

# Youth unemployment and Mental Health: Prevalence and determinant factors of depression among unemployed young adults in Gedeo zone, Southern Ethiopia

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## Research

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# Abstract

**Background:** The high rate of unemployment among young adults (aged 18 to 30 years) is a public health concern. The risk of mental health problems like depression is higher among the unemployed than among the employed. However, little is known about the prevalence and determinants of depression among unemployed young adults in Ethiopia. Hence, this study is aimed to assess the prevalence and determinant factors of depression among unemployed young adults in Gedeo zone, Southern Ethiopia.

**Methods:** Community based cross sectional study design was conducted among 1419 unemployed young adults in Gedeo zone, Southern Ethiopia from May to July, 2019. Systematic random sampling technique was used to select study participants. Data on socio-demographic characteristics of unemployed young adults was collected by using structured questionnaire and presence of depression was assessed by Patient Health Questionnaire-9 (PHQ-9). Data was coded and entered into Epi-Data version 3.1 and analyzed by SPSS version 20. A multivariable logistic regression analysis was carried out to identify factors associated with depression, and variables with p-values < 0.05 were considered as statistically significant. The strength of the association was presented by adjusted odds ratio with their 95% confidence interval.

**Result:** The overall prevalence of depression among unemployed young adults in the present study was 30.9% (95% CI: 28.4%, 33.1%). Of the total study participants with depression, 249(17.5%) had mild depression, 158(11.1%) had moderate depression, and 32(2.3%) had severe depression. Being male (AOR=1.40, 95%CI: 1.10, 1.80), long duration of unemployment ( $\geq 1$ years) (AOR=1.56, 95%CI: 1.21, 1.99), low self-esteem (AOR=1.32, 95%CI: 1.03, 1.68), poor social support (AOR=1.98, 95%CI: 1.34, 2.93), and current alcohol use (AOR=1.86, 95%CI: 1.33, 2.59) were significantly associated with depression among unemployed young adults.

**Conclusion :** Our study revealed a high prevalence of depression among unemployed young adults, with three out of ten unemployed young adults having significant depression. Being male, long duration of unemployment, low self-esteem, poor social support, and current alcohol use were statistically significant with depression. Therefore, our study suggest that Policy makers, program planners, and other concerned bodies should establish appropriate strategy for prevention, early detection and management of depression among unemployed young adults.

## Background

The life period of young adulthood (emerging adulthood) is not only the period of transition from adolescence to adulthood but also, the period of transition from education to employment, which is characterized by high instability [1] and several major life changes such as leaving the parental home, starting a partner relationship, and finding a stable employment[2, 3].

Depressive disorders, as the most common mental problems[4] and leading cause of disability[5], are related to reduced quality of life and increased risk for physical health problems[6]. In 2015, the Global Burden of Diseases study (GBD) estimated that seven of the top 25 causes of Years Lived with Disability (YLD) globally were mental disorders, with major depressive disorder ranked second[7]. Depression among young adults, the period of transition from adolescence to adulthood[8], influences long-term

consequences through recurrent depressive episodes[9] and worse socioeconomic outcomes[10] even though it has substantial consequences throughout the lifespan.

Employment is a source of financial security, provides people the opportunity to fulfill a social and family role, which is much more important for physical and mental health[11]. However, unemployment is a major social problem that determines loss of income, increases the risk of poverty and affect overall health[12, 13]. In addition, unemployment is regarded as a change in social position, particularly a change in family role, and is usually perceived as a very stressful life event [14–16]. In their systematic literature review and meta-analytic study, Paul and Moser[17] reported that unemployed person does not have an access to the five latent functions of employment like structured time, social contact, collective purpose, social status and activity. The Authors indicate that the absence of these factors causes depression.

Unemployment is measured using the following three criteria: (1) without work (2) available for work and (3) seeking work [18]. However, this definition varies in the context of developed and developing countries. In the developed countries where the labour market is largely organized and labour absorption is adequate, unemployment is measured based on the standard definition of the seeking work criteria that is having taken active steps to search for work during specified reference period (i.e. during last one week).

On the other hand, in developing countries like Ethiopia, where there is no strong labour market information, labour absorption is inadequate and where the labour force is predominantly self-employed, the standard definition with its emphasis on seeking work criteria is somewhat restrictive and might not fully capture the prevailing employment situation. The relaxed definition which measures unemployment in relation to “without work” and “availability for work” criterion is found to be more plausible in most developing countries.

The number and rate of unemployed people, in both developed and developing countries, is currently increasing than ever before. According to International Labour Organization(ILO) report, the number of unemployed people was 192.3 million in 2018 and 193.6 million in 2019[19]. In Africa, based on this report, the number of unemployed people was 37.9 million in 2018 and 40.1 million in 2019[19].

In Ethiopia, according to Ethiopian Central Statistical Agency (CSA), the rate of unemployed people was 16.9% in 2016 and 19.1% in 2018[20]. The rate of unemployment among young people in Ethiopia was 22% in 2016 and 25.3% in 2018 [20], indicating that young people are more affected by unemployment than adults.

Unemployment has been shown to have wide range effects on mental health from which depression is the most common mental health problems particularly among young people.

The estimated prevalence of depression among unemployed young adults varies across the studies due to different methods, tools and sample size. A systematic literature review and meta-analysis study (237 cross-sectional studies and 87 longitudinal studies) found prevalence of depression among unemployed individuals with range from 13–14%[17].

