

Original Research Article

Substance Use and Substance Use Disorders among the Youths in Sub-Saharan Africa: A Systematic Review

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Abstract: Background: Substance use and substance use disorders are increasingly becoming a global public health problem and in sub-Saharan Africa, the prevalence among the youths has been increasing at an alarming rate. However, limited published data regarding this subject is available in sub-Saharan Africa. This systematic review therefore, aimed to assess the prevalence of substance use/substance disorders and associated factors among the youths in sub-Saharan Africa. **Methods:** This systematic review was conducted in line with the PRISMA guidelines. We searched PubMed, Google Scholar, the Cochrane Library, African Journals Online (AJOL), EMBASE and Science Direct database. Additional search included review of references in articles and search of the gray literature. The search was conducted on November 12, 2023 and included only studies that were published in English language between 2010 and 2022. **Results:** A total of 18 studies were selected. The overall prevalence of substance use disorders among the youths in sub-Saharan Africa was 67.9% (95%CI [48.2%-85.1%]) with the highest prevalence of 80% reported in Malawi, whereas the overall prevalence of substance use disorders was 19.1% [95% CI (16.7%-36.4%)] with the highest prevalence of 34.8% reported in Ethiopia. In this review, alcohol and cigarette smoking were the most prevalent substances used among the youths in sub-Saharan Africa, followed by cannabis and khat. In this systemic review, male gender, increasing age, living in urban areas, availability of substances, family history of substance use, having friends who use substances, lack social support, lack parental of supervision, having had engaged in sexual intercourse, being bullied, ever involved in a physical fight, alcohol consumption, cigarette smoking and feeling insecure within the family were factors significantly associated with substance use/substance use disorders among the youths in sub-Saharan Africa. **Conclusion:** Findings from this systematic review demonstrated that substance use/substance use disorders among the youths are still prevalent in sub-Saharan Africa. It is therefore important that interventions and rehabilitation programmes are comprehensive and targeted at adolescents and parents in these settings.

Keywords: Substance use, substance use disorders, associated factors, sub-Saharan Africa.

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INTRODUCTION

Globally, substance use and substance use disorders are increasingly becoming a global public health concern among the youth population, largely due to their increasing prevalence, worsening disability-adjusted life years, and high socioeconomic burden (Prom-Wormley *et al.*, 2017). Substance use and substance use disorders are highly prevalent worldwide

and contribute significantly to the global burden of disease, including increasing morbidity and mortality and societal cost implications such as increased healthcare costs, lost productivity and costs related to social welfare and criminal justice (United Nations Office on Drugs and Crime., 2022). In 2021, the World Drug Report reported an estimated 275 million people used drugs worldwide in the preceding year, with another 36 million persons diagnosed with substance use

disorders globally (World Drug Report., 2021). The Global Burden of Disease study (World Health Organization., 2022) reported substance use disorders as the second leading cause of disability among the mental disorders with 31,052,000 (25%) Years Lived with Disability attributed to them.

Several studies in sub-Saharan Africa have reported that substance use has increased in recent years and is a growing public health problem and a worldwide threat, significantly affecting young people aged 10–24 years (Ogundipe *et al.*, 2018; Jumbe *et al.*, 2021; Onaolapo *et al.*, 2022). The commonly used substances globally are alcohol, khat, cigarette, hashish, and other illicit drugs such as cannabis, heroin, and cocaine (Gebremariam *et al.*, 2018; Halladay *et al.*, 2020). Results from published systematic reviews in sub-Saharan Africa estimated the prevalence of substance use among adolescents (10–19 years) to be 41.6%, with alcohol being the most prevalent (40.8%) compared to other substances (Olawole-Isaac *et al.*, 2018; Ogundipe *et al.*, 2018; Jumbe *et al.*, 2021). In Tanzania, the prevalence of substance use among school-going adolescents (11–17 years) was 7%, with alcohol at 4.5% and drugs (3.1%), specifically marijuana, amphetamines, or methamphetamines being the most used (Francis *et al.*, 2015). One study in Kilimanjaro region reported cigarettes (15.5%), alcohol (9.2%), and marijuana (3%) as the most commonly used substances among school-going adolescents (Mnyika *et al.*, 2011).

