Prevalence of Depression and Associated Factors among Addis Ababa University Students, Addis Abeba, Ethiopia

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ABSTRACT

Introduction: Depression could affect the student's academic success and his future such as withdrawal from study. Dropout ratio was found two-times higher in first-year students compared to second or third year students. It also causes people all across the world to have feelings of sadness, helplessness, worthlessness, and guilt. One of the important reasons in the current study is lack of data on the extent of mental disorders especially in higher learning institutions.

Objective: to assess prevalence of depression and factors associated with depression among, Addis Ababa University, 6 kilo campus, regular first year students. Addis Ababa.

Method: A cross-sectional institutional-based study was conducted in Addis Ababa City from April 15 to May 15, 2003. The study used structured questionnaire and self administered Questionnaire- CES-D tool was used. By stratified sampling, 300 individuals were included in the study. And also pretest questionnaire also used to collect data. Data analysis was done using SPSS version 15.

Result: There were 314 students in 1st year undergraduate program. Of these 300 were present during the survey. There were 162 (54%) male respondents 138 (46%) female respondents in the study the mean and (SE) age of the students was 21.6, (± 0.13) years. Prevalence of depression was found 27.7% was found among students. A statistically significant higher rate of depression

Yetayale Berhanu was seen among female students (40.6%) than male (16.7%). [AOR 95%CI = 3.36 (1.88, 6.01)

Conclusion and Recommendation This study suggests that depression is a common Psychiatric problem in University student calls for public intervention to prevent more serious forms of depression this finding suggest that being female and older students suffer from high rate of depression.

Keywords: Depression, University Student, Occurrence, factor analysis

1. INTRODUCTION

1.1. Statement of the problem

The importance of mental health has been recognized by WHO since its origin, and is reflected by the definition of health in the WHO Constitution as "not merely the absence of disease or infirmity", but rather, "a state of complete physical, mental and social well-being" (28). The Global Burden of Disease (GBD) report of the World Health Organization (WHO) provides the best available evidence on the relative impact of health problems worldwide (12).

Depression is estimated to affect 340 million people globally (3). The prevalence of psychiatric disorders is reported to differ between countries and within countries, across various ethnicities (18). Most studies on depression are from the developed world and there are few studies from developing countries. The World Mental Health Survey Initiative carried out cross-national research in mental health, especially in developing countries (44). The prevalence of depression in a population based study conducted in urban Pakistan was 45.9% (5). While in rural Bangladesh, it was reported to be 29% and in a peri-urban clinic based study in Uganda, it was reported to be 6.1% (45). Research done in Stockholm, Sweden the overall response rate was 72.9% and 10.2% (5.7% men, 10.7% women) reported depression (9).

1.2. Depression and associated factors in higher institution

Depression is also common during entrance to the university. Especially, freshmen may perceive entrance to university representing a passage to a new life (22). Depression could affect the student's academic success and his future such as withdrawal from study. Dropout ratio was found two-times higher in first-year students compared to second or third year students.

Ethiopia, with a population of 80 million, has health service coverage of 61% mental health problem was mentioned in national health Policy of Ethiopia;

one of the important reasons is lack of data on the extent of mental disorders especially in higher learning institutions (24).

The finding would be significant evidence to prevent mental disorder and improve the qualitative of education for this University as well.

1.3. Literature review

According to WHO Global burden of disease 2001 33% of the years live with disability (YLD) are due to neuropsychiatry disorders in which including depression is one of four neuropsychiatry disorders of the forth leading to causes of years lived with disability. More than 150 million persons suffer from depression at any point in time (35).

According to a study done in Brazil institute Medical Universities, was 12.9%, significantly higher than in the general Population, Stockholm, Swede gave the Prevalence of depressive symptoms The overall response rate was 72.9%, and 10.2% (5.7% men, 10.7% women) reported depression. Younger age (< 30), female gender, immigration from outside of Europe, high workload, dissatisfaction with education, low self-efficacy, and conflicts between personal and college demands were associated with high prevalence of depression, (21). Another research done in West Indian University the result showed nearly 40% of students, scored in the clinically depressed range. Students in the December data collection had higher depression scores than those in the January wave (10). The research done in Brazil the result showed in Overall prevalence of depressive symptoms was 23.1%., 38.5% (25).

