

Substance use among university students in Ethiopia: a systematic review and meta-analysis

Solomon Teferra^{1,2}

Abstract

Background: Problems arising from psychoactive substance use are among the major health and social challenges facing humanity across the globe. Young people in higher learning institutions are a particularly vulnerable group in terms of substance use, and Ethiopia is no exception. In fact, the problem is believed to be on the rise, and has become a source of concern for various stakeholders.

Aim: To review the prevalence of substance use among university students in Ethiopia using reports from different institutions published over a 10-year period.

Methods: Search of the literature on substance use reported from 2007 to 2017. Web resources searched included PubMed, PsychINFO, AJOL and other relevant databases using various search terms, including: substance, alcohol, khat, tobacco, drugs, substance AND college, university, higher learning institution AND Ethiopia. The search strategy was organized using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses method. A systematic review and meta-analysis was conducted.

Results: The search yielded a total of 97 articles. Ninety four were retrieved based on the title review, of which nine were included for full-text review. A further two were retrieved after reviewing the references used in the nine articles, and a further five were retrieved from a search of gray literature. A total of 16 articles were included in the review. Almost all studies reviewed reported a high level of substance use among university students in Ethiopia. Alcohol, tobacco and khat were the substances most commonly used by the university students. The current prevalence for drinking alcohol was 26.65% (CI: 25.73-27.56, range: 9.3%-54.9%); for smoking tobacco it was 6.83% (CI: 6.29-7.37, range: 1.8%-51.1%); and for khat chewing it was 13.13% (CI: 12.53-13.72, range: 2.3%-62%). Although the prevalence of these substances was reported to be high, only few of the studies reviewed looked at the reasons for use which were very diverse, and the adverse consequences on the students, such as the impact on students' academic performance, rates of absenteeism, and cumulative grade point averages.

Conclusion and recommendation: The studies showed that students in Ethiopian higher learning institutions reported high levels of substance use, especially alcohol, tobacco and khat. Adverse impacts on students' academic performance were observed. This finding warrants the attention of policy makers to design preventive, counseling and rehabilitative programs for these students. Further well-systematized studies that look at diverse problems associated with substance use are recommended. [*Ethiop. J. Health Dev.* 2018;32(4):243-255]

Key words: Substance, alcohol, khat, tobacco, university students, Ethiopia

Background

Ethiopia is a land-locked country situated in what is commonly known as the horn of Africa. It has a population of more than 100 million, the second largest in Africa after Nigeria (1). The population of the country is mainly composed of young people; nearly 65% of the population is below the age of 25 (2). According to a recent World Bank report, the country has registered remarkable economic progress in the past decade, reducing absolute poverty and creating educational opportunities for its youth (3). The number of higher learning institutions has increased exponentially. The country had only two universities before 2000; currently, there are more than 40 public universities and hundreds of colleges, both public and private. These universities and colleges cater for the education of hundreds of thousands of students (4). The rapid expansion of higher education has created concern about the quality of education and the challenges the students face (5). Among the major concerns is the high prevalence of substance misuse among students at higher learning institutions, and the adverse impacts of misuse on graduates.

In Ethiopia, the substances most commonly misused are alcohol, khat and tobacco. Cannabis is becoming more common in urban areas, and at-risk populations

such as street children engage in inhalant use, including benzene and glue sniffing (6). There has been a substantial increase in the production of khat, a psychoactive stimulant, that has doubled in less than 10 years (7). The production of beer has increased 10-fold since 2000, with massive investments from European multinational breweries (8). Tobacco production has also increased substantially; the country is considered a 'ripe market' by a Japanese tobacco company that recently bought a major share in the cigarette manufacturing company previously owned by the Ethiopian government (9). This rapid increase in beer production was attributed to improvement in the economy of the country and demand from the growing middle class (10), although the youth remain the major target.

Substance misuse and associated adverse health and social consequences are a universal problem affecting humanity. Most people start using substances at a young age, specifically during late teenage years, usually when joining college (11). Rohde and colleagues demonstrate that substance use during teenage years is "associated with numerous functioning difficulties at age 30, some of which appear to be related to recurrent substance use disorder, co-morbid

¹ Department of Psychiatry, Addis Ababa University, email: solomon.teferra@gmail.com/
solomonteferra@aau.edu.et

² Department of Epidemiology, Harvard University, Boston, USA, email: teferra@hsph.harvard.edu

adolescent disorders, or functioning problems already evident in adolescence” (12).

University students constitute a high-risk group for engaging in risky behaviors, such as smoking, heavy alcohol drinking and illicit substance use (13-15). Several factors contribute to the initiation of substance use by college students. Peer influence is reported to be one of the major contributing factors for use by college students (16); newly gained freedom is also reported to be an important factor (17). A third factor is the stress experienced by students as they try to cope with their new environment, which predisposes them to substance use and other risky behaviors (18-19).

