $6 \%$ of mortality and $5 \%$ of disability-adjusted life year's (DALYs) lost worldwide(2). Many factors contribute to the development of alcohol-related problems. Ignorance of drinking limits and of the risks associated with excessive alcohol use are major factors. Social and environmental influences, such as customs and attitudes that favor heavy drinking, also play important roles(3).

In the United States, among adults surveyed in the 1992 National Longitudinal Alcohol Epidemiologic Study, $14 \%$ of men and $4 \%$ of women reported Hazardous alcohol use(4).
high schools are an important setting for implementation of school based alcohol and drug prevention policies and teachers are valuable assets in the delivery of these initiatives(5). High school teachers engage in alcohol use due to social/peer pressure, environmental influences, personal problems, social occasions and curiosity among other reasons. However, peer pressure and environmental factors are the leading causes of alcohol intake(6).

Teachers use alcohol to achieve joyful or desired outcomes, as a recreational activity and a relaxing experience in social settings and among friends while others use it to alleviate physical or psychological stress and boost their performance(7).
Traditional local preparation and use of cereal- and fruit-based traditional fermented alcoholic beverages, such as "arake," "tela," and "teji," is very common. In Ethiopia, there is no local alcohol content policy for each alcoholic beverage, but there is a study that shows the local alcoholic content of tej is $11 \%$ with a range of 8.94 to $13.16 \%$, the Areki average value of $37 \%$ with a range of 33.95 to $39.9 \%(8)$ and tella is $4 \%$ with a range of $2-6 \%(9)$, like that beer at 2 $5 \%(3)$. These beverages are consumed at home or in small traditional bars, 'tella bet' and 'araqe bet' meaning tella house and araqe house. Most people consume these alcoholic beverages during traditional ceremonies, holidays or while taking respite from farm activities, but it is also common to consume these beverages during market days(9).

Excessive alcohol use might lead to job loss or failure to complete tasks. There may also be frequent conflicts with other school staff members, poor time management, a lack of concentration, and a lack of opportunities for advancement and promotion at work(10).

Therefore, assessing the prevalence of hazardous alcohol use and its associated factors among public high school teachers may have huge benefit in preventing its further social and economic consequences.

### 1.2. STATEMENT OF PROBLEM

Globally alcohol use causes 2.8 million premature deaths per year. Seventy four percents of those who die are younger than 70 years(11). In 2019 Alcohol Use in the United States, $25.8 \%$ of people age 18 and older ( $29.7 \%$ of men in this age group and $22.2 \%$ of women in this age group) reported that they engaged in hazardous alcohol use ( 60 g or more of pure alcohol on a single occasion) in the past month, and $6.3 \%$ ( $8.3 \%$ of men in this age group and $4.5 \%$ of women in this age group) reported that they engaged in hazardous drinking( 20 g (women) or 40 g (men) of pure alcohol per day) in the past month(12). Hazardous drinkers (men and women consuming more than 40 or 20 g of pure alcohol per day, respectively) Across six Organization for Economic Cooperation and Development (OECD) countries, hazardous alcohol use make up only $4 \%$ to $14 \%$ of the population(13).

In Ethiopia the prevalence of hazardous alcohol use was considerably higher in the recent (20142017) $17.21 \%$ than the past (before 2014) $3.17 \%(14)$. The pooled prevalence of hazardous alcohol use( $8.94 \%$ ) (15). prevalence of hazardous alcohol use was considerably higher in men ( $11.58 \%$ ) than women $(1.21 \%)$. Additionally, males were 10.38 times more likely to be hazardous drinkers as compared with women (14). Similarly, there is also a significant recent increment in the magnitude of risky alcohol drinking patterns in Ethiopia, particularly among men. Evidence from the very recent meta-analysis in the country showed that $9.0 \%$ of men aged 18-59 years engaged in hazardous or risky alcohol drinking pattern and behavior(16)

Level of education attained plays an important role of protecting individuals from engaging in socially undesired behavior such as hazardous alcohol use(17). According to numerous prevalence studies, excessive alcohol use is extremely common among teachers(10). Teachers are at the front line of child and adolescent Hazardous alcohol use prevention, and as family structure and function continue to change, schools are taking on more responsibility for socialization. Dispute this, Teachers who are suffering from hazardous alcohol use will be less able to perform these tasks(18). If teachers have personal issues with hazardous alcohol use, the no-use message that is being conveyed in the classroom may be called into question(18).

According to numerous prevalence studies, excessive alcohol use is extremely common among teachers. In the United Kingdom, a survey by the National Heads Association (2007) reported that up to $25 \%$ of teachers were engaging in excessive alcohol use(19).

Major factors related to hazardous alcohol use among teachers and adult General population is social or peer pressure, environmental influences and individual factors such as psychological distress, younger age, and male gender have been identified in previous studies as being associated with increased risk for hazardous drinking(20). Relationship problems are associated with heavy drinking, including intimate partner violence, marital dissatisfaction, and risk for relationship dissolution. Other family level variables such having children, family income, and being married are associated with decreased risk for hazardous drinking(21)

Teachers drink alcohol to be happy, to manage burnout and stress, to stimulate and sharpen thinking, for confidence and to avoid shyness when speaking, and for socialization purposes or influenced by colleagues(10). Educators drink alcohol to: relieve pain, reduce stress or lift their mood (with any number of mind numbing or euphoric drugs like alcohol or ecstasy), increase productivity, (22) However, heavy drinking or hazardous use may leads to harmful effects and dependency of alcohol by teachers which impacts that extend beyond the classroom, affecting the entire educational system and even other sectors(23). Suggests that teacher may impact students by modeling drinking behaviors(24).

Hazardous alcohol use and alcohol abuse have serious societal consequences, including lost productivity, alcohol-related motor vehicle crashes, increased suicide risk, and increased risk for accidents and injury(21). Hazardous use of alcohol can have a number of negative consequences for teachers' physical and mental health, as well as their classroom performance. Excessive alcohol might result in a failure to fulfill tasks such as marking exam scripts or attending staff meetings. There may also be frequent clashes with other members of the school's staff. Furthermore, it may result in tardiness in class, a lack of concentration, absenteeism and a lack of opportunity for progress and promotion at work(10).

In Ethiopia no drinking limit except drinking alcohol less than 21 ages is legally prohibited. Culturally alcohol is consumed in social gatherings and among friends as a leisure time activity and relaxation experience. besides this, alcohol production like beers is increasing with a huge irresponsible advertisement(25).

In addition to its impact on population health, economic and societal costs, Hazardous alcohol use may lead to harmful alcohol use and dependence, which increase health care costs, decrease labour force output, depress gross domestic product (GDP), and affect the formation of human capital through its effects on educational outcomes in children, adolescents and adults(26).
In populations with a high prevalence of hazardous alcohol use (more than 5\%, such as Europe and North America), the most effective and cost-effective intervention was taxation. In populations with a lower prevalence of hazardous alcohol use, however, taxation is estimated to be less cost effective overall than other, more targeted strategies, such as brief physician advice, roadside breath testing and advertising bans(27).

Most of the research has concentrated on adolescents and university students. On the contrary, there is a lack of information on the problem among adults. Furthermore, high school teachers are a part of the population that can play a significant role in preventing the initiation of hazardous alcohol use among public high school students, which is also the backbone of a country's development. As a result, assessing the prevalence of hazardous alcohol use and associated factors is critical to reducing its negative effects.