The research done in Vietnam revealed the prevalence of depression was 39.6% (39). Another research done in Pakistan, Karachi, also the result showed, a very high prevalence of depression, 70% was found among students. Majority of the students were females (36). According to the research done in Spanish University students, the prevalence of depression was 10.4%, and altered sleep was 78.9%. Depression was the more prevalent among Women than men (15). Another research done in University of Japan 20.7% were found to have had depression, the prevalence of depression was 10.2% among male and 28.4% among females (16).According to the research done in Turkish University students, the prevalence of depression symptoms increased to 32.1% among older students, 34.7% among student with low socio economic status, 31.2% among senior and 62.9% among student with poor school performance (2). The research done in Malaysians finding show that among education related issues failure in achievements 73.3%, due to the death of loved ones 63.73%, relation break up 58.6% and feeling of sad and guilt 73.67% are the most

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community prioritized cause of depression (20).Research done in Germany, Poland, Bulgaria and Denmark University students Result showed that depressives symptom were, more prevalent in Eastern European, thanWestern European countries. In Germany 26.7%, 22.8%, in Poland 41.5%, /27.3%. In Denmark 24.9%,/12.1%, in Bulgaria 42.9%, /33.8%for female and male students respectively(14).

Study conducted In Jimma University showed the prevalence of anxiety and depression which accounts 41.0 % and 23.0 % respectively (46).

The study sample was 59% female and 41% male. Mean BDI was 6.3 (SD 5.8). Overall prevalence of depressive symptoms was 23.1%. The following scale was developed by the Center for Epidemiologic Studies Radloff, 1977. This is a short, self-reporting scale intended for the general population (26).

According to the research done in china prevalence of depression was 24% by using CES-D tool, cut off point 16 (8).

Another research done in Jimma university prevalence of chat chewing was 30.8%. More males (33.0%) than females, Muslims (49.0%) than other religious groups, Tigers (42.9%) than other ethnic groups Male sex ($x2 = 4.01, P = 0.0319$) being Muslim ($x2 = 19.839, P = 0.0005$) were significantly associated with chat chewing. Smoking and alcohol intake also showed a statistically significant association with the habit of chat chewing. (47).

A cross sectional study conducted in Serilanka on 392 first year undergraduate students About 76% of medical and 60% of non-medical undergraduates reported elevated depressive symptoms ($p < .01$)(11).

a study done in rural Ethiopia as related to socioeconomic factors: a community-based study on women in reproductive age groups prevalence of depression among all women was 4.4%. After adjusting for common socio demographic characteristics, only marital status showed a significant association with depressive episode in terms of higher odds ratios (ORs) for divorced/separated women and widowed women than for not-married women (4.05 and 4.24, respectively (13).