Based on the cross-sectional study conducted among 426 unemployed people in United State of America by using the Center for Epidemiological Study Depression Scale (CES-D), the reported prevalence of depression was 29%[21]. According to recent cross-sectional study from Greece conducted among 1064 unemployed young adults by using Depression Anxiety Stress Scale (DASS-21), the reported prevalence of depression was 32.2%[22]. Another cross-sectional study conducted in Spain among 244 unemployed young adults by using Zung's self-rating depression scale (SDS) showed the prevalence of depression with its severity: 41.8% slight depression, 42.2% moderate depression and 9.3% severe depression[23]. Similar study done in Korea among 124 unemployed young adults by using Beck Depression Inventory-II (BDI-II) found prevalence of depression 39.5%[24]. Another cross-sectional study done in Bangladesh among 304 unemployed young adults by using Depression Anxiety Stress Scale (DASS-21) showed prevalence of depression 49.3%[25].

Several studies have revealed that sex[26, 27], long duration of unemployment[28, 29], low self-esteem[30, 31], poor social support[32–34] and substance use[35, 36] were associated with depression among unemployed young people.

Unemployment among young people has been described as having serious consequences for future lives of young adults and for society at large. Previous studies have suggested that unemployed young people are more likely to have poor physical health[37, 38], engage more frequently in criminal behaviors[39], increased risk of smoking[40], increased risk of alcohol consumption and substance abuse[39, 41]. Moreover, unemployment among young people has been associated with higher mortality rates due to suicide[39, 42] and alcohol-related mortality[43]. Furthermore, unemployment among young adults results substantial crises in psychological, social and economic perspectives, some of them are: increasing crime rates and violence, dependence on family, low self esteem, poor social adaptation, depression and loss of confidence[44].

Despite the increasing rate of unemployment, in turn, which increase the risk of mental health problems (i.e. depression) among unemployed young adults, there is less attention given for this major public health issue in African countries, particularly in Ethiopia. To the best of our knowledge no study has been conducted to assess prevalence and determinant factors of depression among unemployed young adults in Ethiopia as well as in the study area. Therefore, the present study will assess prevalence and determinant factors of depression among unemployed young adults in Gedeo zone, Southern Ethiopia. The findings of this study will help health programmers and policy makers at large to design preventive strategies and intervention programs of mental health problems for unemployed young people.

## Method

### Study design and period

Community based cross sectional study was conducted to assess prevalence and determinants of depression among unemployed young adults in Gedeo zone, Southern Ethiopia from May to July, 2019.

## Study Area

The study was conducted in Gedeo zone, Southern, Ethiopia. Gedeo zone, located in the southern part of the country, is one of the 14 Zones of South Nation, Nationalities and People's Region (SNNPR), 375 km from the capital city of Ethiopia, Addis Ababa, and 100 km from Hawassa, the capital city of South Nation, Nationalities and People's Region (SNNPR). It has a total population of 1,129,051 (565,145 males and 563,906 females). The total number of unemployed young adults in the zone is 34,724 (18,190 from urban and 16,534 from rural)[45].

## Study Populations

All unemployed young adults aged 18–30 years old who were graduated from college or university and living in the study area (in the selected districts and town administration of the zone) for at least six months prior to the study were study population. Unemployed young adults who were severely ill and unable to communicate during study period were excluded.

## Sample Size determination and Sampling procedures

In this study, sample size was calculated using EPI-Info version 7 statistical software (Epi-info/StatCalc) by taking the following assumptions: 80% power, 95% confidence interval, 15% proportion of depression among exposed group (female) and 9.6% among unexposed group (male) [46] and 10% non-response rate. Thus, the total sample size required for the study was 1452. Out of the six districts and two town administrations of Gedeo zone, two districts (Bule district and Gedeb district) and two town administrations (Dilla town and Yirgacheffe town) were selected randomly by using lottery method. Then from each selected town administration and town of selected district three kebeles (the smallest administrative unit in Ethiopia) were selected randomly by using lottery method. To fix a sampling frame, we conducted census of households with unemployed young adults prior to actual data collection for one week by eight data collectors and numbering of households was done in the selected kebeles. Population proportion allocation was done to identify representative study participants from each district and town administration. Finally, systematic sampling technique with an interval (K) was used to select study participants. The first study participant was selected using lottery method, and every three (3) households was interviewed for Dilla town, every four (4) household was interviewed for Gedeb district, every four (4) household was interviewed for Bule district and every six (6) household was interviewed for Yirgacheffe town. In situations where households had two or more eligible study participants, only one was selected by lottery method.

## Data collection tools and procedures

The structured questionnaire was used to collect data regarding information about the study participants' socio-demographic characteristics such as age, sex, marital status, ethnicity, religion, educational level and duration of unemployment.

Patient health questionnaire-9(PHQ-9) based on the DSM-IV criteria was used to assess the presence of depression with recall period of two weeks[47]. The scale consists of 9-items representing symptoms of depression and each symptom will be rated on a 4-point scale indicating the occurrence and the severity of symptoms: 0(not at all), 1(several days), 2(more than half the days) and 3(nearly every day). The PHQ-9 items showed good internal reliability with Cronbach's alpha of 0.84 for primary health care setting and general population[48]. A cutoff score of 10 was established for the PHQ-9 (sensitivity 86.49%, specificity 89.36%), correctly classifying 86.4% of patients with current depression in primary health care setting[48].

The presence of substance use was measured by using WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) tool [49]. The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was developed for the World Health Organization (WHO) by an international group of researchers and clinicians as a technical tool to assist with early identification of substance use related health risks and substance use disorders in primary health care, general medical care and other settings[49].

