



**University of Nairobi**

**PREVALENCE AND PATTERNS OF SUBSTANCE USE  
DISORDERS IN SBIRANA PSYCHIATRIC HOSPITAL,  
BOTSWANA**

By

**DR OTHALEFILE ENAMASI OTLHAPILE**

**STUDENT NUMBER: H58/34062/2019**

A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master  
of Medicine (Psychiatry) of the Faculty of Medicine, University of Nairobi

2022

## **DECLARATION**

I, Dr Othalefile Enamasi Otlhapile do declare that this is my original work, and it has never been presented in any other University. Therefore, permission will be required for the thesis to be used in any other facility/university.

SIGNATURE: O. Otlhapile

DATE: 27/07/2022

## CERTIFICATION

The undersigned certify that they have read and hereby recommended for acceptance by Faculty of Medicine of University of Nairobi, the dissertation entitled: **“Prevalence and patterns of substance use disorders in Sbrana psychiatric hospital, Botswana”** in partial fulfilment of the requirements for the degree of Master of Medicine (Psychiatry), Faculty of Medicine of University of Nairobi

Signature:  \_\_\_\_\_

Date: 27/07/2022

Prof Mary Wangari Kuria

(Supervisor)

Signature:  \_\_\_\_\_

Date: 27/07/2022

Dr Catherine Wanja Gitau

(Co-Supervisor)

## **ACKNOWLEDGEMENT**

I would like to thank my supervisors Professor Mary Wangari Kuria and Dr Catherine Gitau for their guidance on the development of this research and providing me with invaluable guidance throughout this research.

I am extending my sincere gratitude to Prof Godfrey Rwegerera for his generous support and patience as he guided me to gain more understanding of my work.

I'm extending my heartfelt gratitude to my husband Pelonomi Moshi Bane who showed me immense love, support and understanding throughout this journey.

My gratitude also goes out to my mother Leretogetse Nandi Otlhapile for her motivation, encouragements and believing in me always. I would not have done this without the support and prayers of my whole family and friends.

Lastly praises and thanks to God for his showers and blessings and seeing me through all the difficult times throughout my research work.

## **DEDICATION**

I would like to dedicate this dissertation to my family, the mental health community and everyone I have interacted with during my study.

## **ABBREVIATIONS AND ACRONYMS**

### **Abbreviations:**

**ASSIST**- Alcohol, Smoking and Substance Involvement

Screening Test **DSM 4 TR** - Diagnostic and Statistical

Manual of mental disorders 4-TR**DSM 5** - Diagnostic and

Statistical Manual of mental disorders 5

**SCID** - Structured Clinical Interview for DSM 3-TR diagnosis

‘**SPH**’ - (Sbrana Psychiatric Hospital),

**SPSS** - Statistical Package for Social Sciences‘

**SUDs**’ - (Substance Use Disorders)

**WHO** - World Health Organisation

## DEFINITION OF TERMS

1. **Substance use** refers to the use of any psychoactive substance or drug, including licit and illicit drugs, other than when medically indicated. (Daniel et al., 2017)
2. **Psychoactive substances**- according to the World Health Organisation psychoactive drugs are substances that, when taken in or administered into one's system, affect mental processes e.g., perception, cognition, consciousness, mood even emotions. E.g., alcohol cannabis
3. **Comorbid conditions**- this means more than one illness or disease occurring in one person at the same time therefore comorbidity of substance use and mental illness refers to a co-occurrence of a substance use disorder and another mental health disorder in the same person. (McGeorge S 2018)
4. **Substance use disorders**- Substance use disorders according to the diagnostic and statistical manual of mental disorders fifth edition (DSM 5) refer to a maladaptive pattern of substance use leading to clinically significant impairment or distress resulting from prolonged use of a substance.
5. **Mental disorders**- according to the American psychiatric association are health conditions involving changes in emotion, thinking or behaviour (even a combination). These mental illnesses are associated with distress and or problems in functioning
6. **Types of psychoactive substances**: according to the Diagnostic and Statistical Manual of Mental Disorders fifth edition (DSM 5).
  - a. **Depressants**- reduce arousal and stimulation by slowing down activities of the central nervous system, depressants slow down the person's ability to respond to unexpected events but in smaller doses they cause relaxation and less inhibition. Examples include alcohol, benzodiazepines and cannabis.
  - b. **Sedative hypnotics**- these are substances that slows down the activity of the brain. These substances exert a quieting and calming effects at low doses and sleep-inducing effects in higher doses e.g., barbiturates and benzodiazepines.
  - c. **Opioids** are a class of drugs naturally found in the opium poppy plant and that work on the brain produce a variety of effects, including relieving pain and many others. Opioids include prescription medications as analgesics e.g., codeine, morphine and street drugs such as heroin.