1.4. Justification

Most research reveals the prevalence of depression among college and university is higher than the general population. Consequence of depression leads to a student; drop out of school, reduce academic performance, work place absenteeism decreased productivity, high suicide rates.
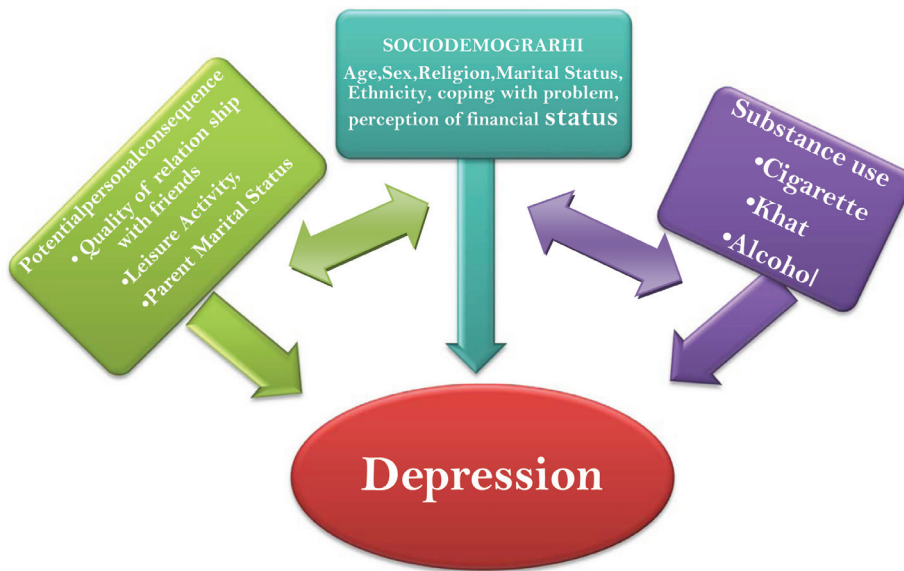
Figure1. Conceptual frame work of depression.

Assessing the current st atus of depression in University students at this moment is therefore highly important to fill the gap, to recognize and tackle the problem as earliest time as possible and to provides sufficient information as well.

More over, the result of this study will help policy makers, health managers and planners, to formulate national and local mental health policy, strategy, guidelines and action plan. In addition to this, it will also serve as base line data for further studies.

2. OBJECTIVES

2.1. General objective

- To assess prevalence of depression and associated factors among regular undergraduate first year students of Addis Ababa University, 6 kilo campus

2.2. Specific objectives

- To assess the prevalence of depression among regular undergraduate first year students of Addis Ababa University, 6 kilo campus.

- To identify factors associated with depression among regular undergraduate first year students of Addis Ababa University, 6 kilo campus.

3. METHOD

3.1. Study design, area and period

An institution based cross-sectional study was conducted in Addis Ababa University, 6 kilo campus from March 20 – April 20, 2011 to measure the prevalence of depression and associated factors among regular undergraduate first year students.

3.2. Population

Source population

- All students who were registered as first year regular undergraduate student in Addis Ababa University;6 kilo campus, 2011 academic year.

Study population

- All first year regular under graduate students, Addis Ababa University, 6 kilo campus.2011 academic year.
- Inclusion criteria and exclusion criteria:
- Inclusion criteria; all first year regular under graduate students, Addis Ababa University, 6 kilo campus.
- Exclusion criteria; students withdrawal from the school.

3.3. Sample size determination

In this study, sample size (n) was determined based on single population proportion (p) formula. Taking the prevalence of depression from previous study in Jimma University, this study assumed 23% prevalence to obtain the maximum sample size at 95 % certainty and maximum discrepancy of ± 5 % between the sample and the underlying population; an additional 15 % was added to the sample size as a contingency to increase power. Thus a minimum number of 273 students will be the required number in the study.

The required sample size was determined using the formula:

$\dfrac{Z^2 1-\Box\ /2 \times pq}{d^2}$ Where $Z^2 1-\alpha\ /2 \times pq$ = 1.96: is the critical value for the

9 α = 0.05: is the level of significance **d** = 0.05: is the absolute precision required **p** = 0.23 anticipated population (according the previous study) for

