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Substance Use Disorder Among Patients with Primary Mental Illnesses in Southwestern Uganda

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ABSTRACT

Objective: Substance use is common among people with primary mental illness especially schizophrenia and bipolar disorder compared to the general population and complicates treatment outcomes. **Methods:** We enrolled 385 patients with primary mental illnesses in southwestern Uganda between June and August 2022. We collected information on alcohol and cannabis use, social support, religiosity, adherence to treatment and sociodemographic characteristics. We run a logistic regression model to determine the factors associated with substance use disorder. **Results:** At multivariable analysis, being male (AOR = 13.61, 95% CI [3.66–50.63]: p <.001) and prior history of cannabis/alcohol use (AOR = 34.95, 95% CI [8.80–138.72]: p < .001) were significantly associated with substance use disorder while adherence to treatment was against substance use disorder (AOR = 0.27, 95% CI [0.09-0.83]: p = .03). **Conclusions:** Adherence to treatment is protective against substance use disorder among people with mental illness. Interventions aiming at preventing substance use disorder among people with mental illness should aim at promoting adherence to treatment.

KEYWORDS
Alcohol; cannabis; substance abuse disorder; mental illness; religiosity; social support; Uganda

Globally, the number of people using addictive substances is increasing with about 296 million people between the ages of 15 and 64 years reported to be using addictive substances worldwide (World Health Organization, 2018). Both substance use and substance use disorder (SUD) are on the rise globally, with over 35 million people living with mental illness diagnosed with SUD in 2019 (Ritchie & Roser, 2019). Substance use disorder is a condition in which an individual's use of substances negatively impacts their social and occupational functioning (Kerner, 2015). Substances commonly abused include alcohol, tobacco, marijuana/cannabis, cocaine, khat, Kuber/mijaj among others (Onaolapo et al., 2022). Substance abuse has been linked to primary mental illnesses (defined as mental illnesses whose first episode occurred before the onset of substance use) especially schizophrenia and other psychotic disorders, mood disorders, anxiety disorders and personality disorders (Masroor et al., 2021; Saban et al., 2014). Overall, the prevalence of substance use disorder is higher among people with mental compared to the general population (Arias et al., 2017; Maremmani et al., 2017). In a systematic review and meta-analysis of 123 studies of patient with mental illness, SUD was comorbid among 41.7%, cannabis and alcohol being the commonest substances abused (Hunt et al., 2018). Among patients with mental illness attending a large secondary-level psychiatric hospital in Cape Town South Africa, 34.3% and 30.6% were being managed for comorbid cannabis use disorder and alcohol use disorder respectively (Temmingh et al., 2020). Due to the poor judgment that comes with having a mental disorder, people may use substances in an attempt to mitigate the adverse effects of psychotropic medications or to treat psychotic symptoms like hallucinations (Levy, 2019; Turna et al., 2020).

Substance use among patients with mental illness complicates health seeking behavior and access to medical care (Herbeck et al., 2005) and reduces compliance to treatment (Kalema et al., 2017; Urbanoski et al., 2007). Adherence to treatment has been reported to be lowest among patients with mental illness who use substances (Agrawal et al., 2011; Patel et al., 2020). Specifically, cannabis use among people with mental illness has been documented to complicate treatment outcomes due to poor adherence to treatment, disengagement from care, leading to high relapse rates, slow recovery, impaired functioning and worse prognosis (Adan et al., 2017;

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Agrawal et al., 2011; Arias et al., 2017; Bahorik et al., 2017; Patel et al., 2020; Sariah et al., 2014; van Rossum et al., 2009). Patients with mental illness who use substances commonly present with severe symptoms of the illness with associated medical complications and impaired functionality with a high risk of mortality (Manseau & Bogenschutz, 2016; Polimanti et al., 2017).