- d. **Hallucinogens:** these are drugs that alter a person's awareness of their surroundings as well as their own thoughts and feelings. Hallucinogens are commonly known for causing hallucinations, or sensations that and images that may seem real though they are not, they produce a loss of contact with reality and an experience of expanded and heightened consciousness common examples include cannabis, LSD, mushrooms and ecstasy.
- e. **Stimulants-** these are a class of drugs that speed up messages travelling between the brain and the body resulting in increased activity in the body. They make an individual feel more awake, alert, confident and energetic they include nicotine, cocaine, khat and amphetamines.

# Table of Contents

CERTIFICATION .....	ii
DECLARATION .....	ii
ACKNOWLEDGEMENT .....	iv
DEDICATION .....	v
ABBREVIATIONS AND ACRONYMS .....	vi
DEFINITION OF TERMS.....	vii
LIST OF FIGURES AND TABLES .....	xii
ABSTRACT.....	xiii
<b>CHAPTER 1 .....</b>	<b>1</b>
1.0 INTRODUCTION .....	1
1.1 Background of health system in Botswana.....	4
<b>CHAPTER 2 .....</b>	<b>6</b>
2.0 LITERATURE REVIEW .....	6
2.1 Introduction.....	6
2.2 Global Studies.....	6
2.3 Regional Studies .....	9
2.4 Local Studies.....	12
2.5 Justification of study .....	13
2.6 Significance of study.....	13
2.7 Theoretical framework.....	14
2.8 Conceptual framework.....	16
2.9 Problem Statement .....	17
2.10 Main Objective: .....	18
2.11 Specific Objectives .....	18
<b>CHAPTER 3 .....</b>	<b>19</b>
3.1 Introduction.....	19
3.2 Study Design.....	19
3.3 Study area.....	19
3.4 Study Setting.....	19

3.5 Study Population .....	20
3.6 Eligibility criteria .....	20
3.7 Sampling procedures .....	20
3.8 Sampling and recruitment procedure .....	22
3.9 Data collection procedure .....	23
3.10 Research Instruments .....	23
3.11 Flow Chart Illustrating Methodology .....	25
3.12 Quality assurance .....	26
3.13 Ethical Considerations .....	26
<b>CHAPTER 4 .....</b>	<b>29</b>
4.0 RESULTS .....	29
4.1 Introduction.....	29
4.2 Sociodemographic Characteristics of study participants .....	29
4.3 <i>Prevalence of substance use among study participants</i> .....	30
4.3.1 <i>Prevalence of substance use disorders (SUDs)</i> .....	30
4.4: Patterns of substance use disorders.....	30
<b>CHAPTER 5:.....</b>	<b>36</b>
5.0: DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS .....	36
5.1 Introduction.....	36
5.2 Prevalence and Patterns of Substance use disorder .....	36
5.3 Association of socio-demographic characteristics and substance use/substance use disorders.....	39
5.4 Study Limitations.....	42
5.5 Conclusion .....	42
5.6 Recommendations.....	42
5.6.1 <i>Practical Recommendations</i> .....	42
5.6.2 <i>Recommendations for future research</i> .....	43
<b>REFERENCES.....</b>	<b>44</b>
<b>APPENDICES .....</b>	<b>49</b>
APPENDIX 1: CONSENT FORM A (English) .....	49
CONSENT FORM B (English).....	51
APPENDIX 2: SOCIO DEMOGRAPHIC QUESTIONNAIRE FOR PARTICIPANTS .....	52