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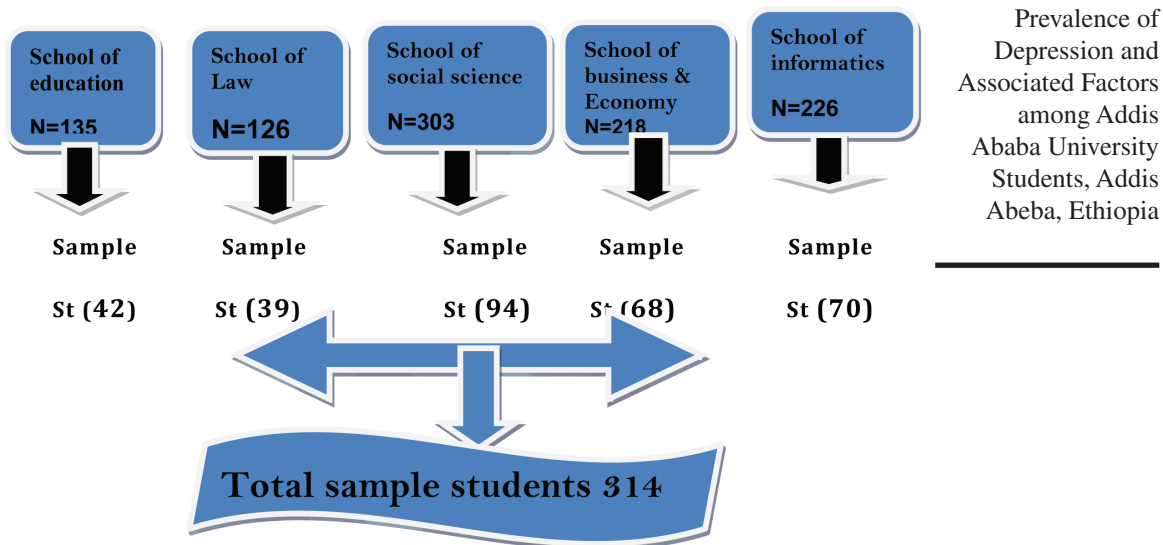| School of education N=135	School of Law N=126	School of social science N=303	School of business & Economy N=218	School of informatics N=226
Sample St (42)	Sample St (39)	Sample St (94)	Sample St (68)	Sample St (70)

Total sample students 314

Figure 2: Schematic presentation of sampling procedure

possible none response during the survey the final sample size was increased by 15% to n final = 273 +15% which is 314 for possible none response during the survey the final sample size was increased by 15% to n final = 273 +15% which is 314.

3.4. Sampling technique

Stratified random sampling method was used to select the study samples. First Schools were stratified and Students within each school further selected by simple random sampling technique using list of names obtained from University administration. Number of study subjects in each stratum determined by proportion to population size from each school of the University. This sampling procedure is presented schematically as follows:

3.5. Variables of the study

- Dependent variable
- Depression Status
- Independent variables
- Gender, Age, Financial status, Ethnicity, Marital status,
- Religion, sex
- Substance use

- Potential personal consequences,quality Relationship with friends, parent marital status and Leisure activity.
- coping with problem
- , financial status

3.6. Operational Definition

Depression; in this study, a disorder, marked by persistent sadness, discouragement, loss of self worth, and loss of interest in usual activities (26).

The CES-D used to measure depression. An overall CES-D score, the scores on the 20_above questions combined. The minimum and maximum score are 0.and 60 range from 0to 60 with cut-off point 16, the following classification is defined for depression;

Scores less than_16, = non depressive symptoms group

Scores are 16, or more = depressive symptoms group

Substance Use: Current users: when students use specified substance use in the last year.

Ever users: when students use specified substance even once in their life time.

3.7. Data collection procedures

Self administered (5%) pre-test was implemented prior to data collection among first year student in Dilla University. The purpose of the study was explained to the students before delivering questionnaire. After obtaining written consent, trained health professional instructors distribute the self administered questionnaires which have three parts. The first part contains socio-demographic information; the second part contains 20 items CES-D scale was developed by the Center for Epidemiologic Studies (26). and the third part contains substance use history. The 20 items CES-D questions are a standardized questionnaire and used in many previous oversea studies using a cut-off point of 16, but as to my knowledge no study conducted locally using this item.

3.8. Method of data quality and Analysis

The investigator trained data collection facilitators and supervisors. All data were checked for accuracy and the incomplete data were discarded. The data were intensively cleaned before analysis. Descriptive analyses were performed to investigate the distribution of our data. Bivariate and Multivariate analysis

was run to determine the relationship of independent variable with the outcomes variable. Odds ratio, 95% confidence intervals were reported to interpret our final model.