Substance use disorder is serious health issue as it causes a wide range of physiological and psychological disorders such as fighting, vandalism, theft, engaging in unprotected sex, depression, suicide, medical problems and impaired relationships with family and friends, and traffic related injuries or deaths (Merikangas & McClair., 2012). It is believed that adverse effects of substance use disorder is more serious among young individuals as over 90% of substance users experience their first use during their adolescence age and later face substance use disorder and its serious adverse effects (Jalilian *et al.*, 2013). Others showed that short and long term health and social effects of using such substances are serious (Jalilian *et al.*, 2013).

Many studies have been conducted in sub-Saharan Africa to identify factors contributing to substance use disorder and found to include drug availability, unemployment, peer groups, parent's behavior, parent's education and individual's socio-economic status (Onaolapo *et al.*, 2022). In sub-Saharan Africa, interventional strategies should therefore focus on prevention, through identification of and mitigation of risk factors, as this approach is likely to consume fewer resources in the long run (Ogundipe *et al.*, 2018).

The prevalence of substance use disorders varies from country to country and time to time. The increasing number of youths suffering from substance

use disorder in sub-Saharan Africa suggests lack of knowledge about the effective contributors and preventive factors of substance use disorder, the most common harmful but preventable behavior in human population (Onaolapo *et al.*, 2022). Regular updates on substance use and its associated factors could therefore hold significant input regarding appropriate and dynamic interventions towards reduction or eradication of substance use among the youth, not only in sub-Saharan Africa but also worldwide (Moher *et al.*, 2015). However, to the best of our knowledge, we found only one systematic review reporting on this subject in sub-Saharan Africa (Jaguga *et al.*, 2022). This systematic review therefore, aimed to assess the prevalence of substance use/ substance disorders and associated factors among the youths in sub-Saharan Africa as a way forward towards strengthening the prevention and treatment of substance use disorders that could enhance achievement of the proposed indicator of Sustainable Development Goal (SDG-3.5) in the region of study.

METHODS

Study design and search strategy

This was a systematic review that was conducted to identify studies related to substance use disorders among the youth in sub-Saharan Africa. An electronic search was performed on electronic databases and directories using PubMed database, Google Scholar, the Cochrane Library, African Journals Online (AJOL) and Science Direct database. Additional search included review of references in articles and search of the gray literature. The search was conducted on November 12, 2023. The following key terms were used: (substance use OR substance abuse) AND (young people OR adolescent OR teenage OR youth) AND (sub-Saharan Africa). The authors followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline and the result of the search strategy was presented with the PRISMA flow chart (Moher *et al.*, 2015).

Selection and screening of studies

After the initial search, all articles were loaded onto Mendeley reference manager where initial duplicate screening and removal was done. After duplicate removal, the articles were loaded onto Rayyan, a software used for screening and selecting studies during the conduct of systematic reviews (Ouzzani *et al.*, 2016). The abstract and titles of retrieved articles were independently screened by two authors based on a set of pre-determined eligibility criteria. A second screening of full text articles was also done independently by two authors. Disagreements during each stage of the screening were resolved through discussion and consensus.

Eligibility criteria

Inclusion criteria

Articles fulfilling the following criteria were eligible for our systematic review:-

- All studies that reported the prevalence of substance use / substance use disorders among the youths in sub-Saharan Africa
- Studies that were published in English language or had an English translation
- Only studies that were published between 2010 and 2022.

Exclusion criteria

Case reports, unavailable full texts or abstract-only studies systematic review articles, letters, commentaries, duplicated studies and studies whose key data were not accessible even after request from the authors were excluded from this review.