Although there is no nationally representative study involving students at higher learning institutions in Ethiopia, there are many studies by different institutions which report the prevalence of substance use. The problem is believed to be on the rise, and it has become a source of concern for various stakeholders, especially due to its adverse impact on students' education and wellbeing, as well as the future of the country, which largely depends on her youth.

Aim: The aim of this review is to present the main findings from the different reports carried out at different higher learning institutions in Ethiopia, and pool the findings using meta-analysis. The findings are expected to provide an overall picture of substance use among students at Ethiopian higher learning institutions. It will also serve as baseline data for planning more rigorous studies and designing interventions, including prevention, counseling and rehabilitation.

Methods

Article selection: A web search of the literature published in English was conducted using different search terms, such as substance use, substance misuse, alcohol use, khat use, tobacco smoking, AND higher institutions, colleges, universities, AND Ethiopia, using

databases including PubMed, Psychinfo, AJOL, Directory of Open Access Journals and Google Scholar., A search of local university library databases was also conducted for gray literature. The systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline (20).

Inclusion criteria: All quantitative studies that reported any substance (khat, tobacco and alcohol, as well as cannabis and other substances) use/misuse/abuse in any higher learning institutions in Ethiopia from 2007 to 2017.

Exclusion criteria: Substance use/misuse/abuse reported involving high school students; qualitative studies; studies published before 2007 and after 2017. The reports almost exclusively focused on the three licit substances in Ethiopia: alcohol, khat and tobacco. Almost all studies focused on reporting use in terms of 'lifetime' (defined as use by the participant at least once in their life) and 'current use' (mostly use in the past month prior to data collection, although some studies used the past three months).

Organization and scope of the data: Although most reports put together the three substances of interest, in this review, for ease of presentation, each substance was presented separately. When available, both 'lifetime use' and 'current use' were presented. To make use of existing data, the minimum requirement was the presence of a report of at least 'lifetime' use. The review was restricted to reports covering the period 2007 to 2017, to give more relevance to the current situation, and for the purpose of planning realistic interventions.

Analysis methods: Due to the heterogeneity of the estimates, the prevalence of lifetime and current use of alcohol, tobacco and khat were pooled using a random effects model (21). A narrative synthesis of the studies was also presented (22).

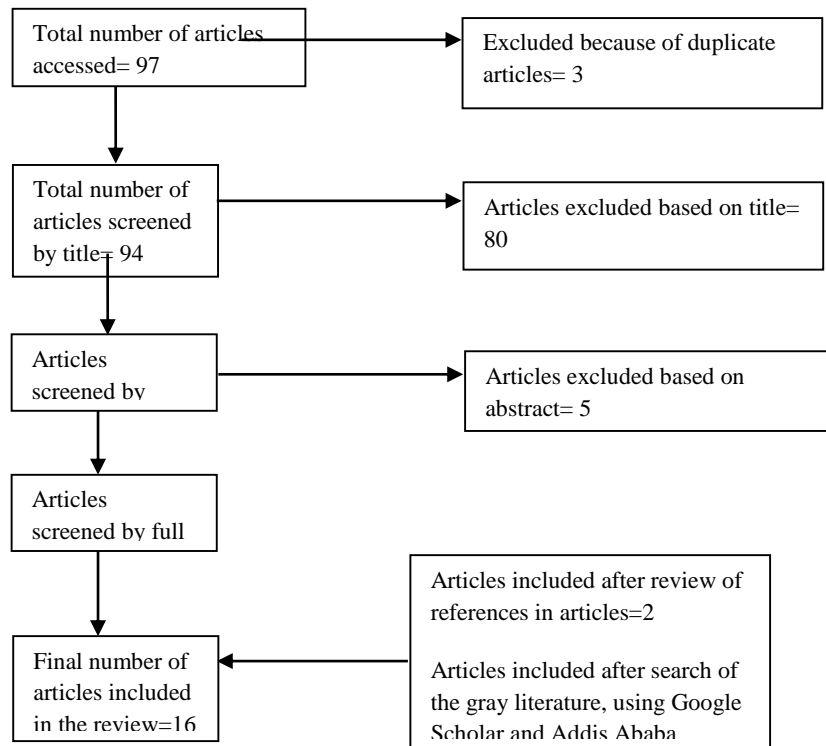


Figure1: Study selection process

Results

Article selection: The retrieval process was conducted using the PRISMA guideline. The initial search yielded a total of 97 articles. Ninety four articles were retrieved based on the title review, of which nine were included for full-text review. And two more articles were retrieved from reviewing the references used in the nine articles, and five from a search of gray literature. A total of 16 articles were included in the review (see Figure1).