The self-esteem was measured with Rosenberg Self-esteem Scale (RSES). The scale is a 10-item self-report scale designed to measure global self-esteem with a Cronbach alpha reliability range of 0.79 to 0.86 [50]. Some items in the scale are "I feel that I have a number of good qualities," "I feel I do not have much to be proud of," and "At times I think I am no good at all." Responses are provided on a 4-point Likert scale ranging from "Strongly Agree" (with 4 marks), "Agree" (3 marks),"Disagree" (2 marks) and "Strongly Disagree" (1). Items 3, 5, 8, 9 and 10 are reverse scored in which a "Strongly Agree" response attracts 1 mark, "Agree" with 2 marks,"Disagree" with 3 marks and "Strongly Disagree" with 4 marks. The scale ranges from 0 to 30: a score greater than 15 suggest high self-esteem and scores less than 15 suggest low self-esteem [50].

Social support was measured by using three items Oslo social support scale (OSS-3) [51].

Social Support- Oslo three items social support scale (OSS-3) provides a brief measure of social support and functioning and it is considered to be one of the best predictors of mental health. It covers different fields of social support by measuring the number of people the respondent feels close to, the interest and concern shown by others, and the ease of obtaining practical help from others. In order to score OSS-3, total scores are calculated by adding up the raw scores for each item. The sum of the raw scores has a range from 3–14.The Cronbach's alpha level of OSS-3 is relatively low (.50). In this case, however, the low Cronbach's alpha does not necessarily reflect a low reliability, but rather the multidimensional structure of the index[51].

The questionnaire was first prepared in English and translated to Amharic (local working language) by language experts and was translated back to English by another person to ensure consistency and accuracy. The data collectors and supervisors were recruited based on previous experience on data collection and supervision. Training was given for three consecutive days for data collectors and supervisors on how to interview, handle ethical issues, supervise and maintain confidentiality and privacy of study subjects. The data collection instrument was pre-tested on 5% of the actual sample size in

similar setting, and amendments were made accordingly. Data was collected by trained eight BSc Psychiatry Nurses and supervised by four MSc Mental health professionals and the principal investigator. Finally, after checked completeness of the required type of data by principal investigator and supervisors the completed data was coded.

## Data analysis

The data was checked for completeness, coded and entered into Epi-Data version 3.1 and exported to statistical package for social sciences (SPSS) version 20 for analysis. Means, frequencies, and percentages were used to summarize data and figures, tables and text to present data. Bivariate analysis was done to see the associations of each independent variable with depression among unemployed young adults. Variables which had p-value less than 0.2 were considered for the multivariable logistic regression to control the effects of confounding variables. The Hosmer-Lemeshow goodness of fit test was checked for the model. Finally, Variables which had P-values less than 0.05 on multivariable logistic regression were considered as statistically significant and were identified on the basis of OR with 95% C.I.

## Results

### Socio-demographic characteristics of unemployed young adults

A total number of 1419 unemployed young adults were participated in the present study with the response rate of 97.7%. The mean age of the study participants was 23.7 (SD  $\pm$  3.35) years, and 837 (59%) of the participants were in the age range of 18–24 years. Among unemployed young adults participated in the current study, 820 (57.8%) were males and 599(42.2%) were females. Of the 1419 respondents, 991(69.8) were single, 1066 (75.1%) were Gedeo in ethnicity, and 607 (42.8%) were Orthodox in religion. Six hundred seventy four (47.5%) of participants had diploma educational level, and 688(48.5%) of participants had poor social support. Regarding duration of unemployment, 951 (67%) of study participants had duration of unemployment less than one year and followed by those who had  $\geq$  1 year duration of unemployment, 468(33%). Of the total unemployed young adults participated in the study, 788(55.5%) had high self-esteem, and followed by those who had low self-esteem, 631 (44.5%) as measured by Rosenberg Self-esteem Scale (Table 1).

Table 1  
Socio demographic characteristics of unemployed young adults in  
Gedeo zone, Southern, Ethiopia, 2019 (N = 1419)

Variables	Frequency	Percentage
Age in years( mean = 23.7, SD = ± 3.35)		
18–24	837	59%
25–30	582	41%
Sex		
Male	820	57.8%
Female	599	42.2%
Marital status		
Married	428	30.2%
Single/divorced/separated	991	69.8%
Ethnicity of study participant		
Gedeo	1066	75.1%
Others <sup>a</sup>	353	24.9%
Religion		
Orthodox	607	42.8%
Protestant	597	42.1%
Muslim	167	11.7%
Others <sup>b</sup>	48	3.4%
Educational level		
Certificate	605	42.6%
Diploma	674	47.5%
Degree and above	140	9.9%
Duration of unemployment		
< 1 year	951	67%
a = Oromo, Amhara, Gurage, Wolaita		
b = Catholic, Adventist		

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
≥ 1 year	468	33%
Social support		
Poor social support	688	48.5%
Moderate social support	545	38.4%
Strong social support	186	13.1%
Self-esteem (Mean = 15.58, SD ± 3.55)		
Low self-esteem		
High self-esteem		
a = Oromo, Amhara, Gurage, Wolaita		
b = Catholic, Adventist		

Table 2

Factors associated with depression among unemployed youth living in Gedeo zone, Southern Ethiopia (bivariate and multivariate logistic regression) (N = 1419), 2019.