Data extraction

The data from each study were extracted with two independent authors with a customized format. The disagreements between the two independent authors were resolved by the third Author. The extracted data included: Author names, country, year of publication, sample size, the prevalence of substance use/substance use disorders, study design and types of substance use disorder.

Data analysis

Data extracted from each study were then imported for analysis in STATA 15 (Collage Station,

Texas, US). Descriptive statistics such as frequencies and percentages of variables were presented using texts and tables. Heterogeneity between studies was assessed using I-squared (I²) statistic.

Quality assessment of the studies

Articles identified for retrieval were assessed by two independent authors for methodological quality prior to inclusion in the review. The disagreements between the authors appraising the articles were resolved through discussion.

RESULTS

Search Results

In this review, a total of 984 studies were identified through database searching and 2 were identified through other sources. These studies were assessed for duplicates and 520 studies remained after removal of 464 duplicates. Based on abstracts and titles, the 520 remained studies underwent an initial screening and among these, 484 studies were excluded. A second screen of full text articles was done for the 36 studies that were potentially eligible for the review. Eighteen studies were excluded as follows: 14 did not meet the eligibility criteria, 2 did not specify study designs and 2 had duplicated results. A total of 18 studies were found to meet the inclusion criteria and were included in the review for the final analysis (Figure 1).

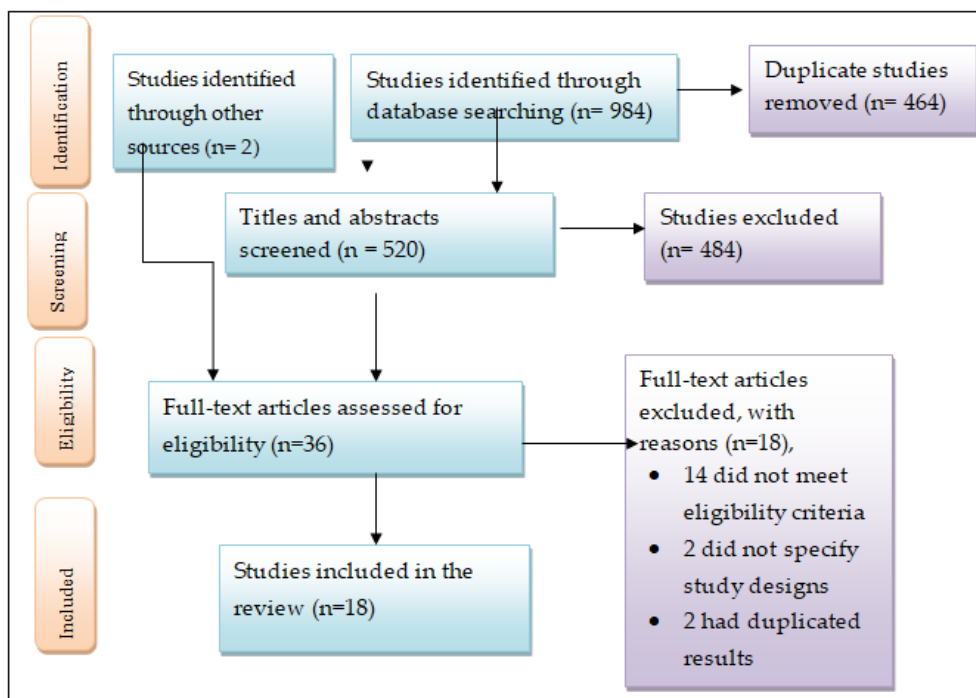


Figure 1: PRISMA flow chart summarizing phases of the search strategy

Characteristics of the included studies

Table 1 below shows the characteristics of the included studies. Eighteen studies examined the prevalence of substance use/ substance use disorders and predictors of substance use among the youth in sub-Saharan Africa. This review included studies that were