Characteristics of the studies: Most of the studies reported prevalence rates for lifetime and current use of the three substances, namely alcohol, khat and tobacco. Some studies did not report on gender differences or lifetime use, reporting only the total current prevalence rates. Three studies reported the adverse impact of khat on academic performance. None of the studies reported on the impact of substance use on mental health, physical health or social wellbeing.

Findings: Five studies reported only current alcohol drinking, tobacco smoking and khat chewing (23,27,28,32,36); eight studies reported only the total prevalence of alcohol drinking, tobacco smoking and khat chewing without gender differentiation (23,26-28,32-34,36). One study reported only alcohol and khat use (30), and another study reported khat use only (38). Studies which reported gender-specific prevalence consistently reported higher rates among males for all three substances.

Of the studies which reported lifetime prevalence, the overall prevalence for alcohol drinking was 44.01% (CI: 42.76-45.27, range: 25.1%-69.7%); the lifetime

prevalence for tobacco smoking was 12.30% (CI: 11.41-13.19, range: 7.9%-22%); and the lifetime prevalence for khat chewing was 24.93% (CI: 24.04-25.82, range: 9.2%-48.7%).

The current prevalence for alcohol drinking was 26.65% (CI: 25.73-27.56, range: 9.3%-54.9%); tobacco smoking was 6.83% (CI: 6.29-7.37, range: 1.8%-51.1%); and khat chewing was 13.13% (CI: 12.53-13.72, range: 2.3%-62%). Details of the findings from different higher learning institutions for alcohol, tobacco and khat are presented in Tables 1 to 3.

Factors associated with substance use: Peer pressure was the most common factor associated with substance use reported by many of the studies (23-25, 27, 28, 30, 33, 34). Other factors included: length of stay in university (23,24); having family members who drink alcohol (25,30); experiencing pleasure (23,29,34,35); coping with the challenges of life; as part of traditional practices, especially for students from the eastern part of Ethiopia (23); getting relief from stress and depression (24,26,29,35); keeping alert while reading and to increase performance (23,28,35); lacking sufficient alternative means of recreation in the university campus (27); easy availability of substance around the university campus (27); using alcohol and cigarettes as a means to dampen overstimulation from khat (27); being married (29); living alone (30); having high income (32); academic dissatisfaction (34); having pocket money (37); living off campus (38).

Impact of substance use on students: Some studies looked at the adverse impact of substance use, mainly khat, on students. The identified problems included

increased absenteeism from class, loss of interest in their daily activities, and deterioration in their academic performance, manifesting as failures in

examinations or declines in students' cumulative grade point averages (CGPAs) (22,29,30).

Table1: Alcohol drinking among students at higher learning institutions in Ethiopia

Author(s) (year)	Study design	Sample size(included/ calculated)	Setting (participants)	Overall prevalence						Remarks
				Lifetime use (%)			Current use (%)			
				Male	Female	Total	Male	Female	Total	
Teshome and Gupta, 2017 (23)	Cross-sectional	69/92	Adama University	---	---	---	---	---	26.1	Mixed method; only 69 undergraduate students participated; sampling method not described; representativeness is questionable.
Deressa and Azazh, 2011 (24)	Cross-sectional	622/632	Addis Ababa University School of Medicine	35.4	22.4	31.4	11.3	5.1	9.3	Representative sample; undergraduate students; lowest prevalence rates of all studies; peer pressure was an important factor.
Gebreslassie <i>et al.</i> , 2013 (25)	Cross-sectional	756/764	Aksum University	44.4	20.5	34.5	41.9	19.9	32.8	Sample size representative; undergraduate students; most common reasons for use were reported to be to help with reading, relaxation and relief of stress.
Birhanu, 2014 (26)	Cross-sectional	346/364	Debre Berhan University	---	---	62.7	---	---	44.2	MA thesis; only total prevalence was reported.
Kumburi <i>et al.</i> , 2017 (27)	Cross-sectional	915/1,239	Dire Dawa University	---	---	---	57.3	49.8	54.9	Representative sample but high non-response rate; all departments; only current alcohol use reported.
Mamo <i>et al.</i> , 2013 (28)	Cross-sectional	682/682	Gondar University	---	---	---	---	---	41.0	Mixed method; only total current use reported.
Tesfaye <i>et al.</i> , 2014 (29)	Cross-sectional	1,022/1,040	Haramaya University	53.8	38.8	50.2	23.1	10.2	20.0	Highest prevalence in 3 rd year students. Some religions were reported to have protective effect. Married and depressed had higher use.
Kassa <i>et al.</i> , 2016 (30)	Cross-sectional	479/590	Hawassa University	52.4	31.2	48.7	30.9	23.4	29.5	Only alcohol and khat use were reported.
Asgedom, 2017 (31)	Cross-sectional	392/422	Jigjiga University	43.8	41.6	41.6	---	---	22.4	Doctoral thesis.
Meressa <i>et al.</i> , 2009 (32)	Cross-sectional	239/248	Jimma University	---	---	---	---	---	36.4	Alcohol use was reported to be negatively associated with CGPA.
Teferi, 2011 (33)	Cross-sectional	601/662	Mekelle University	---	---	69.7	---	---	41.1	MPH thesis; only total prevalence was reported.
Hagos <i>et al.</i> , 2016 (34)	Cross-sectional	271/271	Queen Sheba University College, Mekelle	---	---	25.1	---	---	12.0	Report from private higher learning institution.
Ahmed, 2013 (35)	Cross-sectional	425/452	Rift Valley University	50.0	34.8	42.1	23.0	14.9	18.8	Adama campus; conference proceedings report from private higher learning institution.
Mekonnen <i>et al.</i> , 2017 (36)	Cross-sectional	725/747	Wolaita Sodo University	---	---	---	---	---	24.7	11.3% had problematic alcohol use measured using Alcohol Use Disorders Identification Test (AUDIT).
Adere <i>et al.</i> , 2017 (37)	Cross-sectional	655/730	Woldiya University	37.7	22.9	33.1	31.5	19.9	27.9	Multistage sampling method used- representative.