### 1.3. SIGNIFICANCE OF THE STUDY

This study allows looking into perspectives of factors which lead to Hazardous alcohol use -like adverse experience, social support and other substance use, socio-demographic factors, and clinical factors. The findings from this study will provide insights into the prevalence of hazardous alcohol use and associated factors, the findings may have implications for public high school teachers, schools, and policymakers and results expected to help build on existing knowledge and forward relevant recommendations.

It will guide different sectors such as health sectors and education sectors in developing a national action plan for the promotion of hazardous Alcohol use for teachers. It also provides an opportunity to raise awareness about the effects of hazardous alcohol use and to identify early preventative and intervention measures.
Relevant stakeholders towards making an evidence-based program in designing, targeting, and implementation could use the findings for further action among teachers. It will help the concerned body understand the situation. It will also serve as a baseline for future researchers, educators, clinicians, families, clients, NGO's, and other concerned bodies for further prevention action and implementation of programs that try to solve hazardous alcohol use by high school teachers.

## 2. LITERATURE REVIEW

### 2.1. PREVALENCE OF HAZARDOUS ALCOHOL USE

Studies have reported high prevalence rates of alcohol use among teachers. According to a study conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) in the United States on September 3rd, 2021, 4.7\% of teachers, school administrators, professors, and others in the field of education reported hazardous use of alcohol in the month prior to the survey(28).

Study was conducted In Japanese 2013, to determine gender differences in the relationships between perceived individual-level occupational stress and hazardous alcohol use among public school teachers. A cross-sectional study in all public schools a total of 723 male and 476 female teachers remained after excluding non-drinkers, including schoolteachers, principals, and viceprincipals, was conducted by mailed self-administered anonymous questionnaires. In study Hazardous alcohol use was defined as ethanol use of greater than or equal to 280 g for male teachers and greater than or equal to 210 g for female teachers in one week. According to the survey, the prevalence of hazardous alcohol use was $14.9 \%$ of this $16.6 \%$ of male teachers and $12.4 \%$ of female teachers (29).

In Southwestern Nigeria, a cross-sectional survey was conducted to investigate the prevalence and pattern of hazardous alcohol use among secondary school teachers. A total of 288 secondary school teachers were chosen in 2017 using a multistage sampling approach. The prevalence of past-year alcohol use was 51.4 percent, according to the 10 -item Alcohol Use Disorders Identification Test (AUDIT). Using a cutoff score of 5 on the AUDIT questionnaire, the prevalence of hazardous alcohol use was $30.9 \%$ (5).

Study in 2021 Uganda to establishes the relationship between socio-demographic characteristics and alcohol use among secondary school teachers in Greater Bushenyi of Uganda. The study employed a cross-sectional design with a quantitative method of data collection and analysis. Multistage sampling was employed, first stratified proportionate and then simple random sampling. The study sample consisted of 266 participants from 11 secondary schools. Data were collected using a self-administered questionnaire. The rate of alcohol use among teachers was $44.7 \%$ (30).

Study to assess the influence of education level on alcohol abuse among public school teachers in Kenya. A mixed method approach employing self-administered structured questionnaires and in-depth interviews was used to undertake the study. The target population consisted of teachers employed by the Teachers Service Commission (TSC) in public primary and secondary schools. A sampling frame was obtained from the TSC providing a list of all teachers in the county and the schools they teach in. The study utilized the stratified sampling methods to select participants, where strata used was the sub-county and type of school (primary/secondary) after which a random sample was used to identify the teachers who participated in the research. A sample of 385 teachers was selected from a population of 6,264 from Nyeri County. The results on the prevalence of alcohol use revealed that $59 \%$ of teachers use alcohol while $32.7 \%$ fall under the category of hazardous use(17).

Study from 2005 to 2008 in South Africans to assessing the extent of alcohol use and problem drinking on population Using A multistage random population sample of 15828 persons aged 15 or older ( $56.3 \%$ women) was included in the survey. Alcohol use was assessed using the Alcohol Use Identification Test (AUDIT). Current alcohol use was reported by $41.5 \%$ of the men and $17.1 \%$ of women. White men (69.8\%) were most likely and Indian/Asian women (15.2\%) least likely to be current drinkers. Urban residents ( $33.4 \%$ ) were more likely than rural dwellers (18.3\%) to report current drinking. Prevalence of hazardous alcohol use was $9 \%$ : $17 \%$ among men and $2.9 \%$ among women(31).

In a study conducted in Ghana in 2020 to determine the alcohol use patterns of teachers in the Builsa north district and the effects on work performance using a cross-sectional descriptive in 284 by interviewed Primary, Junior, and Senior high school (JHS) teachers, About 23.2\% hazardous alcohol use(32).

Study on prevalence and associated factors for hazardous drinking in rural Sodo district, southern Ethiopia. A cross-sectional community survey was conducted involving 1500 adults, age 18 and above, recruited using multi-stage random sampling. Data on alcohol use was collected using the Fast Alcohol Screening Test (FAST). Standardized instruments were used to measure potential associated factors, including a validated adaptation of the Kessler 10 (psychological distress), the List of Threatening Experiences (number of adverse life events). Exploratory multivariable logistic regression was conducted to examine factors associated with hazardous alcohol use. The
overall prevalence of hazardous alcohol use was found to be $21 \% ; 31 \%$ in males and $10.4 \%$ in females(33).

In Ethiopia there is limited published data on the prevalence of hazardous alcohol use and its associated factors among teachers. Therefore, this study aims to assess the prevalence hazardous alcohol use and its associated factors among public high school teachers. So that it will help for management. There by it will help to assist the therapeutic effectiveness and prevention of complications hazardous alcohol use.

### 2.2. Factors associated with hazardous Alcohol Use

In 2017 to determine the prevalence and pattern of hazardous alcohol use among secondary school teachers in Southwestern Nigeria found Hazardous alcohol use was associated with younger age ( $\chi 2=4.29, \mathrm{p}=0.038$ ), male gender $(\chi 2=6.39, \mathrm{p}=0.011$ ), lower level of education $(\chi 2=$ 9.81, $\mathrm{p}=0.007$ ), higher number of children ( $\chi 2=6.21, \mathrm{p}=0.045$ ). Male teachers were 6 times more likely to engage in hazardous alcohol use (OR $6.39 ; 95 \% \mathrm{CI}=0.31-0.87$ ). $16.7 \%$ of teachers had psychological distress (GHQ 12 score of $\geq 3$ ). Alcohol related injury was significantly associated with psychological distress ( $\chi 2=86.80, \mathrm{p}=0.001$ ). Respondents with a history of alcohol related injury were 30 times more likely to have psychological distress ( $\mathrm{OR}=30.62$, $\mathrm{CI}=11.95-78.49$ )(5).

Study in 2021 Uganda to establishes the relationship between socio-demographic characteristics and alcohol use among secondary school teachers in Greater Bushenyi of Uganda. Using logistic regressions the association between participants' socio-demographic correlates and alcohol use, age and teaching experience were statistically associated with alcohol use at bivariate level. Specifically, male teachers were more likely to consume alcohol as compared to their female counterparts (UOR: $1.1,95 \% \mathrm{CI}: 1.15-1.81, \mathrm{p}=.002$ ). Teachers in the age range of 31-35 (UOR: $5.5,95 \%$ CI: $1.11-16.69, \mathrm{p}=.034$ ) or 36 years and above (UOR: $5.1,95 \%$ CI: $1.11-14.19, \mathrm{p}$ $=.036$ ) reported higher alcohol use, as compared to their counterparts aged < 26 years. As regards teaching experience, teachers with 6 to 10 years (UOR: $1.0,95 \%$ CI: $0.99-4.14, \mathrm{p}=$ 0.054 ) or 11-15 years (UOR: $1.1,95 \% \mathrm{CI}: 1.46-6.64, \mathrm{p}=.003$ ) in the teaching service reported higher alcohol use, as compared to their counterparts aged 1-5 years. Also, teachers who belonged to the Roman Catholic religious denomination were three times more likely to consume alcohol than their Muslim counterparts (AOR: 3.1, $95 \%$ CI:0.98-9.57, $\mathrm{p}=0.054$ )(30).