published between 2010 and 2022. The studies were predominantly conducted in three countries: Ethiopia (n = 7), Kenya (n = 3) and Tanzania (n = 2); the remaining studies were conducted in Nigeria (n = 1), South Africa (n = 1), Morocco (n=1), Ghana (n=1), Malawi (n=1) and Zimbabwe (n = 1). The majority of studies were cross-

sectional (n = 17) and one study used mixed study design (n = 1). The sample size for studies ranged from 146 (Embleton *et al.*, 2012) to 3347 (Hirpa *et al.*, 2023). The most common used substances included alcohol (n= 13), tobacco (n= 11), khat (n= 7) and cannabis (n= 8). Most studies examined more than one substance (n= 13) and 5 studies looked at only one substance. A total of 18 studies were retained for review.

Prevalence of substance use / substance use disorders

Out of 18 studies included in this systematic review, seven assessed the overall prevalence of substance use disorders (Bandason & Rusaaniko., 2010; Oshondi *et al.*, 2010; Dida *et al.*, 2014; Zarrouq *et al.*, 2016; Kamenderi *et al.*, 2020; Seid *et al.*, 2021; Mavura *et al.*, 2022), four assessed the overall prevalence of

substance use (Embleton *et al.*, 2012; Birhanu *et al.*, 2014; Chivandire & January., 2016; Awoli *et al.*, 2021) and the remaining seven studies assessed the overall prevalence of individual substance use (Ndetei *et al.*, 2010; Mnyika *et al.*, 2011; Mashita *et al.*, 2011; Deressa and Azazh., 2011; Asante *et al.*, 2014; Yitayih *et al.*, 2018; Hirpa *et al.*, 2023).

The overall prevalence of substance use disorders among the youths in sub-Saharan Africa was 67.9% (95%CI [48.2%-85.1%]) with the highest prevalence of 80% reported in Malawi (Chivandire & January., 2016), whereas the overall prevalence of substance use disorders was 19.1% [95% CI (16.7%-36.4%)] with the highest prevalence of 34.8% reported in Ethiopia (Dida *et al.*, 2014).

Table 1: Characteristics of studies included in the systematic review

Author /year	Country	Study design	Sample size	Substance used	Overall prevalence of substance use/SUD	Prevalence of individual substance used				Factors associated with substance use/SUD
						Alcohol	Tobacco	Khat	Cannabis	
Awoli <i>et al.</i> , (2021)	Kenya	Cross-sectional	500	Alcohol, cannabis, tobacco	69.8%#	51.9%	42.8%	-	2%	Male gender, living in urban areas,
Birhanu <i>et al.</i> , (2014)	Ethiopia	Cross-sectional	651	Alcohol, Tobacco, khat	47.9%#	59%	22.9%	34.9%	-	Siblings' use of substances, family history of substance use, friends' use of substances
Ndetei <i>et al.</i> , (2010)	Kenya	Cross-sectional	343	Alcohol, tobacco, cannabis, khat,	-	5.2%	3.8%	3.2%	1.7%	Not assessed
Yitayih <i>et al.</i> , (2018)	Ethiopia	Cross-sectional	336	Alcohol, cannabis	55.9%∞	36.2%	-	-	3.6%	Lack social support, living in urban areas, psychopathy and lack Supervision
Mavura <i>et al.</i> , (2022)	Tanzania	Cross-sectional	3224	Alcohol, tobacco, khat, cannabis	19.7%*	14.8%	7.6%	1.6%	0.7%	Male gender, ever having sex, being bullied, ever involved in a physical fight, seeing alcohol advertisements, classmate's social support, and parents/ guardians understanding adolescents' problems.
Zarrouq <i>et al.</i> , (2016)	Morocco	Cross-sectional	3020	Alcohol, tobacco, cannabis	9.3%*	4.3%	16.1%	-	8.1%	male, studying in secondary school level, smoking tobacco, living with a family member who uses tobacco, and feeling insecure within the family.
Oshondi <i>et al.</i> , (2010)	Nigeria	Cross-sectional	402	Alcohol, tobacco, cannabis	14.9%*	9.2%	5.2%	-	4.4%	Not assessed