Figure2: Current prevalence of alcohol drinking among students at higher learning institutions in Ethiopia

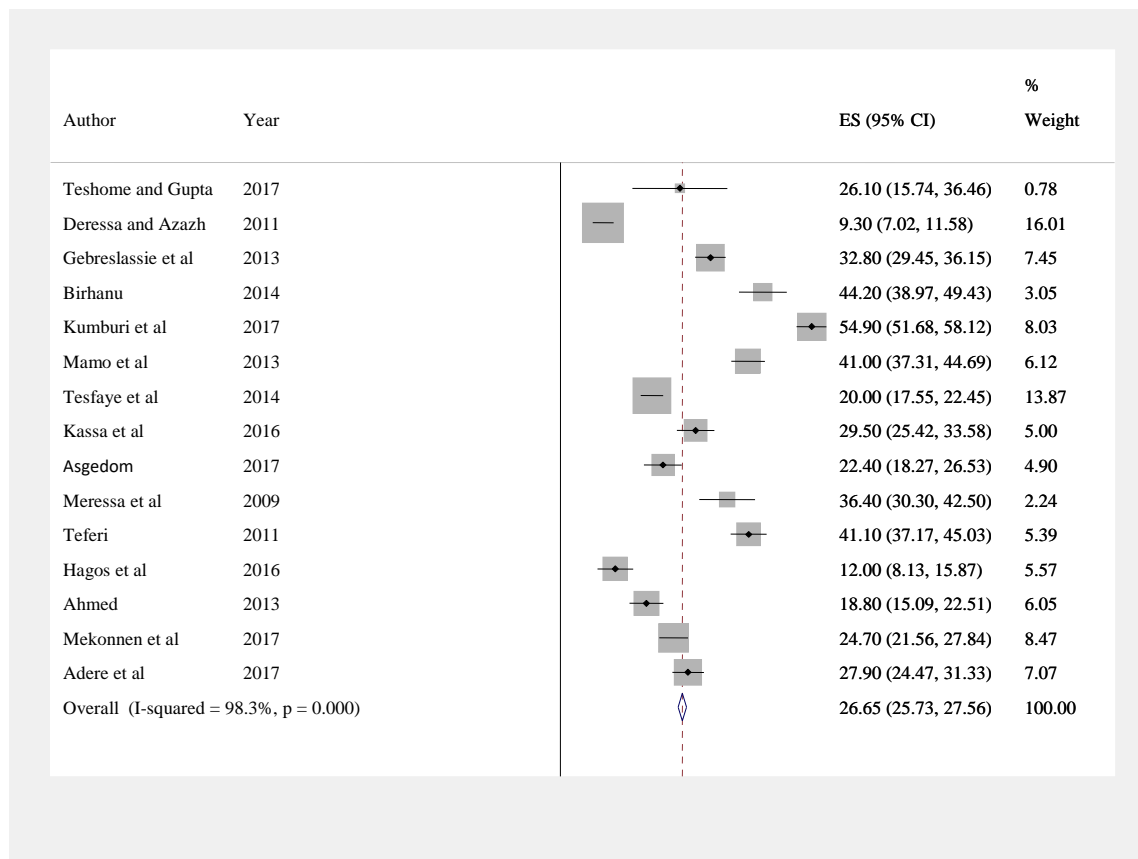


Table- 2: Tobacco Smoking Among Students of Higher Learning Institutions in Ethiopia