4. ETHICAL CONSIDERATIONS

Ethical clearance was obtained from University of Gondar and Amanuel Mental Specialized Hospital, Department of Mental Health. The necessary explanation about the purpose of the study was given and Informed consent obtained from the students. Confidentiality was maintained by omitting their name and personal identification.

5. RESULTS

5.1. Socio demographic characteristics of the respondent

A total of 314questionnaires were distributed and 300 were available for analysis giving a response rate 95.5%. Female students accounted for 46% (138 students), and males accounted for 54% (162 students). All of the respondents were between the age group of 17-28 years with the mean age of the students 21.6 ± 0.13 years. From the total study subjects 142 (47.3 %) were followers of orthodox Christian, while 73 (24.3 %) were Muslims, 33 (11 %) were protestants, and the remaining 39 (13 %) were other religion followers. As to the ethnic composition of the respondents 94 (31.3 %), were Amhara, 85 (28.3%) were Oromo, 71 (23.7 %) were Tigre, and 17 (5.7 %) were from Guragie ethnic groups, while the remaining 33(11 %) were from other ethnic groups such as Wolaita, Somalia and other ethnic groups. The other socio demographic characters of the study population are depicted in detail in table1

. Most of the students were fully supported by their family with 75.3% from sisters' brothers (16.7%) & some of them were partially supported by their relatives (8%). Coping with problem when facing problems 44% of students prayed 25.3 % talked to parents 24 % talked to friends & the remaining 5.3% were smoking. Quality of relation ship with friends very satisfied; satisfied, not satisfied were 28.3% 44.3% & 16%.respectively. Almost parents of students lived together 84.4% and remaining percentages with 8.3% and 6.1%, their parents separated &divorced. Students who choose listening music, Reading book in free time and students who went out with friends were 21.7%, 28.3% and 25.2% respectively. Only 21.7%of play sport. Besides 3.5% students sleeping & some complained that they did not have free time.

Table 1: Description of the socio demographic characteristics in Addis Ababa university regular undergraduate first year students (n = 300), April 2011.

VARIABLES		Frequency	Percentage
sex (n = 300)	Male	162	54
	Female	138	46
Age (n = 300) Mean	< 19	148	49.3
	20-24	143	47.7
	>25	9	3
Schools	Social science	90	30
	Informative	66	22
	education	40	13.3
	law	38	12.7
	Business	66	22
Mental illness in the Family member	yes	14	4.3
	no	308	95.7
Relation ship with Friends	Very satisfactory Satisfactory	92	28.6
	Not satisfactory Other	142	44.1
		50	15.5
		38	
			11.8

5.2. Substance use history of the respondents

As illustrated in table 2 out of the total 300 study subjects 75 (25%) were using chat in the last 12 months period, and 95 (31.7 %) had practiced chat chewing at least once in their life time. 139 (46.3 %) of the respondents were drinking alcohol in the last 12 months period, and 59 (19.7 %) had used alcohol at least once in their life time. 47 (15.7 %) of the respondents were found smokers in the last 12 month period. Students with history of substance use were asked for reasons to use. Overall, the major reasons reported include; to increase work/ academic performance 64 (21.3%), due to irritability 33 (11%), due to work load 25(8.3%), and others 178 (59%) answers due to peer influence, to get relief from tension. Increasing work/academic performance was the top reason (64) among chat chewers.

5.3. Prevalence of depression among regular undergraduate first year students

The overall prevalence of depression among 1st year Addis Ababa University students was found 27.7%. Higher prevalence of depression was observed

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Table 2: Distribution of substance use among regular under graduate students, Addis Ababa University, 6 kilo campus, central Ethiopia, April, 2011

Type of substance	Last 12 months history; number (percent)	Everusers history; number (percent)
Khat use		
Users	75 (250)	95 (31.7)
Non users	225(75)	205 (68.3)
Alcohol use		
Users	139(46.3)	59(19.7)
Non users	161 (53.7)	241 (80.3)
Tobacco use		
Users	47(15..7	
Non user	253(84.3)	

among females. Prevalence of depression among students' of education, social science, informatics, law, and business was 32.5%, 30%, 28.8%, 26.3%, and 21.2% respectively and also Prevalence of depression related to perception of financial status was more than enough, sufficient, nearly sufficient, not enough was 26.5%, 30.7%, 21.2% and 27.4% respectively. The prevalence of depressive symptoms among students older than 25 year of age was 55.1%.