Bandason & Rusaaniko (2010)	Zimbabwe	Not documented	650	Tobacco	28.8%*	28.8%	-	-	-	having friends that smoke, getting involved in physical fights, alcohol use, marijuana use and having had sexual intercourse
Dida <i>et al.</i> , (2014)	Ethiopia	Cross-sectional	210	Khat, tobacco	34.8%*	-	4.6%	23.6%	-	Male gender, respondents' sibling(s) who smokes cigarette, respondents whose best friend chews khat
Chivandire & January (2016)	Malawi	Cross-sectional	311	Cannabis	80%¥	-	-	-	80%	Alcohol consumption, cigarette smoking, and having had engaged in sexual intercourse
Mashita <i>et al.</i> , (2011)	South Africa	Cross-sectional	1654	Tobacco	-	-	-	-	-	Increasing age,
Embleton <i>et al.</i> , (2012)	Kenya	Cross-sectional	146	Alcohol, tobacco, cannabis, khat,	74%¥	47%	45%	33%	29%	Increasing age, having a family member who used alcohol, tobacco, or other drugs, staying in a communally rented shelter and being street-involved for greater than 2 years
Kamenderi <i>et al.</i> , (2020)	Kenya	Mixed methods (cross-sectional and qualitative)	3307	Alcohol	7.2%∞	7.2%	-	-	-	Not assessed
Asante <i>et al.</i> , (2014)	Ghana	Cross-sectional	227	Alcohol Cannabis	-	12%	-	-	16.2%	Female gender,
Deressa and Azazh (2011)	Ethiopia	Cross-sectional	622	Alcohol, tobacco, khat	-	22%	9%	7%	-	Being male, having friends who use substances
Hirpa <i>et al.</i> , (2023)	Ethiopia	Cross-sectional	3347	Alcohol, tobacco, khat	-	41.8%	4.7%	-	8.7%	Having friends who use substances, seen anyone using substances
Seid <i>et al.</i> , (2021)	Ethiopia	Cross-sectional	383	Alcohol, tobacco, khat	26.5%*	16%	9.6%	9.4%	-	Being male, having friends who use substances, availability of substances
Mnyika <i>et al.</i> , (2011)	Tanzania	Cross-sectional	545	Alcohol, tobacco, cannabis	-	26.2% for men and 15.5% for men	14.3% for men and 1.9% for women	-	1.5% for men and 1.4% for women	Being male,

*Prevalence of SUD, ¥ prevalence of substance use, ∞ prevalence of individual substance use. Keys: SUD = substance use disorders

Prevalence of individual substance use

The overall prevalence of individual substance use among the youths in sub-Saharan Africa ranged from 5.2% in Kenya (Ndeti *et al.*, (2010) to 55.9% in Ethiopia

(Yitayih *et al.*, 2018). In this systematic review, alcohol was the most commonly used substance among the youths in sub-Saharan Africa. Ethiopia had the highest overall prevalence of alcohol use among the youths at

59% (Birhanu *et al.*, 2014), whereas the lowest overall prevalence of alcohol use among the youths at 7.2% was reported by Kamenderi *et al.*, (2020) in Kenya. Tobacco was the second most frequently used substance among the youths. The overall prevalence of tobacco use among the youths ranged from 3.8% in Kenya (Ndetei *et al.*, 2010) to 45% also in Kenya (Embleton *et al.*, 2012). Cannabis use ranked third among the youths and overall, the prevalence of cannabis use ranged from 0.7% in Tanzania (Mavura *et al.*, 2022) to 80% in Malawi (Chivandire & January., 2016). In the present review, khat was the fourth most commonly used substance among the youths. Overall, the prevalence of khat use among the youths ranged from 1.6% in Tanzania (Mavura *et al.*, 2022) to 34.9% in Ethiopia (Birhanu *et al.*, 2014).