Author(s) (year)	Study design	Sample size(include d/ calculated)	Setting (participants)	Overall prevalence						Remarks
				Lifetime use (%)			Current use (%)			
				Male	Female	Total	Male	Female	Total	
Teshome and Gupta, 2017 (23)	Cross-sectional	80/92	Adama University	---	---	---	---	---	51.1	Mixed method; only 69 undergraduate students participated; sampling method not described; representativeness is questionable.
Deressa and Azazh, 2011 (24)	Cross-sectional	622/632	Addis Ababa University School of Medicine	10.6	4.6	9.0	2.3	0.5	1.8	Representative sample; undergraduate students; lowest prevalence rates of all studies; peer pressure was an important factor.
Gebreslassie <i>et al.</i> , 2013 (25)	Cross-sectional	756/764	Aksum University	13.7	3.5	9.5	13.3	3.5	9.3	Sample size representative; undergraduate students; most common reasons for use were reported to be to help with reading, relaxation and relief of stress.
Birhanu, 2014 (26)	Cross-sectional	346/364	Debre Berhan University	---	---	19.6	---	---	14.7	MA thesis; only total prevalence was reported.
Kumburi <i>et al.</i> , 2017 (27)	Cross-sectional	915/1,239	Dire Dawa University	---	---	---	45.5	32.2	41.2	Representative sample but high non-response rate; all departments; only current alcohol use reported.
Mamo <i>et al.</i> , 2013 (28)	Cross-sectional	682/682	Gondar University	---	---	---	---	---	4.0	Mixed method; only total current use reported.
Tesfaye <i>et al.</i> , 2014 (29)	Cross-sectional	1,022/1,040	Haramaya University	25.4	11.4	22.0	13.0	3.8	10.8	Highest prevalence in 3 rd year students. Some religions were reported to have protective effect. Married and depressed had higher use.
Asgedom, 2017 (31)	Cross-sectional	392/422	Jigjiga University	23.1	6.1	17.4	---	---	12.5	Doctoral thesis.
Meressa <i>et al.</i> , 2009 (32)	Cross-sectional	239/248	Jimma University	---	---	---	---	---	21.3	Tobacco use was reported to be negatively associated with CGPA.
Teferi, 2011 (33)	Cross-sectional	601/662	Mekelle University	---	---	17.5	---	---	11.7	MPH thesis; only total prevalence was reported.
Hagos <i>et al.</i> , 2016 (34)	Cross-sectional	271/271	Queen Sheba University College, Mekelle	---	---	11.4	---	---	5.0	Report from private higher learning institution.
Ahmed, 2013 (35)	Cross-sectional	425/452	Rift Valley University	16.7	1.8	8.9	6.4	0.9	3.5	Adama campus; conference proceedings report from private higher learning institution.
Mekonnen <i>et al.</i> , 2017 (36)	Cross-sectional	725/747	Wolaita Sodo University	---	---	---	---	---	5.7	
Adere <i>et al.</i> , 2017 (37)	Cross-sectional	655/730	Woldiya University	10.1	3.0	7.9	7.9	3.0	6.4	