In 2018 study to assess the influence the level of education on alcohol abuse among public school teachers in Nyeri County, Kenya. Data was coded and analysed using descriptive and inferential statistics. Associations determined using Fisher's exact test. Results: Ninety-nine teachers who consume alcohol were interviewed, with mean age of $33.5 \pm 6.1$ years. Majority were males ( $3: 1$ ratio, $\mathrm{p}<0.0005$ ). The great majority ( $83.8 \%, \mathrm{P}<0.0001$ ) were trained; with ( $66.7 \%$ ) being University graduates and The level of education was noted to have a significant effect on alcohol abuse with the number of teachers with lower educational qualifications being associated with alcohol abuse (17).
3. Conceptual framework


Figure 1 Conceptual Framework adopted from different literature (5, 10, 17, 28-30, 32, 34, 35).

## 4. OBJECTIVES

### 4.1. GENERAL OBJECTIVE

To assess the prevalence of hazardous alcohol use and its associated factors among teachers working in public high schools at Bahir Dar City, Northwest Ethiopia 2022

### 4.2. SPECIFIC OBJECTIVES

To determine the prevalence of hazardous alcohol use among teachers working in public high schools at Bahir Dar City, Northwest Ethiopia 2022

To identify factors associated with hazardous alcohol use among teachers working in public high schools at Bahir Dar City, Northwest Ethiopia 2022

## 5. METHODS

### 5.1. STUDY SETTING

The study was conducted in Bahir Dar city administration, which is the capital city of Amhara National Regional State. The city is located in Northwest Ethiopia, around 565 km from Addis Ababa, the capital city of Ethiopia. According to the information gathered from the city mayor's office, the city administration is currently divided into six subcities, three satellite towns, and 26 urban and 14 rural "kebeles" for administrative purposes (a kebele is the smallest administrative unit in Ethiopia). The three satellite towns/suburban areas are Zegie, Meshenti, and Tis Abay. The education system is divided into primary (1-8th grade) and high school (9-12th grade). According to information from Dahir Dar city administration education office, there were 2048 public (government) teachers in the city, teaching grades 1 to 12 , of which 847 are high school (9-12th grade) teachers from 11 high schools (36).

### 5.2. STUDY DESIGN AND PERIOD

Institutional based cross-sectional study was applied, from June 18/2022 - July 16/2022.

### 5.3. SOURCE POPULATION

The source populations were all Public high school teachers at Bahir Dar city administration.

### 5.4. STUDY POPULATION

All teachers who were randomly selected from each public high school were the study population.

### 5.5. INCLUSION AND EXCLUSION CRITERIA

### 5.5.1. INCLUSION CRITERIA

All public high school teachers in Bahir Dar city who were available at the workplace at the time of data collection were included.

### 5.5.2. EXCLUSION CRITERIA

Teachers who were in administrative positions and not directly involved in teaching activity had been excluded

### 5.6. Sample size determination and sampling procedure

### 5.6.1.1. SAMPLE SIZE DETERMINATION

The sample size was determine using a single population proportion formula with the assumption of $95 \%$ confidence level, $5 \%$ marginal error, $10 \%$ non-response rate and Since, No studies have done in Ethiopia, specifically hazardous alcohol use on high school teachers the (p); the proportion will be $50 \%$. As a result, the sample size of teachers included in this study
$\mathrm{n}=\underline{\mathrm{Z} 2 \mathrm{p}(1-\mathrm{p})}$
d2

So with this equation the sample Size: $\mathrm{n}=(1.96) 2((0.5)(1-0.5)) /(0.05) 2=384$ Thus, by adding $10 \%$ for possible non-response rate, the total sample size is 423 . Previous studies indicate that male sex, level of education and number of child are significantly associated with hazardous alcohol use(5). Based on these factors, sample size was determined with the following assumptions and below 423(Table 1). Sample size reduction formula will not used so as to have sufficient sample.

Table 1: Sample Size for factors which mostly associated with Hazardous Alcohol Use

| S/N | Significant variables | Assumptions | Total <br> sample size |
| :--- | :--- | :--- | :--- |
| 1 | Male sex | Confidence level=95\% |  |
| Expexposed to HAU | Power= $80 \%$ |  |  |
| $\%$ outcome in unexposed=25.8 |  |  |  |
| $\%$ outcome in exposed= $40.19 \%$ | 398 |  |  |
|  |  | Odds ratio= 1.93 |  |


| 2 | Number of Children <br> Unexposed to HAU= teachers who have no child. <br> Exposed to HAU=teachers who have >1child. | Confidence level=95\% <br> Power $=80 \%$ <br> \% outcome in unexposed $=32.4 \%$ <br> \%outcome in exposed $=19.3 \%$ <br> Odds ratio $=0.5$ <br> $10 \%$ of non-response rate | 420 |
| :---: | :---: | :---: | :---: |
| 3 | level of education exposed to $\mathrm{HAU}=\mathrm{BSC}$ and above <br> Exposed to HAU= diploma and below | Confidence level=95\% <br> Power $=80 \%$ <br> \% outcome in unexposed=52.63\% <br> \%outcome in exposed= $27.6 \%$ <br> Odds ratio $=0.34$ <br> $10 \%$ of non-response rate | 145 |

### 5.6.2. SAMPLING TECHNIQUE/ PROCEDURE

There were eleven public high schools in Bahir Dar city administration, and there were 847 high school teachers in all public high schools. Study participants were selected proportionally from those eleven high schools. The complete name lists of teachers were collected from those public high schools, and all teachers had been alphabetically ordered. Study participants were selected by a simple random sampling method from each high school according to proportion.


Figure 2: Schematic representation of the sampling procedure

### 5.7. STUDY VARIABLES

### 5.7.1. DEPENDENT VARIABLE

Hazardous alcohol use

### 5.7.2. INDEPENDENT VARIABLES

Socio-demographic factors:- Age, Gender, Marital status, Childhood residence, No of children, Religion, level of education, Year of experience, Living arrangement, subject he/she teaches.

Psychosocial and behavioral factors: - Psychological distress, Social support, Peer pressure, teacher Subjective wellbeing, physical exercise, Tobacco use, cannabis use, khat use.

Medical factors: - Known chronic medical condition, Family history mental illness.

### 5.7.3. OPERATIONAL DEFINITION

Hazardous alcohol use: - A score of 3 or more out of 16 indicates the occurrence of hazardous alcohol Use (37, 38).
Psychological distress: k 10 scores $>=22$ considered psychological distress(39).
Social support: level of social support indicated by Oslo 3 Social Support Scale as poor social support (3-8), moderate social support (9-11), and strong social support (12-14) (40).

Teacher Subjective Wellbeing: using Teacher Subjective Well-Being Questionnaire (TSWQ). If the Teaching Efficacy subscale scores item response of " 2 ", which can be interpreted as "sometimes" experiencing teaching efficacy at school. If the Teacher Wellbeing total score " 3.5 ", which can be interpreted as experiencing teacher wellbeing within the "often" to "almost always" range(41).

Physical exercise: using Physical Activity Index Questionnaire, Score 61-100"active physical activity lifestyle", score 41-60 "moderate physical activity lifestyle", score 40 or less "Insufficiently active or Sedentary lifestyle(42).