Male gender, young age, early onset of mental illness, history of adverse childhood experiences, higher levels of education and less involvement in religious activities have been associated with increased risk of substance use disorder among people with mental illness (Gudaji & Habib, 2016; Hapangama et al., 2013; Messer et al., 2017). On the other hand, good social support and quality social networks are helpful in prevention and recovery from substance use disorders among people with mental illness (Gros et al., 2016; Stevens et al., 2015). Spirituality and religious activities have been documented to reduce substance misuse among patients with schizophrenia and other mental disorders (Edlund et al., 2010; Huguelet et al., 2009). Among patients with mental disorders, spirituality enhances social support, promotes hope and fosters a positive view of the world which is key in the recovery process (Jacobson & Greenley, 2001).

Studies done in Uganda on substance use and substance use disorders have focused mainly on alcohol use and alcohol use order among adults and adolescents in the general population (Kabwama et al., 2016; Nalwadda et al., 2018; Swahn et al., 2020) as well as adolescents and adults living with HIV (Birungi et al., 2021; Miller et al., 2021). Although literature exists on substance use and substance use disorder among people with mental illness in sub Saharan Africa much of this is limited to schizophrenia and other psychotic disorders with a few considering patients with mental illness generally (Karino et al., 2023; Temmingh et al., 2021). More so, other studies on substance related problems among people with mental illness in sub-Saharan Africa have focused on substance use and not substance use disorder (Anic & Robertson, 2020; Sowunmi et al., 2019). Literature on substance use disorder focusing on cannabis and alcohol use among people with mental illness in Uganda is limited. Therefore, this study aimed to determine the prevalence of substance use disorder (limited to cannabis and alcohol in this study) among patients with primary mental illness in rural southwestern Uganda.

Methods

Study design and setting

The study was a cross-sectional study carried out at Mbarara Regional Referral Hospital (MRRH) department of Psychiatry between June 2022 and August 2022. MRRH is located in Mbarara city, southwestern Uganda 270 km from the capital city, Kampala. Mbarara city has a population of 195,013 according to the latest census conducted by the Uganda bureau of statistics (Uganda Bureau of Statistics, 2014). The hospital serves multiple districts neighboring Mbarara and neighboring countries of Burundi, Rwanda, Democratic Republic of Congo (DRC), and Tanzania (Ministry of Health Uganda, 2021). Majority of the people who seek care in the hospital reside in rural areas neighboring the city where they earn their livelihood through small scale trading, animal rearing and subsistence agriculture. Food and water insecurity are documented challenges in these rural areas (Mushavi et al., 2020; Tsai et al., 2016).

Study participants

We enrolled patients with a primary mental illness diagnosis according to DSM-V as confirmed and documented a by a licensed Ugandan Psychiatrist. The patients were those attending the outpatient clinic for their monthly reviews at the department of Psychiatry. We included patients aged 18 years and above with a confirmed diagnosis of a primary mental illness (e.g., schizophrenia, bipolar disorder, major depression), both men and women. We excluded patients who had substance induced mental illnesses, those who were unable to consent because of active symptoms of mental illness, those who were physically unwell to endure the duration of the interview due to an underlying medical illness.

Enrollment procedure

Participants who met the inclusion criteria were referred to the research assistant by the attending clinician after completing their clinic review. The research assistant provided more information about the study including the benefits of participating in the study and risks associated with their participation if any. Those who showed their willingness to participate in the study were asked to provide their written informed consent before they could enroll. The research assistant was fluent in both Runyankore (local language) and English, and interviews were conducted the in a private room to ensure the privacy of the participants in the language of their preference.

Study variables

The outcome variable was substance use disorder (alcohol and cannabis) based on alcohol use disorder identification test (AUDIT) and cannabis use

disorder identification test (CUDIT). The main predictor variables were social support based on the multidimensional scale of perceived social support (MSPSS) (Zimet et al., 1988) and religiosity based on the Duke University Religion Index (DUREL). We also collected information on socio-demographic factors (age, sex, employment status, religion, and marital status, level of education), and clinical factors (family history of alcohol and cannabis use, and prior history of use of cannabis and alcohol, mental illness diagnosis, number of previous admissions, age at first diagnosis, and duration with mental illness), and adherence to psychotropic medicines using the adherence in chronic disease scale (ACDS).