APPENDIX 3: WHO - ASSIST V3.0 (English).....	53
APPENDIX 4: CONSENT FORM A (Setswana) .....	65
CONSENT FORM B (Setswana).....	67
APPENDIX 5: SOCIO DEMOGRAPHIC QUESTIONNAIRE FOR PARTICIPANTS .....	68
APPENDIX 6: WHO-ASSIST V 3.0 (Setswana).....	69
A. WHO ASSIST V3.0 KARATA YA KA FA GO ARABILWENG KA TENG YABALWETSI.....	74
B. TLHATLHOBO YA BOJALWA, GO GOGA LE TIRISO YA DITAGI (WHOASSIST V 3.0) KARATA YA PEGO YA BALWETSI .....	75
DIPALO TSA BA TSAYA KAROLO MO DITAGING .....	75
PALO YA GAGO E RAYA ENG? .....	76
KARATA YA BODIPHATSA JWA GO IKENTA- TSE AMANG MOLWETSI.....	79

# LIST OF FIGURES AND TABLES

## List of figures

Figure 1: Theoretical framework .....	16
Figure 2: Conceptual framework .....	17

## List of Tables

Table1: Socio-demographic characteristics of study participants (n=101).....	29
Table 2: Prevalence of lifetime substance use among the participants.....	30
Table 3: Prevalence of substance use disorders .....	30
Table 4: Patterns of substance use disorders.....	31
Table 5: Bivariate analysis of socio-demographic factors associated with tobacco use disorder .....	31
Table 6: Bivariate analysis of socio-demographic factors associated with alcohol use disorder .....	32
Table 7: Bivariate analysis of socio-demographic factors associated with cannabis use disorder .....	33
Table 8: Bivariate analysis of socio-demographic factors associated with cocaine use disorder .....	34
Table 9: Multivariate logistic regression including significant socio-demographic factors associated with substance use disorders .....	35

# ABSTRACT

## **Background**

Substance abuse has risen substantially, especially in developing nations, and has become one of the world's most significant public health and socioeconomic challenges. This is especially prevalent in Botswana, where substance abuse among adolescents and mental health patients has remained a serious public health problem, despite being inadequately recorded in many situations.

## **Objectives**

The study's goal was to determine the frequency and patterns of drug abuse among patients at Botswana's Sbrana Psychiatric Hospital.

## **Method**

At the Sbrana Psychiatric hospital, a descriptive cross-sectional study was undertaken among admitted patients in different wards for a period of 2-3 weeks. The systematic stratified sampling technique was used for admitted patients in order to acquire a sample size of 101 participants. Patients were approached at their respective wards and the researcher used the patients register to randomly select patients to take part in the study. The researcher selected every 2<sup>nd</sup> patient in order of the names as they appeared in the admission register in each ward. This was repeated until the number of patients required in a specific ward has been reached.

## **Research tools**

Patients were screened for substance use disorders using the alcohol, smoking, and substance involvement screening test (ASSIST) v13.0. Additionally, a structured questionnaire was utilised to capture the study participants' demographic characteristics.

## **Data analysis**

Data was analysed using the Statistical Package for Social Sciences version 23.0. Descriptive statistical analysis was used to describe the prevalence, patterns and socio-demographic characteristics of the participants. Univariate analysis was done with the use of Chi-square tests to investigate the link between socio-demographic characteristics and SUDS, and factors found to be significant were subject to multivariate analysis with use of logistical regression. Statistical significance thresholds were set at  $p < 0.05$ .