Prevalence of depression with in schools among regular undergrad uate students, April 2011
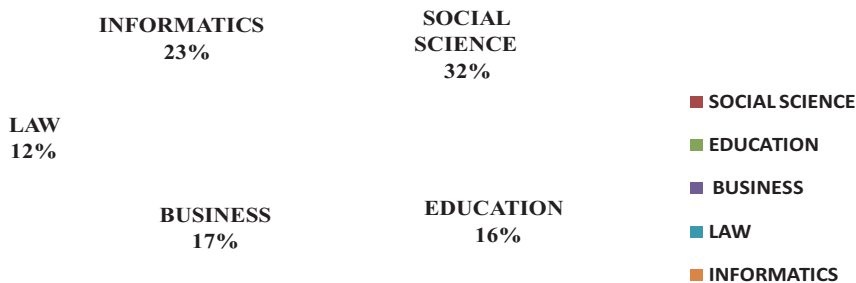
5.4 Factor associated with Depression

After controlling all variables, the final model consist 3 variables which contributed to depression outcome significantly with p-value < 0.05 are shown in table 4,

The observed association at p-value< 0.05 between depression and the following variables during bivariate analysis was fail to resist in multivariate analysis with P-value > 0.05 and CI does not include. There was statistically significant difference in depression prevalence between students age with p-value $= 0.039$ showing generally decreasing trend of depression prevalence with decreasing age. There was no statistically significant difference in prevalence of depression among students with different religions.

A statistically significant higher rate of depression was seen among female students (40.6%) than male (16.7%). [AOR 95%CI $= 3.36$ (1.88, 6.01), P $= 0.00$]

There was no statistically significant difference in association between facing problem and depression.

The study also showed that Addis Ababa University students of depression was no statistically significantly associated with students marital status.

And also no statistically significant depression was observed among students who reported to have history of alcohol drink at least once in life (31.9%) than those who did not (13.9%).

6. DISCUSSION

A cross-sectional study was carried out among 300 first year students to find out the prevalence of depression and its related factors

Prevalence of depression among the first year students in Addis Ababa University was 27.7%. This finding was almost similar with the one that is reported from Jimma University which was 23. %. (14). The prevalence of depression among first year students of 6 kilo campus according to this study was higher than some institution based studies conducted using the same instrument; in Spanish university which was 10.4 % (15), and in Mario alel, Medical Universities having prevalence rate of 12.9 % (21). But the study found that the levels of depression prevalence among Addis Ababa University students was lower than the prevalence detected at different time in other institution based studies using the same instrument; prevalence of depression among serilanka medical students76 %.(11) and prevalence of depression in

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Table.4: Shows adjusted OR with 95% CI and distribution of depression prevalence

VARIABLE	DEPRESSION			
	YES	NO	COR 95%CI	AOR 95%CI
Age				
≤19	41(27.1)	107(72.3)	1	1
20-24	37(25.9)	106(74,1)	0.91(10.54,1.53)	1.17(0.64,2.14)
≥25	5(55.6)	4(44.4)	3.26(0.84,12.7)	5.01(1.08,23.2)
Sex				
Female	56(40.6)	82(59.4)	3.42(2.0,5.83)	3.36 (1.88,6.01)1
Male	27(16.7)	135(83.3)	1	1
Finance support				
My parents	68(30.1)	158(69.9)	1	1
My brother/sister	11(22)	39(78)	0.66 (0.312,1.277)	0.74(0.32,1.68)®
Relatives	4(16.7)	20(83.3)	0,53 (0.193,1.459)	0.39(0.1,1.5)®
Having Boy friend/girl friend			1	1
Yes	18(19.1)	76(80.6)	0.51 (0.28,0.93)	0.6(0.3,1.19)®
no	65(31.6)	141(68.4)		