Study measures

Sociodemographic and clinical factors questionnaire

From extensive literature review, the following socio-demographic factors were collected: age (in complete years), sex (male, female), employment status (employed, not employed), religion (Muslims, Christians, others), and marital status (single, married/cohabiting, others), level of education (none, primary, secondary, tertiary). Clinical factors included, family history of alcohol and cannabis use (yes, no), and prior history of use of cannabis and alcohol (yes, no), mental illness diagnosis (e.g. depression, bipolar, schizophrenia spectrum disorders), number of previous admissions, age at first diagnosis, and duration with mental illness.

Alcohol Use Disorder Identification Test

Alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). The AUDIT is a 10-item screening tool developed by the World Health Organization in 1982 to assess alcohol consumption, drinking behaviors, and alcohol-related problems. Patients are encouraged to answer the AUDIT questions in terms of standard drinks. A score of 8 or more is considered to indicate hazardous or harmful alcohol use. The AUDIT has been validated across genders and in a wide range of racial/ethnic groups and is well suited for use in primary care settings (Reinert & Allen, 2007).

Cannabis Use Disorder Identification Test

Cannabis use was assessed using the Cannabis Use Identification Test (CUDIT) (Adamson & Sellman, 2003). The CUDIT is a brief cannabis misuse screening tool which is widely used to identify cannabis use problems. It is a direct modification of the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). In this tool, the participant selects the response that is most correct in relation to his/her cannabis use over the past six months. Scores of 8 or more indicate hazardous cannabis use, while scores of 12 or more indicate a possible cannabis use disorder for which further intervention may be required. Question 1-7 are scored on a 0-4 scale Question 8 is scored 0, 2, or 4.

The Adherence in Chronic Disease Scale

Adherence to treatment was assessed using the Adherence in Chronic Disease Scale (ACDS). The ACDS is a 7-item scale in which questions are related to patients' behavior directly determining adherence (items 1–5) or to situations and opinions which may influence adherence (items 6-7). The ACDS is designed for surveying adults treated for chronic diseases and reflects the actual implementation of a treatment plan regarding pharmacotherapy and has been used in many chronic illnesses such as chronic heart diseases (Kosobucka et al., 2018). This scale has been used in many populations including Africa (Buszko et al., 2016). A score of ≥ 26 indicates a high level of adherence.

The Multidimensional Scale of Perceived Social Support

Social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988). The MSPSS measures perceptions of social support from three sources namely family, friends, and a significant other. The scale is comprised of a total of 12 items, with 4 items per subscale. Some of the items include the following: "I can talk about my problems with my family," "I can talk about my problems with my friends." All items are answered using a 4-point scale format ranging from strongly agree (1) to strongly disagree (4). The MSPSS has demonstrated good internal consistency (Zimet, Dahlem, Zimet, Gordon, & Farley, 2010) and has been used in Uganda with a Cronbach's alpha, of 0.83 (Nakigudde et al., 2014).

The Duke University Religion Index

Religiosity was measured using the Duke University Religion Index (DUREL) (Koenig & Büssing, 2010). The Duke University Religion Index (DUREL) is a five-item measure of religious involvement and assesses the three major dimensions of religiosity including organizational religious activity, non-organizational religious activity, and intrinsic religiosity (Koenig &

Büssing, 2010). The DUREL measures each of these dimensions by a separate subscale, and correlations with health outcomes is analyzed by each subscale in separate models. The overall scale was documented to have a high test-retest reliability (intra-class correlation of 0.91), high internal consistency (Cronbach's alpha's = 0.78–0.91), and high convergent validity with other measures of religiosity (r's = 0.71–0.86).