## **Results**

A total of 101 psychiatric patients were interviewed. There were more males 59.4% than females 40.6% who reported having a higher right of substance use, with the age range of 18-60 years. The most frequently used substances were alcohol at 34.7%, Tobacco 58.4%, and cannabis 42.6% and cocaine at 12.8%. Significant associations were found between age, gender, and occupation status and education level for different SUDs.

## **Conclusion and Recommendations**

There is a high prevalence of substance use (85.1%) and substance use disorder (63.4%) among psychiatric patients. It is highly recommended that public awareness should be matched with personnel training at institutional health facilities to lay out integrated interventions that take into account all connected issues, particularly the association of substance use disorders with diverse psychiatric disorders that every patient in need of assistance faces.

# CHAPTER 1

## 1.0 INTRODUCTION

Substance abuse has become one of the world's fastest-growing public health and socio-economic challenge; it has risen substantially, especially in emerging nations (Olawole-Isaac et al., 2018).

Substance abuse is frequent among people with mental problems, and evidence shows that it can aggravate the disorder's course and result. Nearly half of individuals with mental health issues have struggled with drug addiction at one point or another in their lives, thus this is a big source of worry (Hunt et al., 2018). Substance abuse results in a wide range of clinical manifestations that not only obfuscate but also exacerbate the symptoms of other diseases. All facets of psychiatric presentations, including mood instability, violence, psychosis, cognitive impairments, and other unfavourable symptoms, are linked to this. Furthermore, drug abuse is frequently linked to greater self-destructive behaviours and a higher risk of suicide attempts.

Glasner-Edwards & Mooney (2014) stated that drug abuse may both cause and exacerbate any mental illness. The fact that comorbidity of drug use and mental problems is the rule rather than the exception in clinical settings demonstrates this. Psychosis and other psychiatric presentations are so intertwined with drug use that experts feel that even with a thorough history, it is sometimes impossible to tell if the symptoms are caused or preceded by the substance of abuse (Voce et al., 2019). In the same vein Reginsson et al. (2018) has also proposed that psychosis and addiction are caused by the same genetic mutation.

Several ideas have been proposed to explain the bidirectional and complicated interaction between drug use disorders and mental diseases. The self-medication theory proposes that mental illness may have a role in substance usage and addiction because people use substances to alleviate certain symptoms (Morisano et al., 2014). In patients with depression, it was found that substances were mainly used to get rid of the distress caused by the low moods (Lai et al., 2015). Other authors have argued that for a psychiatric disorder to occur in individuals with a substance use disorder (SUD), genetic predisposition and environmental factors play a crucial role (Parakh & Basu, 2013). A study by Morisano et al. (2014) has proposed that drug addiction and SUDs are caused by a single, overlapping genetic susceptibility in those who are afflicted.

The majority of past research has concentrated on the risk factors of drug misuse as classified into several diagnostic categories, such as bipolar mood disorder and schizophrenia. A meta-analysis by Hunt et al in 2016 among patients with schizophrenia, revealed a 42% prevalence of substance abuse. Substance abuse was linked to an earlier beginning age, and the incidence of illicit drug use rose over time. The latter emphasizes the need of detecting drug use correlates in high-risk groups. Furthermore, despite the fact that meta-analyses on bipolar illness have revealed a high frequency of greater than 40%; particular risk factors have remained a source of debate. Diagnostic categories, on the other hand, are inherently unstable over time and can shift from one to the next (Hunt et al., 2016; Messer et al., 2017).

The use of Substance was found to be a major risk factor for morbidity, disability and death worldwide (Lim et al., 2012). The World Health Organization (WHO) projected in 2014 that 269 million individuals aged 15 to 64 had used drugs in the preceding year, with over 35 million suffering from substance use disorders. Alcohol was determined to be the most often used substance internationally at 18.4%, followed by cigarettes at 15.2%, cannabis at 3.8%, amphetamines at 0.77%, opioids at 0.37%, and cocaine at 0.35% (Peacock et al., 2018). In 2010, one of the highest sources of illness burden was substance addiction and mental health issues, accounting for 7.4% of worldwide disability adjusted life years (DALYs) and 22.9% of global years lived with disability (YLDs), making them the leading cause of YLDs and the fifth highest source of DALYs (Whiteford et al., 2013).