Variables	Depression		COR(95%CI)	AOR(95%CI)
	No	Yes		
Age in years				
18–24	604	233	1	1
25–30	376	206	1.42(1.13–1.78)*	1.17(0.91–1.49)
Sex				
Male	532	288	1.61(1.27–2.03)*	1.40(1.10–1.80)*
Female	448	151	1	1
Duration of unemployment				
< 1 year	705	246	1	1
≥ 1 year	275	193	2.01(1.59–2.54)*	1.56(1.21–1.99)*
Self-esteem				
High self-esteem	581	207	1	1
Low self-esteem	399	232	1.62(1.30–2.05)*	1.32(1.03–1.68)*
Social support				
Poor social support	425	262	2.11(1.45–3.08)*	1.98(1.34–2.93)*
Moderate social support	411	135	1.13(0.76–1.67)	1.05(0.69–1.58)
Strong social support	144	42	1	1
Current cigarette smoking				
No	823	313	1	1
Yes	157	126	2.11(1.61–2.76)*	1.21(0.85–1.73)
Current alcohol use				
No	778	268	1	1
Yes	202	171	2.46(1.92–3.14)*	1.86(1.33–2.59)*

\*= statistically significant (p-value < 0.05)

1 = Reference variable

Variables	Depression		COR(95%CI)	AOR(95%CI)
	No	Yes		
Current khat use				
No	714	271	1	1
Yes	266	168	1.66(1.31–2.11)*	0.98(0.71–1.33)
Current marijuana/cannabis use				
No	873	372	1	1
Yes	107	67	1.47(1.06–2.04)*	0.90(0.61–1.34)
* = statistically significant (p-value < 0.05)				
1 = Reference variable				

## Prevalence of depression among unemployed young adults

As indicated on the Fig. 1, the overall prevalence of depression among unemployed young adults in the present study was 30.9% (95% CI: 28.4%, 33.1%). Of the total unemployed young adults with depression, 249(17.5%) had mild depression. 158(11.1%) had moderate depression, and 32(2.3%) had severe depression (Fig. 2).

## Substance use among unemployed young adults

Both lifetime and current substance use was measured in our study by using ASSIST WHO tool. The overall rate of lifetime substance in our study was 44.7% (95%CL: 41.8%-47.4%). Of the total lifetime substance users; 34.5% were alcohol users, 30.9% were khat users, 18.2% were cigarette smokers, and 6.5% were illicit drug users (e.g. marijuana, cannabis) (Fig. 3).

On the other hand, the overall prevalence of current substance use in the present study was 38.8% (95%CL: 36.2%-41.3%). Of the total current substance users, 26.3% were alcohol users, 30.6% were khat users, 20% were cigarette smokers, and 12.3% were illicit drug users (e.g. marijuana, cannabis) (Fig. 4).

## Factors Associated with depression among unemployed young adults

During the bivariate logistic regression analysis, variables such as age, sex, duration of unemployment, self-esteem, social support, current cigarette smoking, current alcohol use, current khat use, current illicit drug use(e.g. marijuana, cannabis) were association with depression (had p-value less than 0.2 ) and entered into multivariate logistic regression analysis for further analysis. On the other hand, variables

such as educational level and marital status were not significant at level of significance and were excluded from further analysis.

In the multivariable logistic regression analysis, variables such as sex (being male), duration of unemployment, self-esteem, social support, and current alcohol use were statistically significant with depression among unemployed young adults, while there was no statistical difference between unemployed young adults with depression and those without depression, with respect to age, current cigarette smoking, current khat use, and current illicit drug (e.g. marijuana, cannabis) use.

Hence, Depression among unemployed young adults was 1.40 times higher among males as compared to females (AOR = 1.40, 95%CI: 1.10, 1.80). The likelihood of depression among unemployed young adults with long duration of unemployment ( $\geq 1$  year) was found to be 1.56 times (AOR = 1.56, 95%CI: 1.21, 1.99) as compared to those with short duration of unemployment ( $< 1$  year). Unemployed young adults with low self-esteem were 1.32 times (AOR = 1.32, 95%CI: 1.03, 1.68) more likely to develop depression as compared to those unemployed young adults with high self-esteem. The likelihood of developing depression among unemployed young adults with poor social support was 1.98 times (AOR = 1.98, 95%CI: 1.34, 2.93) more likely as compared to unemployed young adults with strong social support. Our study revealed that unemployed young adults with current alcohol use were 1.86 times (AOR = 1.86, 95%CI: (1.33, 2.59) more to develop depression as compared to those without current alcohol use (Table 3).

## Discussion

Our study revealed a high prevalence of depression in sample of unemployed young adults residing in Gedeo zone, southern Ethiopia. To the best of our knowledge, this is the first community-based cross-sectional study that has investigated the prevalence and determinants of depression among unemployed young people aged 18–30 years in Ethiopia by using the Patient Health Questionnaire-9 (PHQ-9). The prevalence of depression among unemployed young adults in the current study was 30.9%. Our finding was consistent with the findings of previous studies conducted in Greece 32.2% [22] and in USA 29% [21]. However, the prevalence of depression among unemployed young adults in the present study is significantly higher than the finding of systematic literature review and meta-analysis study conducted by Paul and Moser [17] that found the prevalence range of depression from 13–14% among unemployed individuals.

On the other hand, the finding of our study is lower than the finding of study done in Germany among 365 long-term unemployed individuals by using Hospital Anxiety and Depression Scale (HADS) which was 37% [52]. Another study conducted in Germany also reported the higher prevalence of depression (34.4%) among long-term unemployed people measured by using Patient Health Questionnaire-9 (PHQ-9) as compared to the result of our study (30.9%). Also the results of studies conducted in Spain (51.5%) [23], Korea (39.5%) [24] and Bangladesh (49.3%) [25] were higher than the findings of our study.