Data analysis

STATA V.15 statistical software (StataCorp, 2015) was used for the data analysis. Continuous variables were summarized as means and standard deviations while categorical variables were summarized as proportions and percentages. Using the Gaussian assumption, we assessed for normality of continuous variables using the Shapiro-Wilks test and histograms. The outcome variable (substance use disorder) was defined as having either alcohol use disorder, cannabis use disorder or both. We run logistic regression models to determine the factors associated with substance use disorder. At multivariable analysis we included factors with a p-value of ≤ .3. To account for collinearity, the variance inflation factor (VIF) of less than 3 was considered. At a 95% confidence interval [CI], a p-value < .05 was regarded as significant.

Ethical considerations

The study was approved by the research ethics committee of Mbarara University of Science and Technology (#MUST-2022-427). All participants provided written informed consent before they were enrolled in the study.

Results

Participants Characteristics

A total of 385 participants were included in the analysis. The participant's mean age was 38.93 (SD ± 13.76) years, 197/385 (51.17%) were women, and 183/385 (47.53%) had bipolar affective disorder (Table 1). Overall, 51/385 (13.25%) had SUD, with 45/385 (11.69%) with alcohol use disorder and, 21/385 (5.45%) with Cannabis use disorder.

At bivariate analysis male gender, secondary level of education, family history of substance use, prior history of substance use, having a schizophrenia spectrum disorder, medium or high medication adherence and organizational and non-organizational religiosity are associated substance use disorder (Table 2).

At multivariable analysis, male gender (AOR = 9.63, 95% CI [3.01–30.77]; p < .001), and prior history of cannabis/alcohol use (AOR = 30.28, 95% CI [7.89–114.99]; p < .001) were significantly associated with the likelihood of developing substance use disorder whereas adherence to medication moderate (AOR = 0.29, 95% CI [0.09–0.91]; p = .03) and high adherence to medications (AOR = 0.35, 95% CI [0.13–0.93]; p = .04) was protective against developing substance use disorder (Table 2).

Discussion

The present study is one of the few studies that has investigated comorbid substance use disorder among people with primary mental illness and associated factors in Uganda. The findings discussed below may have clinical and public health impacts in managing mental disorders in Uganda. Our study found the prevalence of substance use disorder at 13.25%. We found that being male and prior history of substance abuse increased the odds of substance use disorder among the study participants. On the other hand, the odds of substance use disorder were reduced among participants who were adherent to their psychotropic medication.

The prevalence of substance use disorder in our study is comparable to a prevalence of 16.5% reported among patients with mental illness in a study done in central Uganda (Maling, 2002) but was lower than that estimated among patients with mental illness in Tanzania which was estimated at 68.5% (Hauli et al., 2011). While our study focused on alcohol and cannabis use among adult patients with primary mental illness, the study in Tanzania enrolled both adolescents and adult patients and screened for multiple substances beyond alcohol and cannabis use (Hauli et al., 2011). In other sub Saharan settings, the prevalence of substance use disorder among patients with mental illness has been estimated to range between 47.3% and 63.4% with cannabis and alcohol being the among the commonly used substances although these studies assessed for multiple substances beyond alcohol and cannabis (Otlhapile et al., 2023; Temmingh et al., 2021; Weich & Pienaar, 2009). The prevalence of SUD in this study is lower than that estimated in high income countries where it has been estimated to range between 13% and 53% (Brunette et al., 2018; Kavanagh et al., 2004; Mauri et al., 2006; Myles et al., 2016; Sara et al., 2014). However, most of the studies in high income countries focused on schizophrenia and first episode psychosis (Brunette et al., 2018; Kavanagh et al., 2004; Margolese et al., 2004; Myles

Table 1. Summary Characteristics of Study Participants Stratified by Substance Use Disorder.