Stressful Life Events: - LTE items are dichotomous with the "No" or "Yes" response, the presence of one yes in the last 6 month may indicate hazardous alcohol use(43).

### 5.9. DATA COLLECTION PROCEDURES AND TECHNIQUES

Data collectors and facilitator were clearly informed about the data collection procedure and data collection protocol before starting the actual data collection. Four first degree holder nurses for data collection and one first degree holder psychiatry nurse as facilitator were involved. The study participants were informed by the data collectors about their voluntary participation, the purpose of the study and its importance, as well as the significance of true information, and the privacy of participants was given special attention before the beginning of data collection. Taking part in this study was completely a voluntary choice and the right to withdraw at any time is also informed. Data were collected by Epicollect5 Mobile interviewing data collection for selected teachers proportionally from selected public high school by simple random sampling. The tool contains important questions about hazardous alcohol use, socio-demographic characteristics of participants, and psychosocial and behavioral factors. The structured Epicollect5 Mobile interviewing data collection in Amharic had been used. 407 eligible participants who were public high school teachers were interviewed. The principal investigator was monitored the daily data collection activities.

### 5.10. DATA COLLECTION TOOLS

### 5.10.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS

Socio-demographic questionnaire contain the characteristics of participants like Age, gender, marital status, Childhood residence, religion, level of Education, living arrangement

### 5.10.2. DEPENDANT VARIABLE ASSESSMENT TOOL

### 5.10.2.1. FAST ALCOHOL SCREENING TEST

Screening for Hazardous alcohol Use was carried out using the Fast Alcohol Screening Test (FAST), a short screening questionnaire for hazardous drinking comprising four questions which can be easily administered in a minute or less, derived from Alcohol Use Disorder Identification Test (AUDIT)(38, 44). A score of 3 or more out of 16 indicates the occurrence of hazardous alcohol Use $(37,38)$, a pattern of drinking which is associated with increased risk of adverse psychological or physical consequences in the future(38). The FAST has been found to have better psychometric properties with sensitivity of 0.93 and specificity of 0.88 (37). Concurrent
validity of this AUDIT tool was achieved in 2022 in Ethiopia(45). Estimates of the alcohol content of the different locally available beverages has been determined before and used to estimate the amount of alcohol units consumed(46). In Ethiopia in addition to beer there are many types of local alcoholic drinks, few of them are "arake", "tela", and "teji" these were first converted from local measurements (receptacles) to milliliters based according to previous studies in Ethiopia ethanol content of local beverages (47). That allows converting any volume of alcohol into grams. For each milliliter of ethanol, there are 0.79 grams of pure ethanol and was calculated and converted to standard drinks. For example, one can beer ( 330 ml ) at $5 \% \mathrm{x}$ (strength) 0.79 (conversion factor) $=13$ grams of ethanol. So in order to answer the questions we used World Health Organization (WHO) guideline regarding brief intervention for risky drinking defines one standard drink as 10 g of pure ethanol to determine standard alcohol drink(48). Response

### 5.10.3. INDEPENDENT VARIABLE ASSESSMENT TOOLS

### 5.10.3.1. KESSLER 10 PSYCHOLOGICAL DISTRESS SCALE (K10)

The Kessler 10 Psychological Distress Scale (K10) had been used to assess the prevalence of Psychological Distress and identify those in need of further assessment of mental disorders (49). The scale consists of 10 questions that have been asked about the experiences of distress over the last four weeks. Responses will be scored on a five-point ordinal scale reflecting how much of the participants had experienced 10 symptoms over the past four weeks, such as "feeling tired for no good reason" and "sad or depressed." every item on a scale from 1 to 5 ranges in the severity from 'none of the time' to 'all of the time. 'The total K10 score for each participant will be calculated by summing all 10 items, which then ranged from a minimum of 10 to a maximum of 50. In line with prior research, I will be dichotomize the variable, so that participants with scores less than 22 will be regarded as not distressed and participants with scores $>=22$ considered distressed(39). The K10 has shown reliability and validity in previous research Cronbach's alpha coefficient for the K10 was $0.91(50)$. K10 scale has also previously been validated in Ethiopia (51)and yielded good internal consistency of 0.93 , sensitivity of $84.2 \%$, and specificity of $77.8 \%$.

### 5.10.3.2. SOCIAL SUPPORT SCALE

Social support scale: The Oslo 3 Social Support Scale had been applied to know the level of social support towards people. The scale divides the level of social support into three as poor social support (3-8), moderate social support (9-11), and strong social support (12-14) (reliability of Cronbach's $\alpha=0: 91$ (40)

### 5.10.3.3. TEACHER SUBJECTIVE WELLBEING QUESTIONNAIRE

The instrument used to measure teacher well-being is the Teacher Subjective Well-Being Questionnaire (TSWQ)(52). This measuring instrument has 8 items with 2 subscales, namely teaching efficacy and school connectedness. School Connectedness, defined as feeling supported by and relating well to others at school; teaching efficacy or self-efficacy, defined as appraising one's teaching behaviors as effectively meeting environmental demands; and happiness. Each of which consists of 4 items. The instrument uses a 4-point Likert scale from 1 (never) to 4 (always). The scoring technique for this instrument is done by adding up the total score of each participant. Based on the psychometric adaptation, the TSWQ is found to have a satisfactory Cronbach's alpha coefficient of $\alpha=0.865$, followed by a validity coefficient of corrected itemtotal correlation (Cr-IT) ranging from 0.518 to 0.721 . This shows that the TSWQ instrument has good reliability and is internally consistent(53). Interpretation of scale scores can be anchored to response options by dividing the total scores by the number of items in each scale. Subscale example: If the Teaching Efficacy subscale score $=8$, then 8 (total score) / 4 (\# items in subscale) $=$ an average - item response of " 2 ", which can be interpreted as "sometimes" experiencing teaching efficacy at school. Composite scale example: If the Teacher Wellbeing composite score $=28$, then $28($ total score $) / 8(\#$ items in composite scale $)=$ an average - item response of " 3.5 ", which can be interpreted as experiencing teacher wellbeing within the "often" to "almost always" range(41).

### 5.10.3.4. PHYSICAL EXERCISE

The evaluation of the current exercise program for each teacher had been done based on the Physical Activity Index Questionnaire. Physical Activity Index is obtained by multiplying the scores of each parameter: Intensity X Duration X Frequency. Findings physical activity level based on the responses to the questionnaire has the following scale. Score 81-100"Very active lifestyle" with Physical activity level "Excellent", Score 61-80 "Active and healthy" with Physical activity level "Very good", score 41-60 "Acceptable" with Physical activity level "Good", score 20-40 "Insufficiently active - relatively" with Physical activity level sedentary "Weak", score >20 "Sedentary" with Physical activity level "Very weak"(42).

### 5.10.3.5. STRESSFUL LIFE EVENTS

List of Threatening Experiences (LTE), with 12 categories of adverse life events, was used for assessing stressful life experiences in the past six months. Examples of items in the LTE include death of close persons, loss of relationships, imprisonment, and being the victim of theft(54). LTE items are dichotomous with the "No" or "Yes" response format. LTE has good reliability (test-retest reliability of $0.61-0.87$ ) and validity (convergent and construct validity)(54). LTE questionnaire has also been previously used in rural Ethiopia again without any indication of validity issues $(55,56)$.