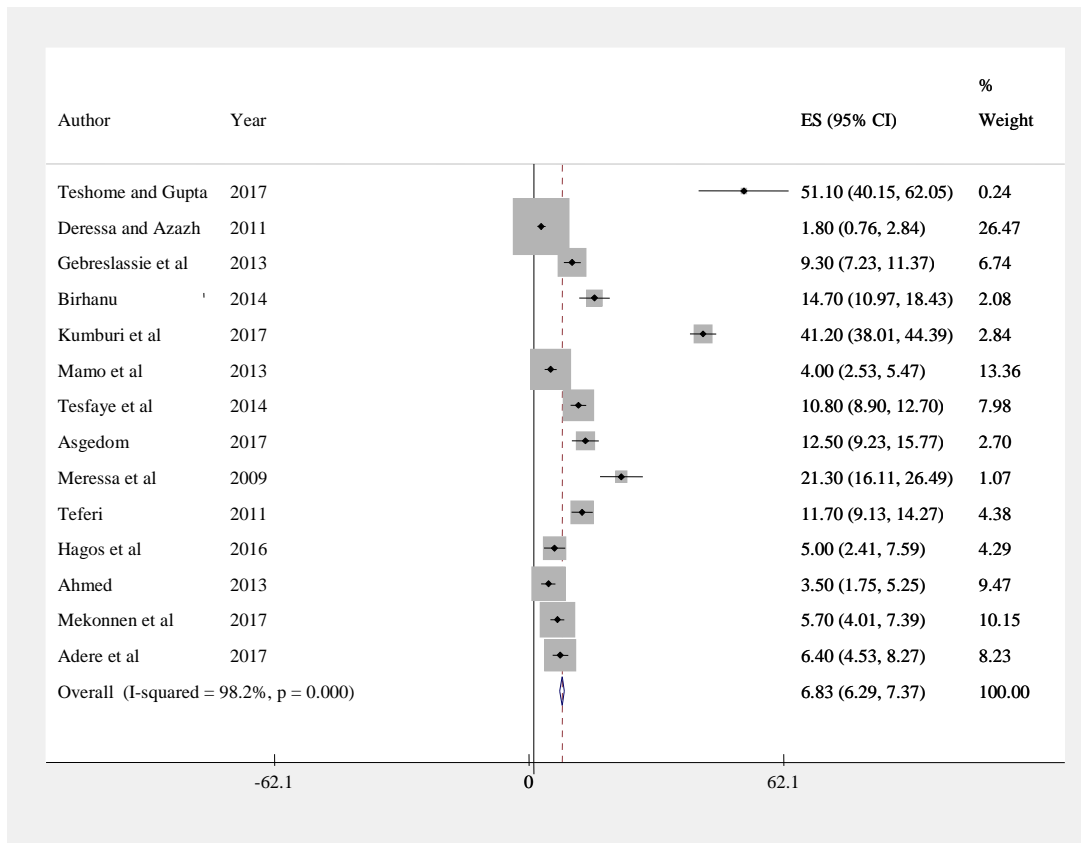


Figure3: Current prevalence of tobacco smoking among students at higher learning institutions in Ethiopia

Table 3: Khat chewing among students at higher learning institutions in Ethiopia

Author(s) (year)	Study design	Sample size (included/ calculated)	Setting (participants)	Overall prevalence						Remarks
				Lifetime use (%)			Current use (%)			
				Male	Female	Total	Male	Female	Total	
Teshome and Gupta, 2017 (23)	Cross-sectional	83/92	Adama University	---	---	---	---	---	62.0	Mixed method; only 69 undergraduate students participated; sampling method not described; representativeness is questionable.
Deressa and Azazh, 2011 (24)	Cross-sectional	622/632	Addis Ababa University School of Medicine	18.1	5.6	14.1	2.8	1.0	2.3	Representative sample; undergraduate students; lowest prevalence rates of all studies; peer pressure was an important factor.
Gebreslassie <i>et al.</i> , 2013 (25)	Cross-sectional	756/764	Aksum University	36.5	17.6	28.7	35.6	17.0	27.9	Sample size representative; undergraduate students; most common reasons for use were reported to be to help with reading, relaxation and relief of stress.
Gebrehananna <i>et al.</i> , 2014 (38)	Cross-sectional	3,001/3,872	Bahir Dar University	27.3	12.5	24.0	14.9	4.5	12.7	Self-reported khat use only; students believed that khat improved their academic function, although not supported by evidence.
Birhanu, 2014 (26)	Cross-sectional	346/364	Debre Berhan University	---	---	25.4	---	---	22.3	MA thesis; only total prevalence was reported.
Kumburi <i>et al.</i> , 2017 (27)	Cross-sectional	915/1,239	Dire Dawa University	---	---	---	35.0	51.9	40.4	Representative sample but high non-response rate; all departments; only current alcohol use reported.
Mamoet <i>et al.</i> , 2013 (28)	Cross-sectional	682/682	Gondar University	---	---	---	---	---	24.5	Mixed method; only total current use reported.
Tesfayeet <i>et al.</i> , 2014 (29)	Cross-sectional	1,022/1,040	Haramaya University	47.6	20.0	41.0	28.7	7.3	23.6	Highest prevalence in 3 rd year students. Some religions were reported to have protective effect. Married and depressed had higher use.
Kassa <i>et al.</i> , 2016 (30)	Cross-sectional	479/590	Hawassa University	52.4	31.2	48.7	30.9	23.4	29.5	Only alcohol and khat use were reported.
Asgedom, 2017 (31)	Cross-sectional	392/422	Jigjiga University	45.8	7.6	32.9	---	---	24.0	Doctoral thesis.
Meressa <i>et al.</i> , 2009 (32)	Cross-sectional	239/248	Jimma University	---	---	---	---	---	33.1	Khat use was reported to be negatively associated with CGPA.
Teferi, 2011 (33)	Cross-sectional	601/662	Mekelle University	---	---	35.1	---	---	25.1	MPH thesis; only total prevalence was reported.
Hagos <i>et al.</i> , 2016 (34)	Cross-sectional	271/271	Queen Sheba University College, Mekelle	---	---	9.2	---	---	4.0	Report from private higher learning institution.
Ahmed, 2013 (35)	Cross-sectional	425/452	Rift Valley University	53.9	21.3	36.9	19.6	7.7	13.4	Adama campus; conference proceedings report from private higher learning institution.
Mekonnen <i>et al.</i> , 2017 (36)	Cross-sectional	725/747	Wolaita Sodo University	---	---	---	---	---	10.2	
Adere <i>et al.</i> , 2017 (37)	Cross-sectional	655/730	Woldiya University	16.3	5.5	13.0	13.0	4.5	10.4	