Factors associated with substance use/substance use disorders

In this systemic review, male gender (Mnyika *et al.*, 2011; Deressa and Azazh., 2011; Seid *et al.*, 2021; Awoli *et al.*, 2021; Mavura *et al.*, 2022), female gender (Asante *et al.*, 2014), increasing age (Mashita *et al.*, 2011; Embleton *et al.*, 2012), living in urban areas (Yitayih *et al.*, 2018; Awoli *et al.*, 2021), availability of substances (Seid *et al.*, 2021), family history of substance use (Birhanu *et al.*, 2014; Dida *et al.*, 2014; Zarrouq *et al.*, 2016), having friends who use substances (Bandason & Rusaaniko., 2010; Deressa and Azazh., 2011; Birhanu *et al.*, 2014; Dida *et al.*, 2014; Seid *et al.*, 2021; Hirpa *et al.*, 2023), lack social support (Yitayih *et al.*, 2018; Mavura *et al.*, 2022), lack parental of supervision (Yitayih *et al.*, 2018), having had engaged in sexual intercourse (Bandason & Rusaaniko., 2010; Chivandire & January., 2016), being bullied (Mavura *et al.*, 2022), ever involved in a physical fight (Mavura *et al.*, 2022), alcohol consumption (Chivandire & January., 2016), cigarette smoking (Chivandire & January., 2016) and feeling insecure within the family (Zarrouq *et al.*, 2016) were factors significantly associated with substance use/ substance use disorders among the youths in sub-Saharan Africa. In the current review, factors associated with substance use/ substance use disorders among the youths were not assessed in three studies (Oshondi *et al.*, 2010; Ndetei *et al.*, 2010; Kamenderi *et al.*, 2020).

DISCUSSION

This systematic review assessed the prevalence of substance use/ substance use disorders and associated factors among the youth in sub-Saharan Africa. The prevalence of substance use/ substance use disorders among the youth in sub-Saharan Africa shows geographical variation (Chivandire & January, 2016; Yitayih *et al.*, 2018; Hirpa *et al.*, 2023). In this review, the overall current prevalence of substance use among the youths in sub-Saharan Africa was 67.9% with the highest overall prevalence of 80% being reported in Malawi (Chivandire & January, 2016). The figure for overall prevalence in our review is higher than 41.6%

that was reported previously among adolescents in sub-Saharan Africa (Olawole-Isaac *et al.*, 2018). The reason for differences in prevalence might be sample population, availability of psychoactive substances, and cultural differences. In the present review, the overall prevalence of substance use disorders among the youths in sub-Saharan Africa was 19.1%, a figure which is higher than the prevalence of between 5.2% and 13.5% that is reported in literature (Onaolapo *et al.*, 2022).

In the present systematic review, alcohol and cigarette smoking were the most prevalent substances used among the youths in sub-Saharan Africa, followed by cannabis and khat (Ndetei *et al.*, 2010; Oshondi *et al.*, 2010; Deressa and Azazh., 2011; Embleton *et al.*, 2012; Seid *et al.*, 2021; Hirpa *et al.*, 2023). This pattern is consistent with the findings of other studies in Africa (Moodley *et al.*, 2012; Sedibe *et al.*, 2021), including Botswana (Olashore *et al.*, 2018) and international literature (Halladay *et al.*, 2020). In this review, Ethiopia had the highest overall prevalence of alcohol use among the youths (Birhanu *et al.*, 2014), whereas the lowest overall prevalence of alcohol use among the youths was reported by Kamenderi *et al.*, (2020) in Kenya. The highest overall prevalence of tobacco use among the youths was reported in Kenya (Embleton *et al.*, 2012). The highest prevalence of cannabis was reported in Malawi (Chivandire & January., 2016), whereas the lowest overall prevalence was reported in Tanzania (Mavura *et al.*, 2022). This trend in the prevalence of individual psychoactive substance use has also been reported in other studies (Akande-Sholabi *et al.*, 2019; Van Hout *et al.*, 2021) and the accessibility of this agent is fast becoming a source of concern. The reasons for high prevalence among the type of substance (s) commonly used among the youths between the current study and other studies can be explained by the availability of the particular substances in those countries and the patient's characteristics.