### 5.10. DATA QUALITY ASSURANCE

The questionnaire had been prepared first in English and then translated into Amharic by experts for data collection purposes, and then it had been translated back to English to ensure consistency. Training had been given to Four B.Sc. nurses for data collection and one B.Sc. psychiatry nurses as facilitator and proper instruction had been given by the investigator before the survey for two days on the purpose of the study, data collection technique, and tools by the investigator. Pretest of the questionnaires had been part of the training on 5\% of the sample size one week before the data collection at in Gondar City Administration where the main study had not been undertaken and its findings had been discussed at the time of training and all the issues concerning the data collection and pretest results had been clarified. Regular supervision and immediate feedback and review of each of the completed questionnaires daily by the principal investigator incomplete questionnaires had been discarded from the analysis.

### 5.11. DATA PROCESSING AND ANALYSIS

Data had been entered into SPSS statistical package version 25.0 for analysis. Using descriptive methods, the data had been summarized, the prevalence of hazardous alcohol use had been presented, and odds ratios (OR) obtained using logistic regression. To determine the association between the different predictor variables and the dependent variable, first bi-variable analysis between each independent variable and the outcome variable had been done using a binary logistic regression model, and then all variables having a P -value $<0.25$ in the bi-variable analysis had been included (suggested as a criterion for variable selection for inclusion) into a multivariable model. Adjusted odds ratios with $95 \%$ confidence intervals had been calculated for each of the independent variables to measure the strength of the association between the outcome and the independent variables. A P-value < 0.05 had been considered as significant.

### 5.12. ETHICAL CONSIDERATIONS

Ethical clearance was obtained from the Bahir Dar University ethical review board. A permission letter was taken from Bahir Dar city administration's education office and sent to each public high school. The respondents were informed and given written consent with the guarantee of a full right to withdraw or refuse at any time during the data collection process. The confidentiality of information given by each respondent had not been disclosed, and anonymity was explained clearly to participants.

## 6. RESULTS

6.1. Socio-demographic characteristics

A total of 407 participants were interviewed with response rate $96 \%$, of whom 264 ( $64.9 \%$ ) were males and 143 ( $35.1 \%$ ) were female. The mean age was $39.22 \pm 5.67$. 88. (21.6\%) participants were found in the age group 30-34 years. Of the participants, 331 (81.3\%) were married and 76 (18.7\%) were single. orthodox Christians were 374(91.9\%), followed by Muslims with 23(5.7\%) and teachers who did not have children were $91(22.4 \%)$. 85(20.9\%) of teachers were living alone in their current living arrangements. of the respondents, 280(68.8\%) were first-degree holders. Only $33(8.1 \%$ ) of teachers had about 1 to 10 years of experience. (See Table 2).

Table 2 Socio-demographic characteristics of participants in Bahir Dar city high school teachers

| Characteristics |  | Number (\%) |
| :--- | :--- | :--- |
| sex | Male | $264(64.9 \%)$ |
|  | Female | $143(35.1 \%)$ |
|  | $30-34$ | $88(21.6 \%)$ |
|  | $35-39$ | $149(36.6 \%)$ |
|  | $40-44$ | $78(19.2 \%)$ |
|  | 45 and above | $92(22.6 \%)$ |
| Marital status | Orthodox | $374(91.9 \%)$ |
|  | Muslim | $23(5.7 \%)$ |
|  | Protestant | $10(2.5 \%)$ |
|  | Married | $331(81.3 \%)$ |
|  | Single | $76(18.7 \%)$ |
| Living arrangement | No children | $91(22.4 \%)$ |
|  | $1-3$ children | $264(64.9 \%)$ |
|  | 4 and above children | $52(12.8 \%)$ |
|  | degree | $280(68.8 \%)$ |
|  | Masters | $127(31.2 \%)$ |
|  | Living with family | $317(77.9 \%)$ |
|  | Living alone | $85(20.9 \%)$ |
|  | Living with friends | $5(1.2 \%)$ |
|  | $1-10$ | $33(8.1 \%)$ |
|  | $11-20$ | $63(15.5 \%)$ |
|  | 21 And above |  |

### 6.2. Psychosocial factors

Use of hazardous amounts of alcohol, as defined by an FAST alcohol screening test greater than or equal to 3 , was seen in $65(16 \%)(C I ; 12.40-19.54)$ and the prevalence of alcohol dependence was $1.7 \%$. Regarding the findings on psychological distress as measured by the Kessler-10 psychological distress scale ( $\mathrm{K} 10 \geq 22$ ), $85(20.9 \%$ ) (CI; 17.0 - 25.0) experience psychological distress and $145(35.6 \%)$ of respondents reported experiencing one or more life events in the last 6 months. Similarly, nearly $121(29.7 \%)$ described their social support as poor, while $105(25.8 \%)$ described it as strong. Almost $18(4.4 \%)$ of teachers Almost Never to sometimes experience teacher wellbeing at school and 384(94.3\%) of teachers were sedentary or weak in physical exercise. (See chart 1).


Fig 1. hazardous alcohol use teachers with their sex in Bahir Dar city high school teachers 2022

Table 3 Details of substance related factors and participants response rate in Bahir Dar city high school teachers 2022

| Current khat used | Yes | $14(3.4 \%)$ |
| :--- | :--- | :--- |
|  | No | $393(96.5 \%)$ |
| Ever used khat | Yes | $20(4.9 \%)$ |
|  | No | $387(95.1)$ |
| Ever used smoking cigarette | Yes | $22(5.4 \%)$ |
|  | No | $385(94.6 \%)$ |
| Current smoking cigarette used | Yes | $15(3.7 \%)$ |
|  | No | $392(96.3)$ |
| Teachers who have friends who take alcohol | Yes | $125(30.7 \%)$ |
|  | No | $282(69.3 \%)$ |
| Teachers Who take alcohol with their friends | Yes | $82(20.1)$ |
|  | No | $325(79.9 \%)$ |

### 6.3. Medical Factors

Regarding the findings on medical factors, 11(2.7\%) of Family history of mental illness and 12(2.9) of Known chronic medical illness and also (6 (1.5\%) DM, 1 ( $0.2 \%$ ) HPN, 3 (0.7\%) Kidney Disease, 2 (0.5\%) heart diseases). (See Table 4).

Table 4.Details of clinical factors and participants response rate in Bahir Dar city high school teachers 2022

| Family history of mental illness | Yes | $11(2.7 \%)$ |
| :--- | :--- | :--- |
|  | No | $396(97.3)$ |
| Known chronic medical illness | Yes | $12(2.9)$ |
|  | No | $395(97.1)$ |
|  | DM | $6(1.5 \%)$ |
|  | HPN | $1(0.2)$ |
|  | Kidney Disease | $3(0.7)$ |
|  | Heart disease | $2(0.5)$ |

## Hazardous alcohol Use and associated factors

Table 5 shows the result of logistic regression analysis of the different factors and their association with hazardous alcohol use; a multivariable model was fit using predictors with a P value $<0.25$. On bivariable logistic regression analysis: sex, age, education level, No of Children, marital status, social support, psychological distress, physical exercise, teacher Wellbeing, stressful life events, Teachers who have friends who take alcohol and Teachers who take alcohol with their friends were associated with hazardous alcohol use ( $\mathrm{p}<0.25$ ). However, in the final model: only sex, age, education level, social support and psychological distress physical exercise were significantly associated with Hazardous Alcohol use practice among Public High school Teachers working in Bahir Dar city ( $\mathrm{p}<0.05$ ). The Hosmer-Lemeshow inferential test was not significant for this multivariable model $\mathrm{p}=0.407$, indicating that the data fit the model well.