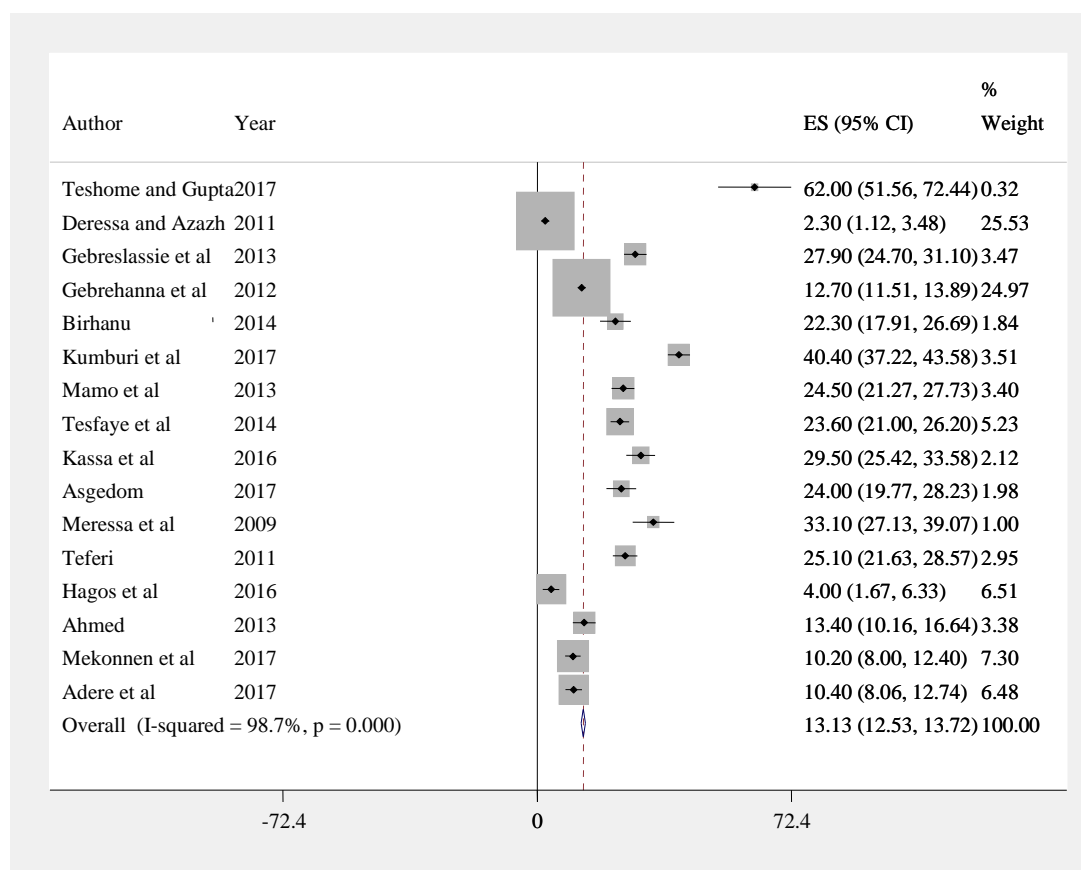


Figure4: Current prevalence of khat chewing among students at higher learning institutions in Ethiopia

Discussion

This review has shown that three substances, namely alcohol, khat and tobacco, are frequently used by students in institutions of higher learning in Ethiopia. The substance most commonly used by the students was alcohol, followed by khat and tobacco. Substance use was consistently higher in males across the studies. The magnitude of other substance use, especially the illicit ones, was not investigated.

The pooled estimate for the current use of alcohol was 26.65% (CI: 25.73-27.56, range:9%-55%), which is lower than the national average for current drinking by participants aged 15-29 years of age (36.6%), according to the 2015 NCD STEPS survey, which involved nationally representative participants aged 15-69 years of age, and excluded students in higher learning institutions(39,40). But, four studies reported the prevalence of current consumption of alcohol above 40%, which is higher than the reported national average. The overall prevalence was lower because some studies reported very low prevalence. Possible under-reporting by students could be another reason, as all studies relied on self-reporting.