Several factors have been reported in literature to be associated with substance use / substance use disorders among the youths (Deressa and Azazh., 2011; Birhanu *et al.*, 2014; Dida *et al.*, 2014; Seid *et al.*, 2021; Hirpa *et al.*, 2023). In the present review, male gender was, in several studies (Mnyika *et al.*, 2011; Deressa and Azazh, 2011; Seid *et al.*, 2021; Awoli *et al.*, 2021; Mavura *et al.*, 2022), significantly associated with substance use/ substance use disorders among the youths in sub-Saharan Africa. However, only one study in this systematic review reported female gender as a factor significantly associated with substance use/ substance use disorders among the youths (Asante *et al.*, 2014). This gender difference in this review might be explained by the fact that males are more likely to use substances due to early life peer pressure, curiosity, and exploring an environment where substances are available. Besides, a male takes greater risk than a female due to gendered social norms, nature, and physiology (Doku, 2012). On the other hand, the lower odds of substance use among

females may be associated with societal and cultural gender role expectations to act and conduct themselves. Substance use among females is seen as a shameful, inappropriate practice and less sensation-seeking behavior than males.

The finding that increasing age is associated with substance use / substance use disorders among the youths reported in literature agrees with our review which supports the association between increasing age and substance use among the youths (Mashita *et al.*, 2011; Embleton *et al.*, 2012). On the contrary, one study in northern Tanzania found no association between youth's age and substance use (Mavura *et al.*, 2022). However, there are limited studies about the association between youth's age and substance use in Sub-Saharan Africa. Despite the observed differences with other studies, interventions should target reducing substance use practice among school-going adolescents because of their ingenuity in trying new things.

In this systematic review, family history of substance use was associated with substance use / substance use disorders among the youths in sub-Saharan Africa (Birhanu *et al.*, 2014; Dida *et al.*, 2014; Zarrouq *et al.*, 2016). Parents who use a substance in front of their children became role models to their children and made children believe that substance use of adults is acceptable behavior (Birhanu *et al.*, 2014). Additionally, in the current review, it was found that having friends who use substances was associated with substance use among the youths (Bandason & Rusaaniko., 2010; Deressa and Azazh., 2011; Birhanu *et al.*, 2014; Dida *et al.*, 2014; Seid *et al.*, 2021; Hirpa *et al.*, 2023). The association between having friends who use substances and substance use / substance use disorders among the youths confirms the role of peer pressure and social learning in initiation of substance use (Bandason & Rusaaniko, 2010; Deressa and Azazh, 2011; Birhanu *et al.*, 2014; Dida *et al.*, 2014; Seid *et al.*, 2021; Hirpa *et al.*, 2023). The implication of this finding is that peers and older relatives would also serve as good role models for a substance use intervention program for young people in this setting.

This finding suggests that substance prevention interventions should include socialization skills and peer pressure management to modify this factor.

The strong association that was reported between alcohol consumption and substance use / substance use disorders in this review is well documented in literature, in which majority of substance users also reported alcohol use (Chivandire & January, 2016). The implication here is that interventions that aim to reduce underage alcohol consumption may, by association, also reduce initiation of substance use, and vice versa. Similarly, the strong relationship between smoking tobacco and using substances is well established (Seid *et al.*, 2021; Hirpa *et al.*, 2023), and

preventing experimentation or habitual use of one of these substances would likely mean largely preventing use of the other, and this would have important public health implications when it comes to preventing respiratory, cardiovascular, and mental illnesses.