Males had 4 times higher odds to Hazardous Alcohol use than females (adjusted OR $=4.04,95 \%$ $\mathrm{CI}=1.66-9.81, \mathrm{P}<0.05$ ). teachers whose age 30 to 34 years had 3.41 times Higher odds of hazardous alcohol use (Adjusted OR 3.41 95\%CI 1.18, 9.91, P<0.05) and being Education level first degree had 3.66 times higher the odds of hazardous alcohol use as compared to Second degree holders (Adjusted OR 3.66 CI 1.53, $8.76 \mathrm{p}<0.05$ ). The other factors significantly associated with hazardous alcohol Use was psychological distress. The odds of Teachers who had psychological distress $(\mathrm{K} 10 \geq 22) 4.91$ times higher for hazardous alcohol Use compared to who had no psychological distress (K10 $\leq 22$ ) (Adjusted OR 4.91 CI 2.44, 9.88, $\mathrm{P}<0.05$ ), and poor social support had 3.95 higher odds of hazardous alcohol use (Adjusted OR 3.95 CI 1.49, 10.45, $\mathrm{P}<0.05$ ), (See Table 5).

Table 4 Bivariable and multivariable logistic regression analysis for the prevalence of hazardous alcohol use among Bahir Dar high school teachers, Ethiopia, 2022

| Characteristics |  | HAU |  | Bivariable |  | Multivariable |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | p | Crude OR (95\% CI) | P | $\begin{aligned} & \text { Adjusted OR (95\% } \\ & \text { CI) } \end{aligned}$ |
|  |  | Yes | No |  |  |  |  |
| Sex | Male | 57 | 218 | 0.001 | 4.05(1.87-8.77) | 0.002 | 4.04(1.66-9.81) |
|  | Female | 8 | 124 |  | Ref |  | Ref |
| Educational Status | Degree | 55 | 225 | 0.004 | 2.86(1.406-5.816) | 0.004 | 3.66(1.53-8.76) |
|  | Masters | 10 | 117 |  | Ref |  | Ref |
| Social support | Poor social support | 30 | 91 | . 001 | 3.99(1.74-9.17) | 0.006 | 3.95(1.49-10.45) |
|  | Moderate social support | 27 | 154 | . 075 | 2.12(0.92-4.87) | 0.071 | 2.39(0.92-6.15) |
|  | high social support | 8 | 97 |  | Ref |  | Ref |
| Psychological distress | No psychological distress | 34 | 288 |  | Ref |  | Ref |
|  | Psychological Distress | 31 | 54 | 0.001 | 4.863(2.759-8.572) | 0.001 | 4.91(2.44-9.88) |
| Age | 30-34 | 20 | 68 | 0.012 | 3.08(1.2-7.44) | 0.023 | 3.42(1.18-9.91) |
|  | 35-39 | 23 | 126 | 0.134 | 1.917(0.81-4.48) | 0.182 | 1.98(0.72-5.44) |
|  | 40-44 | 14 | 64 | 0.079 | 2.29(0.90-5.80) | 0.061 | 2.91(0.95-8.92) |
|  | 45 and above | 8 | 84 |  | Ref |  | Ref |
| Marital status | Married | 43 | 288 |  | Ref |  | Ref |
|  | Single | 22 | 54 | 0.001 | 2.729(1.512-4.924) | 0.186 | 1.74(0.76-3.95) |
| Living <br> Arrangement | Living with family | 24 | 293 | 0.327 | 0.328(0.035-3.048) |  |  |
|  | Living with alone | 40 | 45 | 0.265 | 3.556(.381-33.143) |  |  |
|  | Living with friends | 1 | 4 |  | Ref |  |  |
| Current khat use | Yes | 4 | 16 | 0.615 | 0.748(0.242-2.315) |  |  |
|  | No | 61 | 326 |  | Ref |  |  |
| Current tobacco use | Yes | 4 | 11 | 0.258 | 1.973(0.608-6.399) |  |  |
|  | No | 61 | 331 |  | Ref |  |  |
| Teachers who have friends who use alcohol | Yes | 33 | 92 | 0.001 | 2.802(1.630-4.818) | 0.863 | 1.09(0.40-2.92) |
|  | No | 32 | 250 |  | Ref |  | Ref |
| take alcohol with their friends | Yes | 28 | 54 | 0.001 | 4.036(2.281-7.141) | 0.081 | 2.49(0.89-6.98) |
|  | No | 37 | 288 |  | Ref |  | Ref |
| Teacher wellbeing | Never to sometimes | 5 | 13 | 0.107 | 2.455(0.823-7.322) | . 103 | 3.01(0.80-11.31) |
|  | Sometimes to often | 26 | 112 | 0.168 | 1.48(0.847-2.592) | 0.366 | 1.35(0.69-2.63) |
|  | Often to almost always | 34 | 217 |  | Ref |  | Ref |
| Physical Exercise | Sedentary/weak PE | 57 | 327 | 0.150 | 3.060(0.240-7.548) |  |  |
|  | Moderate PE | 8 | 15 |  | Ref |  |  |
| stressful life event | No stressful life event | 39 | 223 | 0.422 | 0.80(0.465-1.379) |  |  |
|  | 1 or more stressful Events | 26 | 119 |  | Ref |  |  |
| Experience in year | 1-10 | 4 | 29 |  | Ref |  |  |
|  | 11-20 | 57 | 254 | 0.337 | 1.627(0.558-4.811) |  |  |
|  | 21 and above | 4 | 59 | 0.339 | 0.492(0.115-2.107) |  | Ref |
| No of children's | No children | 28 | 63 | 0.006 | 4.178(1.501-11.630) | 0.987 | 0.989(0.27-3.54) |
|  | 1-3 children's | 32 | 232 | 0.608 | 1.297(0.480-3.501) | 0.282 | 0.53(0.17-1.66) |
|  | 4 and above children's | 5 | 47 |  | Ref |  | Ref |
| Religious | Orthodox Christian | 61 | 313 | 0.756 | 0.780(0.162-3.760) |  |  |
|  | Muslim | 2 | 21 | 0.373 | 0.381(0.046-3.181) |  |  |
|  | Protestant | 2 | 8 |  | Ref |  |  |
| Family History of mental illness | yes |  |  |  | Ref |  |  |
|  | No |  |  | 0.535 | 1.92(0.243-15.32) |  |  |

## 7. DISCUSSION

This study examined hazardous alcohol use among teachers working in public high schools and identified factors associated with hazardous alcohol use among this occupational group. The prevalence of hazardous alcohol use found in this study was $16 \%$ CI (12.40, 19.54), of which $20.7 \%$ of male teachers and $6.1 \%$ of female teachers.

This rate is similar to study found hazardous alcohol use $14.9 \%$ of this $16.6 \%$ of male teachers and $12.4 \%$ of female teachers among teachers in Japanese public school teachers (29). The level of hazardous alcohol use among teachers in this study was lower than that of study in Southwestern Nigeria, which was $30.9 \%$ (5), a study in public school teachers in Nyeri County, Kenya, which was $32.7 \%$ (17) and in Ghana teachers was $23.2 \%$ (32). This may be attributable to differences in beliefs, religious and cultural practices, environmental factors, urbanization, lifestyle, national laws, and governmental and legal enforcement of alcohol-related regulations(57).

The level of hazardous alcohol use among teachers in this study (16\%) is lower than that of the population of Ethiopia's rural Sodo district, was $21.3 \%$ (33). Although tool use to screen hazardous alcohol use were the same (FAST alcohol screening test) differences in the study population and Teachers tend to be given more responsibilities and don't have time to go(17). However, this study is higher than that studied in South Africa, where general population hazardous alcohol use was $9 \%$ (31). factors relating to the occupations, Teachers drink alcohol to be happy after work, to manage burnout and stress may be implicated for increasing (10).