	DEPRESSION			
	YES	NO	COR 95%CI	AOR 95%CI
What do you often do in your time				
Reading	30(34.9)	56(65.1)	1	1
Playing sport	16(25)	48(75)	0.62(0.3,1.27)	0.58(0.26,1.3)®
Go out with friends	16(20.8)	61(79.2)	0.49(0.24,0.99)	0.65(0.29,1.45)
Listening music	16(25.4)	47(74.6)	0.64(0.31,1.32)	0.71(0.31,1.62)
Other	5(50)	5(50)	1.87(0.5,6.96)	2.9(0.6,14.2)
Have you ever used alcohol drinks in your life yes	34(24.5)	105(75.5)	1	1
no	49(30.4)	112(69.6)	0.74(0.44,1,24)	0.63(0.35,1.15)®
What do you do when facing problems				
Talk with parent	17(21.3)	63(78.8)	1	1
Talk with friends	23(29.5)	55(70.5)	1,55(0.75,3.19)	2.26(0.97,5.29)®
Praying	35(29.4)	84(70.6)	1.54(0,79,3.0)	1.88(0.88,4.03)
Smoking/drinking	7(36.8)	12(63.2)	2.16(0.74,6.34)	3.36(0.99,11.4)
Other	1(27.7)	3(75)	1.24(0.12,12.64)	1.92(0.15,23.78)

Vietnam which was 39.6%. This may be better explained due to the sample size difference and socio-demographic background of participants can also be a contributor in this regard.

The prevalence of depression in this study was higher than institutional based studies conducted in rural community of Ethiopia which was 4% (13). This could be as a result of competitive and stressful academic life and environmental factors such as separation from family members and any problem arise from adolescent.

The study found that statistically significantly different association between rate of depression prevalence and sex of study participants. Female students are at 3.36 times more likely to develop depression than male students. This was in line with other studies done in Africa and Ethiopia that reports an association between depression and female sex (13). This could be explained by: small sample size, low social status, legal and/or economic discrimination, the affective nature of their response to stressors, hormonal changes and contraceptives have been incriminated as possible causes for the higher prevalence of depression among women (4, 36).

There observed statistically significant association between different age groups according to the study result showing higher prevalence of depression among those above 25 years of age compared to these below 19 years old. This may be due to increased social related stressors like increased responsibilities

Marital status, leisure activity, substance use, ethnicity, and religion were not significantly associated with depression in this study whereas; strongly significant association was found on study conducted in Jimma University (14) between substance use and depression. This could be different sample size and different socio-demographic background of the study participants.

Strength of the study

Use of standardized tool, Center of Epidemiologic Studies' (CES-D) which was designed to screen (identify) major symptoms of depression.

Limitations of the study

The CES-D as a tool for screening only limit in depressive measurement that requires a strictly clinical diagnosis and related to many factors as family and personal history which could not determine accurately in this cross-sectional study design. While filling self-administered questionnaire respond can be influenced by others There are some limitations to use reference data as the base line the previous study about mental health problems are not available

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so finding could not compare with the national data or some other different depression measurement because of time and budget constrain, and lack of population based data to support our results and compare our findings with the general population.

Since this was a cross sectional study, it is difficult to draw conclusions about the causal relationship.

Problem of not included variables is also a factor in the present study. Examples include the relationship between other stress inducers like –negative life events, academic factors, personal factors and environmental factors.

CONCLUSION

- The overall prevalence rate of depression among university student was found to be high.
- Statistically significant higher rate of depression were observed among female students.
- And also statistically significant higher rate of depression were observed among those 25 and above years of age.

RECOMMENDATION

- Health education is needed about mental illness and coping mechanisms among first year university students.
- Further study is needed to know about the impact of depression on academic performance among university students.

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