It is well documented that having had engaged in sexual intercourse is associated with substance use / substance use disorders among the youths (Page & Hall., 2009; Ali *et al.*, 2020). This association is reflected in our review in which having had engaged in sexual activities is associated with substance use / substance use disorders among the youths (Bandason & Rusaaniko., 2010; Chivandire & January., 2016). Studies conducted among the youths and adolescents have identified an association between substance use and sexual risk behaviors such as ever having sex, having multiple sex partners, not using a condom, and pregnancy before the age of 15 years of age (Derese *et al.*, 2010). Youths who are under the influence of substances generally engage in risky sexual activities and are easily exposed to sexually transmitted diseases, including HIV infection (Doku, 2012). The observed association between substance use and sexual risk behaviors may be because substances such as alcohol, cigarette, and cannabis illicit drugs affect cognitive processes and decision-making, thus contributing to a compromised judgment (Mavura *et al.*, 2022). Prevention programs for substance use and sexual risk behaviors should include a focus on individuals, peers, families, schools, and communities.

As reported elsewhere (Asante, 2019), youths who have ever been bullied was associated with current substance use / substance use disorders in this review (Mavura *et al.*, 2022). A possible explanation for this is that the victims of bullying are predisposed to use substances as a maladaptive coping strategy (Pengpid & Peltzer., 2019). In addition, it was found that engaging in a physical fight was associated with alcohol use and misuse, where youths used substances as a coping mechanism (Mavura *et al.*, 2022). Likewise, we also found that youths who engaged in a physical fight had a higher likelihood of substance use, similar to a study done across eight sub-Saharan countries (Gyan *et al.*, 2021). Therefore, youths need to be educated on the psychological effects that bullying and physical fights can cause, explaining how victimization can cause severe depression and anxiety that lead to substance use (Wolke & Lereya., 2019). Youths support groups or systems for the affected may help the victims cope with the bullying and physical abuse, reducing dependence on substance use.

In the current systematic review, lack of social support was associated with current substance use / substance use disorders among the youths (Yitayih *et al.*, 2018; Mavura *et al.*, 2022). This finding is consistent with the study done in Bangladesh, which reported that the likelihood of substance use increases with a lack of social support as it exhibits greater anti-social behaviors

that can manifest in substance use (Ali *et al.*, 2020; Olashore *et al.*, 2022). In one study in Malaysia, youths with inadequate social support had a higher likelihood of substance use (Yusoff *et al.*, 2014). On the contrary, a study done in Ghana found no association between social support and substance use (Asante, 2019). The possible reasons could be that the Ghanaian study only assessed two substances (i.e., cannabis and amphetamines), compared to four substances examined in this review. In addition, lack of parental supervision was also associated with substance use among the youths (Yitayih *et al.*, 2018). Previous studies demonstrated that parents' supervision of youths reduces substance use practice (Siziya *et al.*, 2013; Yazdi-Feyzabadi *et al.*, 2019). Limited parental monitoring, involvement, and active substance use in the home at the family level may predispose the youths to use substances (Jones *et al.*, 2019). Therefore, lack of social support may expose youths to substance use practices as a coping mechanism due to insecurity.

The strength of this review is due to the fact that in conducting this systematic review we adhered to the recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. However, the potential limitations of this review is that for quality assessment, detailed assessments using design specific tools were not possible given the diverse methodological approaches utilized in the studies. Additionally, we observed an overlap in age categorization between the youths and adults in some studies that could limit the interpretation of pooled differences between the youths and adult population. However, despite these limitations, this review provided vital information that can be utilized for future research and form the foundations for designing effective intervention strategies.

In conclusion, this systematic review demonstrates that substance use / substance use disorders among the youths are still prevalent in sub-Saharan Africa. The fact that parental factors have significant influence on youth's use of substances would require home-based counseling among parents, thus ensuring holistic aid and treatment of substance use for parents and the youths. It is important that interventions and rehabilitation programmes are comprehensive and targeted at the youths and parents in these settings.

Ethical Approval

This study does not include human or animal participants and thus does not require approval from ethical review boards.

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Conflicts of interest: There are no conflicts of interest.

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