		Substance Use Disorder	
		No	Yes
Variables	Total N (%) or Mean ± SD	N (%) or Mean ± SD	N (%) or Mean ± SD
Age (Mean ± SD)	38.93 ± 13.76	39.22 ± 14.05	37.06 ± 11.64
Sex			
Female	197 (51.2)	193 (98)	4 (2)
Male	188 (48.8)	141 (75)	47 (25)
Level of education			
Primary	157 (40.9)	142 (90)	15 (10)
Secondary	139 (36.0)	110 (79.1)	29 (20.9)
Tertiary	89 (23.1)	82 (92.1)	7 (7.9)
Marital status			
Single	148 (38.4)	126 (85.1)	22 (14.9)
Married/cohabiting	175 (45.5)	150 (85.7)	25 (14.3)
Others[#]	62 (16.1)	58 (93.6)	4 (6.4)
Religion			
Moslem	44 (11.4)	40 (90.9)	4 (9.1)
Christian	341 (88.6)	294 (86.2)	47 (13.8)
Employment status			
Employed	72 (18.7)	65 (90.3)	7 (9.7)
Unemployed	313 (81.3)	269 (85.9)	44 (14.1)
Family history of alcohol or cannabis use			
No	224 (58.2)	215 (96.0)	9 (4.0)
Yes	161 (41.8)	119 (73.9)	42 (26.1)
Prior history of alcohol or cannabis use			
No	274 (71.2)	269 (98.2)	5 (1.8)
Yes	111 (28.8)	65 (58.6)	46 (41.4)
Primary diagnosis			
Depression	61 (15.8)	58 (95.1)	3 (4.9)
Bipolar disorder	183 (47.5)	160 (87.4)	23 (12.6)
Schizophrenia spectrum disorder*	141 (36.6)	116 (82.3)	25 (17.7)
Number of previous admissions			
More than 6 admissions	27 (7.0)	23 (85.2)	4 (14.8)
4 to 6 admissions	41 (10.7)	38 (92.7)	3 (7.3)
1 to 3 admissions	253 (65.7)	219 (7.3)	34 (13.4)
None	64 (16.6)	54 (84.4)	10 (15.6)
Medication adherence in chronic diseases			
Low adherence	106 (27.5)	83 (78.3)	23 (21.7)
Medium adherence	86 (22.3)	77 (89.5)	9 (10.5)
High adherence	193 (50.1)	174 (90.2)	19 (9.8)
Perceived social support			
Total perceived social support scale	55.31 ± 12.55	55.11 ± 12.60	56.69 ± 12.27
Perceived social support subscales			
Family subscale	21.52 ± 5.02	21.50 ± 5.03	21.82 ± 4.71
Friends subscale	17.70 ± 6.30	17.64 ± 6.35	18.29 ± 5.78
Significant other subscale	21.31 ± 5.39	21.27 ± 5.38	21.88 ± 4.90
Religiosity index			
Total religiosity index	18.60 ± 5.67	18.81 ± 5.61	17.20 ± 5.96
Religion index subtypes			
Organizational religiosity	4.29 ± 1.57	4.37 ± 1.55	3.80 ± 1.66
Non-organizational religiosity	3.30 ± 1.71	3.40 ± 1.71	2.67 ± 1.63
Intrinsic religiosity	11.00 ± 3.54	11.04 ± 3.50	10.73 ± 3.88

***Others[#]*:** Widowed/widower or divorced/separated.
Schizophrenia spectrum disorder*: Brief psychotic disorder, schizophreniform, schizophrenia, and schizoaffective disorders.

et al., 2016). The high prevalence of substance use among people with schizophrenia has been linked to easy access to the substances yet majority of these don't access care (Brunette et al., 2018). A study in Denmark involving patients with schizophrenia and bipolar disorder also recorded a high prevalence of substance use disorder of 56.7% among participants with schizophrenia and 59.7% among those with bipolar disorder (Hjorthøj et al., 2015) which is higher than what was estimated in our study.