Regarding associated factors this study found male teachers were 4 times more likely to consume alcohol hazardously than female teachers in comparison to females (Adjusted OR 4.04 CI (1.66, 9.81) P <0.05). it is in line with study conducted in Nigeria(5),Ghana(32), Uganda (30). Another study among teachers in similar settings also found a significant association between alcohol use and male gender(30). These results could be attributed to the persistent gender norms regarding alcohol use. It happens that the traditional customs favour males more than females drinking. Women are more criticized than men for using hazardous alcoholic beverages in public. As a result, males could find drinking comfortable and socially acceptable than females. Also in addition to biological factors, In contrast to women, men are more likely to engage in risky behaviors and dangerous activities(58).

This study found a significant association between hazardous alcohol use and younger age. teachers with in age 30 to 34 years had 3.41 times higher risk to hazardous alcohol use (Adjusted OR $3.4195 \%$ CI 1.18, $9.91, \mathrm{P}<0.05$ ). This is in agreement with a study conducted in Nigeria (5) and Ghana (32). A number of studies on alcohol and drug use within and outside Ethiopia have found that alcohol use commonly starts in early adolescents and early adulthood (5, 17, 29, 33).

Hazardous alcohol use had a significant association between a teacher's levels of education. When compared to second-degree holders, first degree holders were 3.66 times higher odds of hazardous alcohol use (Adjusted OR 3.66 CI $1.53,8.76 \mathrm{p}<0.05$ ), similarly this study is comparable with a study conducted in Nigeria lower level of education(5). This finding contraindicated to study in Ghana which higher education level is risk to hazardous alcohol use(32). Lower levels of education may be associated with lower socioeconomic status, less responsibility, and a lack of promotion for teachers who engage in hazardous alcohol use.

There was a significant relationship between hazardous alcohol use and psychological distress, with respondents having a history of hazardous alcohol use 4.91 times more likely to have psychological distress(K10 22 ) (Adjusted OR 4.91 CI 2.44, 9.88, P0.05). Also study in Ethiopia severe psychological distress had significantly associated with hazardous alcohol use(33). less than conducive school environment; standing for lengthy hours while teaching; assessing and evaluating students' work; pressure to prepare lesson notes and complete the curriculum; preparation for teaching and delivering lectures. This is consistent with studies reported from elsewhere. Although it is difficult to determine causality, it is common to find people who have underlying psychological problems to be more prone to hazardous alcohol use, possibly as selfmedication or because the hazardous Use of alcohol may predispose users to psychological distress $(59,60)$.

The other predictive factor which was revealed in this study was social support. Teachers who had poor social support had 3.95 more likely to drink alcohol hazardously (Adjusted OR 3.95 CI $1.49,10.45, \mathrm{P}<0.05$ ). Most teachers had a family, they were married, and they had children. They may turn to them in times of hazardous alcohol use to gave a broader focus and a positive selfimage.

## 8. LIMITATIONS

## Limitations of study

Possibly, there could be recall bias and results may have been influenced by response bias. Because this study used a cross-sectional design, our findings do not indicate whether the relationship between psychological distress and HAU is causal, nor can the direction of any such causality be determined.

## 9. CONCLUSION AND RECOMMENDATIONS

## Conclusions

In this research, the prevalence of hazardous alcohol use was $16 \%$. Significant sociodemographic characteristics include male gender, younger age, and lower levels of education. Psychological distress and high social support are psychosocial significant associated factors. This study found hazardous alcohol use is problem especially among young teachers. There is an urgent need to address the seriousness of hazardous alcohol use among high school teachers considering the important role they play in school-based hazardous alcohol use problem prevention strategies.

## Recommendations

## For researchers

Further longitudinal research by considering some of the risk factors highlighted in this study will assist greatly in determining the relationship between hazardous alcohol use and respondents' psychological wellbeing.

## Ethiopian ministry of education

Should be held accountable for the profession's ethics Ethiopia Ministry of Education and Ethiopian ministry of education and Ministry of health

Should have a policy as part of their in-service training or refresher courses to organize workshops on hazardous alcohol use and effects on their lives and work.

Should develop an action plan for the promotion of mental health programs for teachers.

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## 13. Annex I: English version consent form

### 13.1.1 Individual Information Document

Code No--------------- date------
Dear participants. I am working as data collector for Mr. Abrham Maru; who is undertaking a Master degree in mental health at Bahirdar University. This letter serves to ask consent from you to take part in this study.
The purpose of this study is to assess the prevalence of hazardous alcohol use and its associated factors among public high school teachers in bahir dar city. Your participation in this research is voluntary. If you decide not to participate there will be no negative consequences and no benefits for you. Except, If you have scored high on the measurement scale you will be, with your permission, be referred to any hospital that have mental health services for assistance. However, your participation on this study is very important for achievement of the study and for paying the way to develop evidence based mental health promotion, disease prevention and treatment for the integration of mental health service in the early detection and giving appropriate care at the community level thereby increasing the quality of care for these people.
There is no any risk that will occur to you because of your participation in this study. All the responses given by you and results obtained will be kept confidential using coding system whereby no one will have access to your response. You have full right to refuse and withdrawal to participate in this study if you don't wish at any time.
The Interview period will take about 20 minutes. If you are willing to participate in this study, you need to understand and sign the agreement form and then you will give your responses to data collectors.

### 13.1.2 Informed consent form

I confirm that I understand the contents of this document and the nature of the research project, and I consent to participating voluntarily in the research project and to withdraw any time too. Signature of Participant .Date $\qquad$
Name and signature of supervisor. Date $\qquad$
Name and signature of data collector
Date. $\qquad$

### 13.2. Annex II: English version Questionnaire.

1. Socio demographic information

| S.N | Questioners | Alternative response | Coding |
| :---: | :---: | :---: | :---: |
| 101 | Sex | 1. Male 2. Female |  |
| 102 | Age |  |  |
| 103 | Religion | 1. Orthodox <br> 2. Muslim <br> 3. Protestant <br> 4. Catholic <br> 4. other specified |  |
| 104 | Marital status | 1. Single 2.Married/living together <br> 3.Divorced 4.widowed |  |
| 105 | How many children do you have |  |  |
| 106 | Educational status | 1. Diploma <br> 2. Degree <br> 3. Masters <br> 4. Others specify... |  |
| 107 | subject he/she teaches | 1.english 2.mathes 3.physics <br> 4. Biology 5.chemistry 6. Geography <br> 7. History 8.Economics 9.civics <br> 10.pysical education 11.others  |  |
| 108 | Year of experience |  |  |
| 109 | Childhood residence | 1. Rural 2. Urban |  |
| 110 | Living arrangement | 1. Live alone <br> 2. Live with friends <br> 3. Live with family |  |

2. Psychosocial factors
2.1. Peer pressure

| S.N | Questions | Choose | score |  |
| :--- | :--- | :--- | :---: | :--- |
| 201 | Have you friends that take alcohol? | 1. Yes | 2. No |  |
| 202 | Have you take alcohol with your friend? | 1. Yes | 2. No |  |

2.2. Social support

| No | Questionnaire | Alternative response |
| :---: | :---: | :---: |
| 301 | How many people are you so close to that you can count on them if you have great personal problems? | 1. None <br> 2. 1-2 <br> 3. 3-5 <br> 4. 5 and above |
| 302 | How much interest and concern do people show in what you do? | $\begin{array}{ll}\text { 1. Very little } & \text { 2. Little } \\ \text { 3. Uncertain } & \text { 4. Some 5. A lot }\end{array}$ |
| 303 | How easy is it to get practical help from neighbors if you should need it? | 1. Very difficult <br> 2. Difficult <br> 3. Possible <br> 4. Easy <br> 5.Very easy |