The reason for variation might be due to difference in sample size, as it was 365 in Germany, 244 in Spain, 901 in Greece, and 301 in Bangladesh, whereas it was 1419 in this study. The assessment instrument might also be the possible reason for the differences in the prevalence of depression among unemployed people. For instance, the previous studies conducted in Germany, Greece, and Bangladesh used Depression Anxiety Stress Scale (DASS-21) to assess depression, whereas our study used the Patient Health Questionnaire-9 (PHQ-9). The other explanation for the difference might be due to the type of data collection procedure that researchers used (interviewer administered versus self-administered) and the study settings (community based versus institutional based).

The present study identified factors associated with depression among unemployed young adults. Sex was identified as a significant variable, as men were 1.40 times more likely to experience depression relative to women. Our study finding is consistent with findings of previous studies that found unemployed men were more likely to be affected by depression [26, 27], but the finding of our study is inconsistent with those of previous studies that reported unemployed women exhibited higher rate of depression [28, 46, 52]. The reasons why unemployed men are more affected by depression than women might be due to unemployed man should experience stronger distress due to his failure to fulfill his central duty of his life- the role of family provider. In addition, masculine identity is intricately linked to having a job in most developing countries including Ethiopia and is severely threatened by unemployment related distress like depression. Furthermore, for women, on the other hand, work is seen as only one of several roles (e.g. the role of being wife and mother are assumed to be as important as work in women's lives). For example, Dew and Bromet[26] found that unemployment has a lesser impact on women which might be due to different gender roles with women valuing their jobs less and gaining more self-esteem from their family. Additionally, two main arguments based on the study conducted by Shamir[53] to explain the reason why depression is more common among unemployed men than women were; First, men are assumed to have a higher commitment to the work role than women, resulting in stronger distress when deprived of this role. Second, women are assumed to have an alternative role that can serve as a substitute to employment.

In our study, we found that the likelihood of depression among unemployed young adults with long duration of unemployment ( $\geq 1$  year) was found to be 1.56 times (AOR = 1.56, 95%CI: 1.21, 1.99) more likely as compared to those with short duration of unemployment ( $< 1$  year). Our finding is consistent with findings of previous studies[28, 29] that support the link between unemployment duration and poor mental health: the longer a person is unemployed, the worse mental health outcomes (e.g. depression). The possible explanation could be due the fact that unemployed young adults experience continued and more and more discouraging failures in job seeking and financial pressures that become stronger as time passes.

In the present study, unemployed young adults with low self-esteem were 1.32 times more likely to develop depression as compared to those with high self-esteem. This finding is supported by the findings of previous longitudinal studies conducted in United State of America [30, 31]. Several pathways have been proposed that explain why people with lower self-esteem might be at higher risk for depression. For

example, according to Beck's cognitive theory of depression, negative beliefs about the self, which are central to low self-esteem, would contribute to the development of depressive disorders[54].

The likelihood of developing depression among unemployed young adults with poor social support was 1.98 times more likely as compared to unemployed young adults with strong social support, which is in agreement with the findings of previous studies that found poor social support was strongly correlated with depression among unemployed young people [32–34]. There has been previous study that indicates social support has an important influence on the mental health of unemployed people. For instance, a population based case-control study on young people conducted in Sweden found that mental health was generally poor among unemployed persons with low social support from family and friends than among unemployed persons with higher social support[55]. A Relational regulation theory by Lakey and Orehek[56](A new approach to explain the link between perceived social support and Mental Health) found that poor mental health is stronger for people with low social support than for people with high social support.

Our study revealed that unemployed young adults who reported current alcohol use were 1.86 times more likely to develop depression as compared to those who did not reported current alcohol use. The finding of our study is supported by the evidences from two cohort studies conducted by Fergusson et.al[35, 36] who found alcohol abuse /dependence was most likely to lead to depression. The possible reason is that alcohol might be used as a self-medication strategy against distress or unemployment-related struggles—a way to deal with financial hardship, in turn, which increases likelihood of depression in this population.

Several strengths of this study need to be highlighted. First, our study is the first study to assess depression and its determinant factors among unemployed young adults in Ethiopia, which can be considered as strength. Second, our large sample which was recruited from Community sample with an excellent response rate can also be considered as strength. Third, we used standard tool that takes a non-judgmental and more acceptable approach to measure depression and other variables. Fourth, our data collection technique was performed by highly trained Psychiatry Nurse Professionals (BSc degree) in face-to-face technique (interviewer administered), minimizing the risk of misunderstanding questions that may occur in self-administered technique. On the other hand, this study has several limitations. First, our study used a cross-sectional study design that makes it difficult to determine the causality of the observed associations between depression and its determinant factors. Second, due to the sensitive nature of the study in terms of social stigma, the study participants may have underreported depression and some other variables such as substance use.

## Conclusions

The high prevalence of depression among unemployed young adults had been found to be high in Gedeo zone, Southern Ethiopia. The key factors that were associated with depression were being male, duration of unemployment, low self-esteem, poor social support, and current alcohol use. Therefore, our study suggest that Policy makers, program planners and other concerned bodies should establish appropriate

strategy for prevention, early detection and management of depression among unemployed young adults. Moreover, effective community based mental health problems prevention programs for unemployed young adults needs to be implemented in Ethiopia.