We found that being male was significantly associated with substance use disorder which is in agreement with findings of previous studies in Nigeria and South Africa (Okpataku et al., 2014; Tindimwebwa et al., 2021) and high income countries (Brunette et al., 2018; Kavanagh et al., 2004). Men are often involved in high risk behaviors including substance use which in turn can develop tolerance and end in use disorder and the risk may be higher among men living with mental illness (Wood et al., 2013). In some male patients, it has been reported that alcohol and other substances relieve psychiatric symptoms (Smith et al., 2017; Turna et al., 2020). Previous research shows that overall men consume more alcohol and

Table 2. Factors Associated with Substance Use Disorder Among Study Participants.

	Bivariate analysis		Multivariate analysis	
Variables	Unadjusted OR (95% CI)	*P*-value	Adjusted OR (95% CI)	*P*-value
Age	0.99 (0.97–1.01)	.29		
Gender				
Female	Ref		Ref	
Male	16.08 (5.66–45.67)	**<.001**	9.63 (3.01–30.77)	**<.001**
Level of education				
Primary	Ref		Ref	
Secondary	2.49 (1.27–4.88)	**.008**	2.61 (0.83–8.20)	**.10**
Tertiary	0.81 (0.32–2.06)	.66	1.06 (0.32–3.48)	.86
Marital status				
Single	Ref		Ref	
Married/cohabiting	0.95 (0.51–1.77)	.68		
Others[#]	0.39 (0.13–1.20)	.10		
Religion				
Muslim	Ref		Ref	
Christian	1.59 (0.55–4.67)	.39		
Employment status				
Employed	Ref		Ref	
Unemployed	1.51 (0.65–3.53)	.33		
Family history of substance use				
No	Ref		Ref	
Yes	8.43 (3.97–17.92)	**<.001**	0.89 (0.25–3.18)	.86
Prior history of substance use (alcohol/cannabis)				
No	Ref		Ref	
Yes	38.07 (14.55–99.62)	**<.001**	30.28 (7.98–114.99)	**<.001**
Primary diagnosis				
Depression	Ref		Ref	
Bipolar disorder	2.77 (0.80–9.60)	.11		
Schizophrenia spectrum disorder*	2.67 (0.47–15.06–14.37)	**.26**		
Number of previous admissions				
More than 6 admissions	Ref		Ref	
4 to 6 admissions	0.45 (0.09–2.21)	.33		
1 to 3 admissions	0.89 (0.29–2.74)	.84		
None	1.06 (0.30–3.75)	.92		
Medication adherence				
Low adherence	Ref		Ref	
Medium adherence	0.42 (0.18–0.97)	**.04**	0.29 (0.09–0.91)	.03
High adherence	0.39 (0.20–0.76)	**.006**	0.35 (0.13–0.93)	**.04**
Perceived social support				
Perceived social support subscales				
Family subscale	1.01 (0.95–1.08)	.66		
Friends subscale	1.02 (0.97–1.07)	.49		
Significant others' subscale	1.02 (0.97–1.08)	.44		
Religiosity				
Organizational religiosity	0.81 (0.68–0.97)	**.02**	1.10 (0.82–1.48)	.49
Non-organizational religiosity	0.77 (0.64–0.92)	**.005**	0.86 (0.64–1.16)	.34
Intrinsic religiosity	0.98 (0.90–1.06)	.55	1.06 (0.93–1.21)	.33

Schizophrenia spectrum disorder*: Brief psychotic disorder, schizophreniform, schizophrenia, and schizoaffective disorders.

are at risk of hazardous drinking compared to women who have a more controlled style of drinking and rarely become intoxicated (Chung et al., 2012; Erol & Karpyak, 2015; Kuntsche et al., 2012). The higher odds of substance use among male participants is in keeping with the cultural influences in most sub-Saharan African settings that condone alcohol and substance use among men contrary to cultural and social norms in reference to women (De Visser & McDonnell, 2012; Sudhinaraset et al., 2016). Men are more likely to have access to substances, and social norms allow men to experiment with substances and engage in potentially hazardous patterns of substance use (Hemsing & Greaves, 2020; McHugh et al., 2018). Men are also more likely to initiate cannabis use at a young age and more likely to be dependent on it (Agrawal et al., 2011; Craft et al., 2013; Teixidó-Compañó et al., 2018).