### 2.3. Kessler Psychological Distress Scale (K10)

| S.N | During the last 30 days | None of <br> the <br> time | A little <br> of the <br> time | Some <br> of the <br> time | Most <br> of the <br> time | All of <br> the <br> time |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 401 | About how often did you feel tired out for no <br> good reason? | 1 | 2 | 3 | 4 | 5 | scor <br> t |
| 402 | About how often did you feel nervous? | 1 | 2 | 3 | 4 | 5 |  |
| 403 | About how often did you feel so nervous that <br> nothing could calm you down? | 1 | 2 | 3 | 4 | 5 |  |
| 404 | About how often did you feel hopeless? | 1 | 2 | 3 | 4 | 5 |  |
| 405 | During the last 30 days, about how often did you <br> feel restless or fidgety? | 1 | 2 | 3 | 4 | 5 | 5 |
| 406 | During the last 30 days, about how often did you <br> feel so restless you could not sit still? | 1 | 2 | 3 | 4 | 5 |  |
| 407 | During the last 30 days, about how often did you <br> feel depressed? | 1 | 2 | 3 | 4 | 5 |  |
| 408 | During the last 30 days, about how often did you <br> feel that everything was an effort? | 1 | 2 | 3 | 4 | 5 | 5 |
| 409 | During the last 30 days, about how often did you <br> feel so sad that nothing could cheer you up? | 1 | 2 | 3 | 4 | 5 |  |
| 410 | During the last 30 days, about how often did you <br> feel worthless? | 1 | 2 | 3 | 4 | 5 |  |

2.4. Teacher Subjective Wellbeing Questionnaire

| S.No |  | Almost <br> Never | Some <br> times | Often | Almost <br> Always |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 501 | I feel like I belong at this school. | 1 | 2 | 3 | 4 |
| 502 | I am a successful teacher. | 1 | 2 | 3 | 4 |
| 503 | I can really be myself at this school. | 1 | 2 | 3 | 4 |
| 504 | I am good at helping students learn new things | 1 | 2 | 3 | 4 |
| 505 | I feel like people at this school care about me. | 1 | 2 | 3 | 4 |
| 506 | I have accomplished a lot as a teacher. | 1 | 2 | 3 | 4 |
| 507 | I am treated with respect at this school. | 1 | 2 | 3 | 4 |
| 508 | I feel like my teaching is effective and helpful. | 1 | 2 | 3 | 4 |

### 2.5. Stressful life events

| S.No | In the next questionnaire 12 unpleasant events are listed. Please indicate if you have <br> experienced these events in the past 6 months. | Yes | No |
| :--- | :--- | :--- | :--- |
| 601 | in the past 6 months You yourself suffered a serious illness, injury or an assault |  |  |
| 602 | in the past 6 months A serious illness, injury or assault happened to a close relative |  |  |
| 603 | in the past 6 months Your parent, child or spouse died |  |  |
| 604 | in the past 6 months A close family friend or another relative (aunt, cousin, <br> grandparent) died |  |  |
| 605 | in the past 6 months You had a separation due to marital difficulties |  |  |
| 606 | in the past 6 months You broke off a steady relationship |  |  |
| 607 | in the past 6 months You had a serious problem with a close friend, neighbor or relative |  |  |
| 608 | in the past 6 months You became unemployed or you were seeking work unsuccessfully <br> for more than 1 month |  |  |
| 609 | in the past 6 months You were sacked from your job |  |  |
| 610 | in the past 6 months You had a major financial crisis |  |  |
| 611 | in the past 6 months You had problems with the police and a court appearance |  |  |
| 612 | in the past 6 months Something you valued was lost or stolen |  |  |

### 2.6. Other Substance Use and related Questions

| No. | Questions | Yes(1) | No(0) |
| :--- | :--- | :--- | :--- |
| 701 | Have you ever used khat in your life? |  |  |
| 702 | Have you used khat in the last 3 months? |  |  |
| 703 | Have you ever used Cannabis (marijuana, pot, grass, hash, etc.) in your life? |  |  |
| 704 | Have you used Cannabis (marijuana, pot, grass, hash, etc.) in last 3 months? |  |  |
| 705 | Have you ever used tobacco products? |  |  |
| 706 | Have you used any kind of tobacco products in the last 3 months? |  |  |

2.7. Physical exercise (Physical exercise index questionnaires)


## 3. Clinical Factors

| No. | Questionnaire | Response |  |
| :--- | :--- | :--- | :--- |
| 901 | Do you have family history of mental illness? | 1. Yes | 2.No |
| 902 | Do you have any known chronic medical condition? | 1. Yes | 2.No |
| 903 | If yes, which known medical condition have you diagnosed? A. Diabetes Mellitus B. heart disease C. <br> Epilepsy <br> D. TB E. Kidney disease F. Cancer E. Others Specify__ |  |  |

## 4. FAST ALCOHOL SCREENING TEST

| S/N | Questions | Scoring system |  |  |  |  | Your score |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 |  |
| 1 | How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |  |
|  | Never (0), Less than monthly (1) or Monthly (2). Stop here if the answer is Weekly (3) or Daily (4). |  |  |  |  |  |  |
| 2 | How often during the last year have you failed to do what was normally expected from you because of your drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |  |
| 3 | How often during the last year have you been unable to remember what happened the night before because you had been drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |  |
| 4 | Has a relative or friend, teachers or other been concerned about your drinking or suggested that you cut down? | No |  | Yes, but not in the last year |  | Yes, during the last year |  |
|  | An overall total score of 3 or more on the first or all 4 questions is FAST positive. |  |  |  |  |  |  |
| 5 | How often do you have a drink containing alcohol? | Never | Monthly or less | $\begin{aligned} & 2-4 \times a \\ & \text { month } \end{aligned}$ | $\begin{aligned} & 2-3 \times a \\ & \text { week } \end{aligned}$ | 4 or more x a week |  |
| 6 | How many units of alcohol do you drink on a typical day when you are drinking? | 1 or 2 | 3 or 4 | 5 or 6 | 7,8 or 9 | $\begin{array}{ll} 10 & \text { or } \\ \text { more } \end{array}$ |  |
| 7 | How often during the last year have you found that you were not able to stop drinking once you had started? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |  |
| 8 | How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? | Never | Less than monthly | Monthly | Weekly | Daily or almos $\dagger$ daily |  |
| 9 | How often during the last year have you had a feeling of guilt or remorse after drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almos $\dagger$ daily |  |
| 10 | Have you or someone else been injured because of your drinking? | No |  | Yes, but not in the last year |  | Yes, in the last year |  |

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## FAST Alcohol Screening

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## BAHIR DAR UNIVERSTTTY

## COILEGE OF MEDICTNE AND HEALTHSCIENCE <br> DEPARTMENT OF PSYCHIATRY

Approval Sheet
we bereby certify that we have examined this thesis entitled "prevalence hazardous alcohol use and its associated factors among teachers working in public high schools at Bahir Dar city, northwest Ethiopia $2022^{\prime \prime}$ by Abrham Maru. We recommend that this project is approved for the degree of masters of Science in integrated clinical and community mental health

Board of Examiners


Internal examiner's I name

Internal examincr's II name



## Declaration form <br> Declaration

I, the under signed, declared that this is my original work, has never been presented in this of any other University, and that all the resourees and materials used for the research, have been fully acknowledged.

## Principal investigator



Advisors
Name:
Signature: $\qquad$
Date: $\qquad$

Advisors