## Abbreviations

ASSIST: Alcohol, Smoking and Substance Involvement Screening Test; CI: Confidence interval; ILO: International Labor Organization; OR: Odds ratio; OSS-3: Oslo 3-item Social Support Scale; PHQ-9: Patient Health Questionnaire-9; RSES: Rosenberg Self-Esteem Scale; SNNPR: South Nations, Nationalities and Peoples' Region; SPSS: Statistical Packages for Social Sciences; WHO: World Health Organization

## Declarations

Ethics approval and consent to participate

Ethical approval was obtained from Institutional Review Board (IRB) of Dilla University, College of Medicine and Health Sciences. Letter of permission was obtained from each selected district and town administration of Gedeo zone, southern Ethiopia. Each unemployed young adult participated in the study was informed about the purpose, method, expected benefit, and risk of the study. Participants were also informed about their right not to participate or stop the interview at any time. Hence, informed verbal consent was obtained from the unemployed young adults who were involved in the study and participant involvement was on voluntary basis. Moreover, confidentiality of study participants was maintained by using codes rather than names.

Consent for publication

Not applicable

Availability of data and materials

Due to ethical issues and protection of confidentiality of the study participants, raw data cannot be provided. But, the summary data are available in the main document. When needed they are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

HM wrote the proposal, involved in study design, participated in data collection process, analyzed the data, and drafted the manuscript. KY and GA were involved in designing of the study and drafted the manuscript. All authors read and approved the final manuscript.

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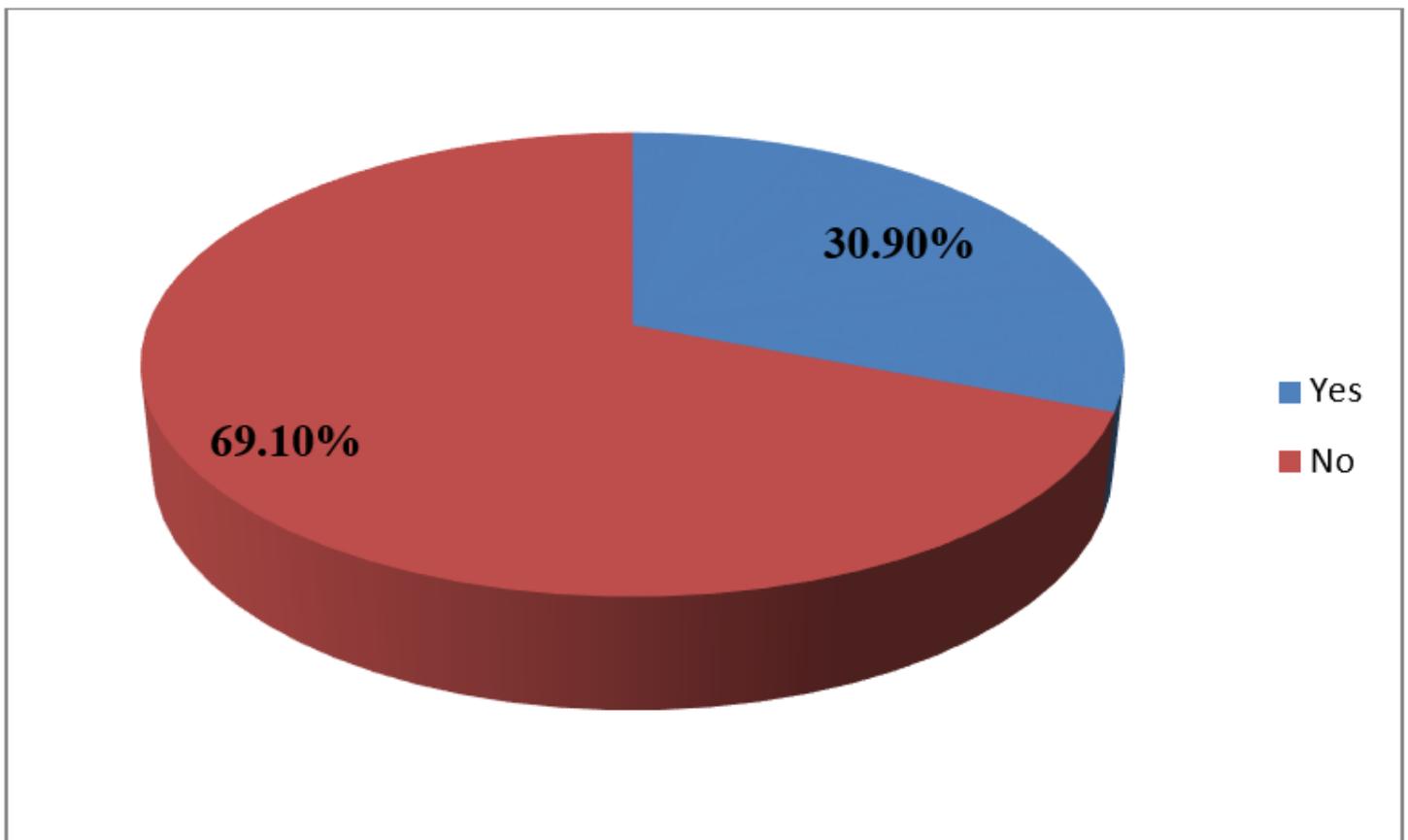
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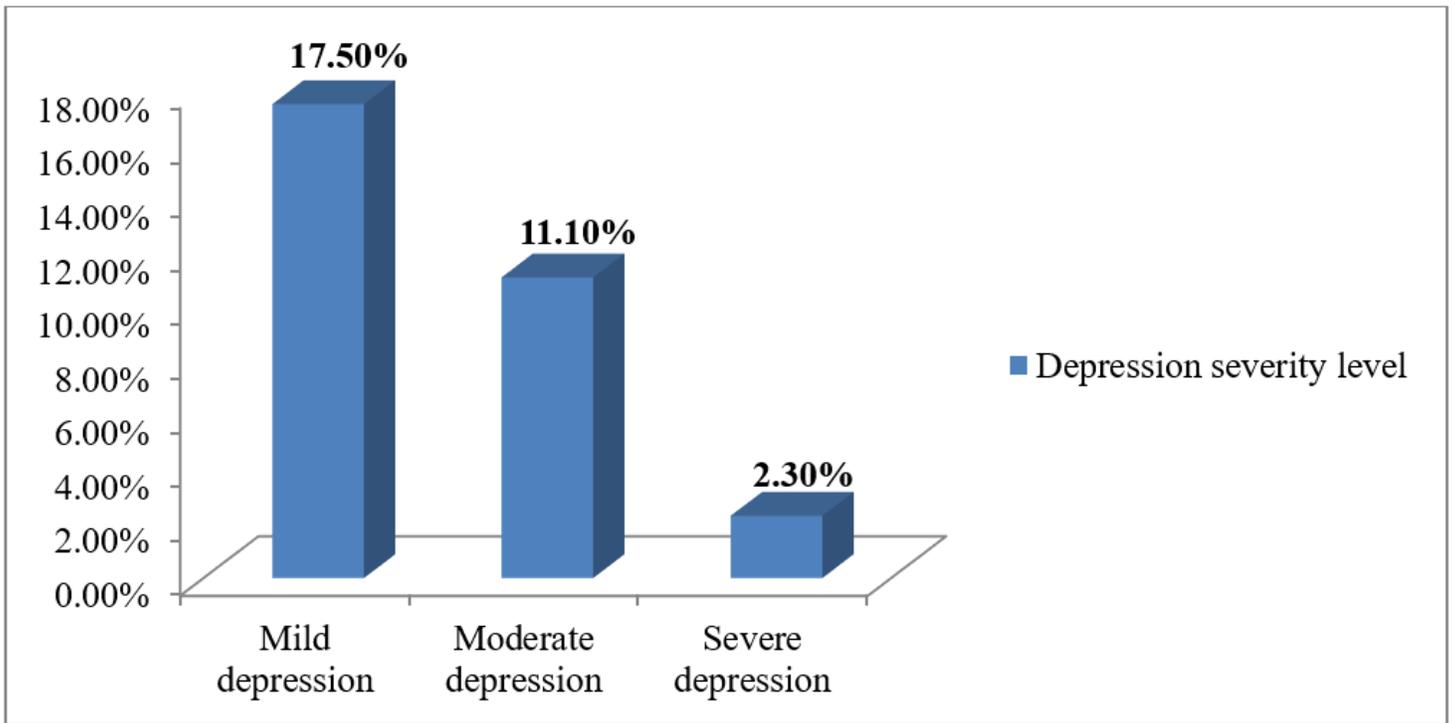
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## Figures