The finding on current alcohol use is also consistent with studies from other African countries. A report focusing on university students in Western Kenya showed around 50% of students reported alcohol

consumption in the week prior to the study (41). Another report from a survey involving university students in South Africa showed the highest prevalence of current alcohol use at 67.5%. On the contrary, a study from Sudan, a predominantly Muslim country which follows strict Sharia law, reported the lowest prevalence of 2.7% for current alcohol consumption among university students (42). This finding is consistent with a report from Iran, another Muslim country, which reported past year use of alcohol at 6.9% among university students (43). Religion plays an important factor in the type of substance misused. For instance, in these Muslim countries, the prevalence of tobacco use was more than alcohol.

Alcohol remains the most commonly used substance among students at higher learning institutions in high-income countries. A report that reviewed the published literature on university student drinking found high rates of binge drinking, exceeding the weekly recommended limits in both males and females (44). In the USA alone, heavy episodic drinking was responsible for more than 1,825 deaths, 599,000 injuries, 646,000 assaults and 97,000 sexual assaults among college students aged 18-24 annually (45). Studies done in Ethiopia thus far have not reported heavy episodic drinking or adverse health consequences.

Regarding tobacco smoking, the reported prevalence ranged from 1.8% at AAU School of Medicine to 51.1% at Adama University, with the pooled estimate of 6.63%. Studies from nearly half of the universities included reported prevalence rates more than 10% which is three times more than the national average reported in the STEPS survey for youth aged 15-29; the pooled estimate was also more than double the national average for youth (3.1% vs. 6.63%) (46). Tobacco was reported to be the second most commonly abused substance among university students in Nigeria after alcohol (47). Tobacco is the most commonly used substance by university students residing in predominantly Muslim countries in Africa and Asia (36,37). A review of US college student surveys reported current smoking among university students to be 12.9% (48).

Nearly all the reviewed studies from universities in Ethiopia reported khat to be the second most commonly used substance after alcohol. The overall prevalence of khat chewing among university students was 13.13%, which was slightly lower than the report by the STEPS survey, which reported the current national prevalence of khat chewing of 15.8% (49). This could be due to under-reporting by students. The chewing of khat leaves is mainly restricted to residents of Eastern African countries and the Arabian Peninsula (50), so it is difficult to get comparable studies outside this geographical area. But, the use of stimulants of a similar nature by students at higher learning institutions is widespread in the rest of the world.

The male preponderance for substance use is consistent with reports conducted elsewhere (51). Males tend to be more adventurous and prone to risk taking. Substance use by males is also normalized, while use by females is a taboo in many societies. Although rates are lower in women, the adverse consequences of them can be more severe due to biological differences (52).

Ethiopian students reportedly chewed khat to study better and to improve their academic performance, but their CGPAs did not improve with the use of khat. In fact, students chewing khat had lower CGPAs than those who did not chew khat (29). Studies showed that khat impaired some components of mental functioning, such as working memory and cognitive flexibility (53). Besides, khat chewing can be a gateway drug that leads to other psychoactive substance use, such as tobacco smoking and alcohol drinking (54). Khat chewing has also been associated with increased violent behavior of students directed towards female students. This behavior was worse when khat was combined with alcohol (55). Moreover, the use of alcohol, tobacco and khat by young people was reported to be significantly associated with high-risk sexual behaviors (56). Hence, substance use by higher education students can have an adverse impact on their academic performance, social wellbeing, and mental and physical health. Moreover, the impact on the overall quality of education in higher learning institutions should be a source of concern.

Limitations of the study

The studies reviewed were very diverse and most used non-validated measures, and had issues with

methodological quality. Almost all the studies relied on self-reporting by students, which could have affected the prevalence of substance due to under-reporting. The lack of informative studies on illicit substances and adverse consequences of substance use was a major limitation; few studies reported an adverse impact of khat on academic performance. It was not possible to describe the quantity and frequency of substance used or the adverse impact of substance use on mental health, physical health or social wellbeing of students at higher learning institutions covered in this report.

Conclusion and recommendation

This review showed high prevalence of alcohol, tobacco and khat use among university students in Ethiopia. The adverse impact of khat chewing on academic performance has been reported by some studies, although its impact on mental health, physical health and social wellbeing of students was not reported.

Well-systematized studies involving both licit and illicit substance use and the impact on academic functioning, mental health, physical health and social wellbeing of students are recommended. Higher learning institutions need to develop alcohol and drug policies and strategies that focus on reducing demand and supply. Demand reduction needs to focus on intensive and sustained prevention efforts, and establishing counseling and rehabilitation services for the affected students. Supply reduction needs to focus on limiting access to psychoactive substances within and around university campuses.

Conflict of interest

The author has no conflict of interest to declare.

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