The link between mental illness and substance usage has been thoroughly recognized and well documented; patients' need for medicines and alcohol to treat their mental problems is understandable. In some cases, this issue has been noted, including (Lesser, 2021):

- Depressed people often use marijuana to block off their negative emotions. Marijuana users are more likely to experience euphoria or relaxation. In that situation, it would aid in the treatment of depression.
- Another example of social anxiety is a patient who drinks to feel at ease in social circumstances. For every drinker, alcohol is a proven nerve relaxant. Alcohol consumption can worsen social anxiety
- A benzodiazepine, such as Xanax or Valium, may assist anxiety attack patients calm down when symptoms arise or prevent anxiety attacks from occurring in the first place by preventing anxiety attacks from starting in the first place.
- A patient who lacks motivation, on the other hand, would use stimulants

such as Adderall, crystal meth, or cocaine to boost their energy levels.

- Some sleep-deprived patients who are aware of the medications and know they will help them sleep abuse them.

If a patient does not learn to avoid certain situations, he or she may feel compelled to self-medicate (Lesser, 2021). The word "substance abuse" suggests that someone has been self-medicating in the most literal sense. Substance misuse will quickly reveal itself in self-medication in this way. Self-medication has been found to be quite common among those with mental illnesses (Lesser, 2021).

Substance abuse has a substantial detrimental influence on people's health, productivity, as well as their families' and communities' economic and social well-being (Tindimwebwa et al., 2021). Individuals with substance use disorders have a negative impact on their social functioning, which also lead to the development of negative outcomes such as disability, risky sexual behaviours, accidents, homelessness, criminal behaviours and death (Daley, 2013).

According to several research, there is a greater occurrence of the substance use among patients in psychiatric hospitals compared to the 3-4 % reported in the general population (Huang et al., 2015). Substance use and mental illness have also been found to be strongly related and the bidirectional model argues that either condition makes you more vulnerable to the other (NIDA, 2020). SUDs and mental illness have a negative complicated interaction, according to research, since they have an influence on the clinical course and outcomes of patients, leading to greater rates of recurrence and hospitalizations in patients with SUDs (Temmingh et al., 2020). The most common reasons identified in most studies as to why the patients with mental illnesses tend to use substance includes self-medication, to alleviate the stress that comes with having a mental disorder. The high prevalence of SUDs has also been found by Ndetei et al. (2009); Torrens M et al. (2015) to increase the complexity of treatment of disorders resulting in poor outcomes for those affected attributes the complexity of treatment in patients with SUDs to the fact that they tend to seek medical help late, and this could be because of the stigma linked with the use of substances.

There has been no research on the prevalence of substance use and SUDs among psychiatry patients in Botswana; however a study done by the Botswana epidemiological network (2003) reported that alcohol continues to be one of the most common substance of abuse in the general patients. According to WHO (2014) it was shown that Botswana has a total alcohol per capital of 8.4 litres per annum which is higher than most African countries which average at 6.4 litres and the global average is 6.2 litres. This could be attributed to the fact that in

Botswana alcoholic beverages have been used as a part of culture in recreational and ceremonial activities while cannabis has been found to have some medicinal benefits. Heavy drinking has been linked to unsafe sex behaviours, gender-based violence, and the spread of HIV in both men and women in Botswana (Phorano et al., 2005). Olashore et al. (2018) found that the most commonly used illicit substances in the University of Botswana population was alcohol, marijuana and benzodiazepines.