Our study findings also showed that adherence to psychotropic medications was protective against substance use disorder which echoes findings of previous research showing an association between non adherence to psychotropic medicines and substance use disorder among people with mental illness (Mgweba-Bewana et al., 2021; Sajatovic et al., 2021; Simon et al., 2021). Similar findings were reported in a systematic review on adherence to psychotropics among patients with schizophrenia and bipolar disorder (Garcia et al., 2016). Overall most patients with chronic mental illness have comorbid substance use disorder and this is a major barrier to treatment adherence and poor treatment outcomes (Gonzalez &

Rosenheck, 2002; Sajatovic et al., 2021). Moreover, people with mental illness comorbid with substance often have negative attitudes toward their psychotropic medications and negative attitudes toward treatment is a major barrier to treatment adherence (Simon et al., 2021; Velligan et al., 2017). The relationship between substance use and adherence to treatment in chronic conditions including mental illness might be bidirectional in nature where by substance use negatively impacts adherence to treatment while those who adhere to treatment may not use substances (Colizzi et al., 2016; Schoeler et al., 2017).

Prior history of substance use was highly associated with substance use disorder, similar to what was documented in a study in Nigeria (Butterworth et al., 2014; Eze et al., 2009; Marel et al., 2019). The risk of substance use disorder among those with prior history of cannabis use where the risk is much higher (Butterworth et al., 2014). Generally, it has been evidenced that co-dependence of substances exists for example alcohol and cannabis which accounts for a history of use of cannabis predisposing to alcohol use disorder due to its effects on the cognitive abilities of the patient (Metrik et al., 2018). Use of other substances for example alcohol has been reported to upregulate endocannabinoid receptors in that abstinence from alcohol increases the cravings for cannabis (Meda et al., 2017).

Contrary to previous research we did not find a statistically significant association between alcohol use disorder and religiosity. Religion has been documented as a buffer against hazardous alcohol drinking and development of alcohol use disorder among adults and adolescents (Borders et al., 2010; Edlund et al., 2010). It documented that people who attend church form social networks and that church based social networks are associated with improved overall health compared to other forms of social networks (Krause, 2002). Other studies have reported that church goers who are at risk of alcohol drinking usually find social networks in the places of worship that enable them to cope with alcohol related problems compared to other sources of support (Ashaba et al., 2022; Edlund et al., 2010; Krause, 2002).

Our findings should be interpreted bearing in mind the following limitations. The study was conducted in one mental health clinic in southwestern Uganda; therefore, the findings may not be a true representation of all people with mental illness in Uganda. Second, this was a cross-sectional study hence making it difficult to determine the causal effect relationship. Third, the tools used in the study have not been validated for use in Uganda and this could have affected interpretation of our study findings. Fourth, the tools used in this study were not diagnostic in nature and this could have led to overestimation of the symptoms. However, these tools have been used widely in similar sub-Saharan Africa settings including South Africa and Tanzania with good reliability, hence we are confident that our results do not deviate from the true picture of alcohol and cannabis use among people with mental illness in Uganda. Lastly, although we found that treatment adherence was protective against substance use disorder, the adherence to treatment was self-reported and this could have resulted in over reporting.

Conclusions

Substance use disorder is common among patients with primary mental illness. Male gender, prior history of substance use, and secondary level of education were statistically significantly associated with substance use disorder in this study while adherence to medicines was protective against substance use disorder. Interventions aiming at preventing substance use among people with mental illness should aim at promoting adherence to psychotropic medications in this population.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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