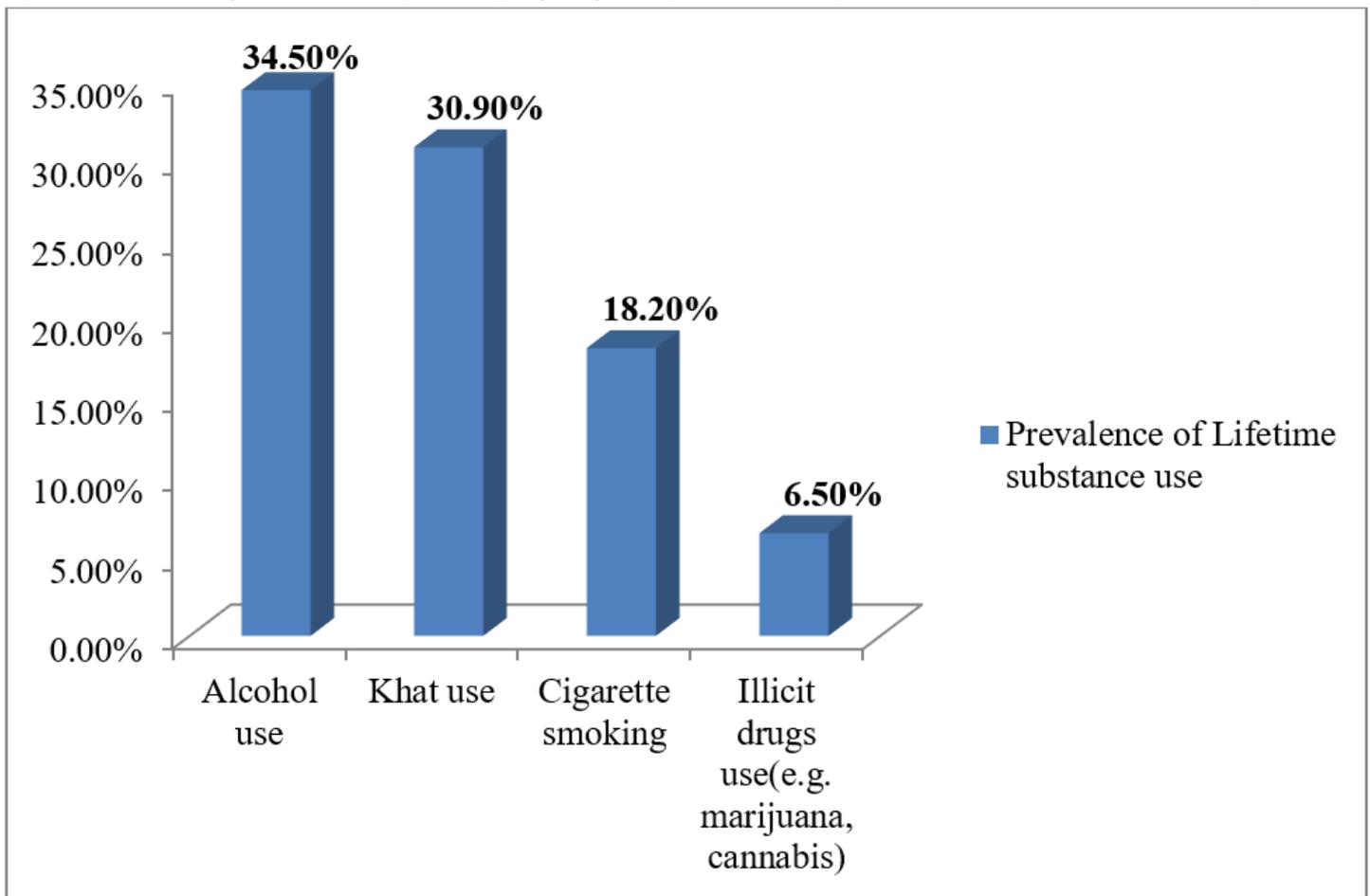
**Figure 1**

Prevalence of depression among unemployed young adults living in Gedeo zone, Southern Ethiopia, 2019.



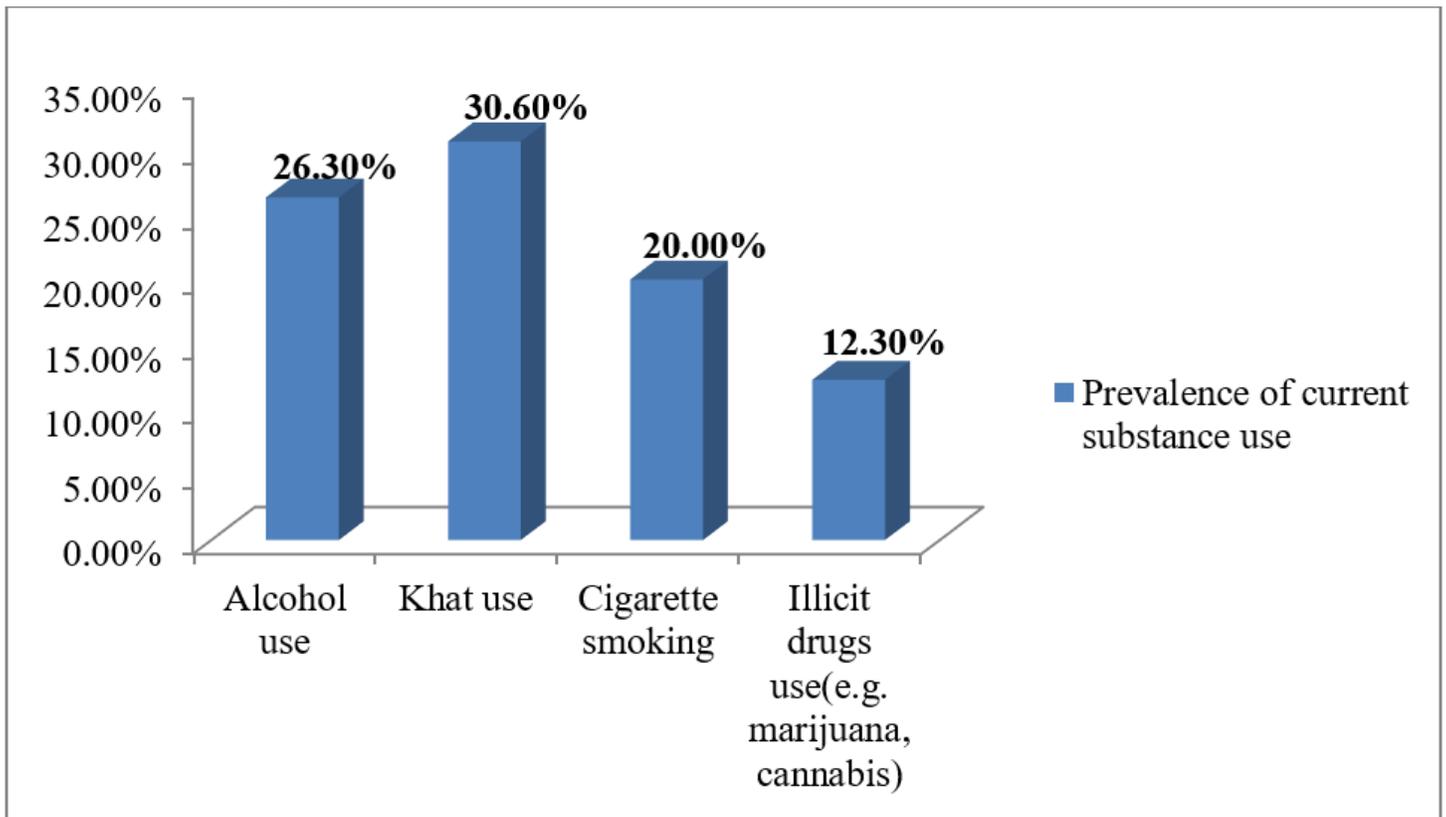
**Figure 2**

Depression severity level among unemployed young adults living in Gedeo zone, Southern Ethiopia, 2019.



**Figure 3**

Prevalence of lifetime substance by type of substance among unemployed young adults living in Gedeo zone, Southern Ethiopia, 2019.



**Figure 4**

Prevalence of current substance by type of substance among unemployed young adults living in Gedeo zone, Southern Ethiopia, 2019.