The goal of this research is to evaluate the prevalence of substance use and substance use disorders (SUDs) admitted patients at Sbrana mental hospital in Botswana. The study also aimed at determining the socio-demographic patterns of patients with substance use disorders. The identification of socio demographic characteristics in patients with SUDs can aid in developing effective protective and preventative strategies in the vulnerable population. The findings of this study will guide the development of future prospective and intervention studies in the area of substance use and substance use disorders in Botswana; ultimately serve in developing policies that are beneficial to the community at large.

### **1.1 Background of health system in Botswana**

Botswana, one of the countries in Southern Africa that is upper middle-income with a population of over 2.4 million people and a surface area of 581,730 kilometres square (Sidandi et al., 2011). The health care system in Botswana is organised in a pyramidal structure with national referral hospitals (NRHs) at the highest ranking while health posts are at the lowest ranking. Development of the Botswana mental health policy was done in July 2003 in order to help improve the mental health services in the country addressing challenges emerging trends and mitigating challenges of issues with mental health. The goal of the policy was to ensure that each individual benefits from proper mental health care thus allowing everyone to take part in the betterment of mental health system in Botswana. The psychiatric patients are seen across all hospitals even though the psychiatric nurses (over 100 throughout the country) are normally the first contact. Currently, there are 11 psychiatrists in the country with 5 in academia, 3 in private practise and the remaining 3 work for the government. The psychiatrists in academia are employed by University of Botswana and provide service that includes teaching undergraduate and postgraduate students as well as attending patients at Sbrana Psychiatry Hospital (SPH). SPH which is a national referral hospital, was refurbished to expand services and reopened in 2010, is the only one in the country.

There is another psychiatric hospital situated in the northern part of the country jubilee psychiatric hospital with 34 beds. Jubilee psychiatric unit holds patients for a few of days while awaiting transfer to the main referral hospital.

## **CHAPTER 2**

### **2.0 LITERATURE REVIEW**

#### **2.1 Introduction**

A comprehensive and sophisticated literature review is required for a large and difficult research effort (Pubrica, 2019). The literature review chapter's goal is to synthesize and summarize without providing any new additions, the general arguments, and concepts of the latest knowledge in a specific area (Pubrica, 2019). In addition, the literature review interprets existing literature in light of the latest development in the subject of study in order to assist in the establishment of knowledge consistency and the utility of existing resources (Pubrica, 2019).

Key arguments from various literary sources were explored in this chapter in order to pull out and integrate diverse authors' claims on the frequency as well as the patterns of drug use in the patient population in mental hospitals. This was done by first providing an overview of global studies, regional studies and local studies.

#### **2.2 Global Studies**

In addition to epidemiological studies, examinations of psychiatric patients have revealed a high frequency of co-morbid substance use disorders (SUDs) and mental health illnesses (Hunt et al., 2018). For instance, register-based studies of individuals with mental diseases in Denmark and Norway found a lifetime incidence of SUDs of 25% for anxiety and depression, and a 5-year prevalence of SUDs of 25% for patients with schizophrenia (Toftdahl et al., 2016; Nesvag et al., 2015). Patients with mental illnesses may be more susceptible to the detrimental effects of drug abuse. For example, current evidence suggests that even non-addictive drug use may increase the likelihood of developing SUD in people with schizophrenia (Lappin, 2019).

One of the few research projects undertaken in a group of individuals recruited from the general mental population found that inpatients have a greater frequency of SUDs than outpatients, especially those with personality disorders (Hetland et al., 2021). The research, however, did not provide information on the drugs utilized. A research on a non-selected group of patients in community of the mental health therapy in Norway by Lachal et al., 2019, revealed SUD's in 20% of individuals with anxiety and mood disorders.

Previous research has linked co-occurring mental illnesses and SUDs to being male, young, and single in terms of socio-demographic characteristics (Hunt et al., 2018; Messer et al., 2017; Rund et al, 2018). Furthermore, studies have shown that psychiatric patients with SUDs had lower educational attainment and have more unfavourable socio-economic features in general (Wang & Geng, 2019). However, a Canadian study by Lim et al. (2012) found that inpatients' socio-demographic variables did not explain disparities in drug use prevalence, but outpatients' sociodemographic features were associated with SUDs. A study by Bachmann (2018) found that inpatients (36%) and outpatients (22%) with less education (primary school or less) had a greater prevalence of drug abuse as compared to those with higher education levels. Additionally, a study by de Oliveira et al. (2020) reported that individuals with health-related benefits had a greater prevalence of drug use than those of low-income class, or farmers etc, both inpatients and outpatients. In the same vein, being married, cohabiting, or having a partner was found to be associated with a lower prevalence of drug abuse use than any other marital status.

Other studies of mental illness patients revealed that alcohol, sedatives, and cannabis were the most often utilized drugs in terms of prevalence of substance use (Marel et al., 2019; Rogers et al., 2019). This is further corroborated by Andersson et al. (2020) found that inpatients used illicit substances more frequently than outpatients, and that patients with schizophrenia and other psychoses used illegal substances more frequently than patients with other mental illnesses. Moreover, a study by Duko et al. (2015) highlighted that 16.7% of individuals with mental problems had a substance-use disorder, with 27% having substance use problems, 9% having any alcohol-use disorder, and 6% having any drug use problems. Another study by Lim et al. (2012) investigating the Epidemiologic Catchment Area research on SUD, patients with mental illnesses had a substance-use disorder (28.9%), an alcohol use problem (36.6%), and a drug use problem (36.6%). According to one of the research projects based on the National Longitudinal Alcohol Epidemiological Survey (NLAES), of 9.9% of the population with a lifetime diagnosis of the major depression, 19.9% had a drug-use disorder, 24.3 percent had an alcohol use problem and/or major depressive disorder, and 16.2% had both major depressive and alcohol use disorders (Shand et al., 2010; Loveric et al., 2013).

Chrishantha & Harshana (2018) evaluated the incidence of alcohol, tobacco, and illegal drugs, as well as substance use and related variables, among patients visiting mental health clinics in several Sri Lankan hospitals. They obtained the lifetime prevalence of alcohol, cigarette, and illegal drugs use of 53.7%, 24.3%, and 5.9%, respectively. Alcohol, cigarettes, and illegal

drugs were being used by 42.6%, 15.3%, and 2.7% of the patients, respectively. Furthermore, a statistically relevant link was found between male patients, current alcohol, cigarette, and illegal narcotics use. Furthermore, current usage was associated with patients having an income of more than 5000 LKR.

Maqbool et al. (2020) undertook research to determine the prevalence of drug usage among psychiatric patients with psychosis and the greatest predictor. This was cross-sectional research with 311 patients hospitalized to Tehran's Razi psychiatric hospital in Iran. For the diagnosis of drug use, they employed a structured interview based on DSM-5 (SCID) and a questionnaire for the socio demographic correlates. Opioids were the most often used medicines among patients with psychosis, followed by hypnotics and sedatives, as well as methamphetamine (crystal and shisha).

The above findings were supported by another cross-sectional design study in Norway by Andersson et al. (2020), studying drug usage among the psychiatric population in both inpatients and outpatients at various hospitals. Structured questionnaires were utilised to collect data on drug use based on the documented ICD-10 diagnosis and to analyse demographic and socio demographic factors. SUDs were found to be prevalent in 32.4% of inpatients and 13.9% of outpatients. Cannabis and sedatives were the most often used substances among inpatients, accounting for 12.3% and 10.9% of overall prevalence use among respondents, respectively. In comparison to other illicit substances, alcohol was used by 11.3% of outpatients, while cannabis and sedatives were used by 4.0% and 3.7% respectively. Males were shown to have a higher prevalence of substance use among inpatients than females, with 42% and 24% respectively. The prevalence of drug use in the outpatient population was still greater than in the female population, at 20% and 10% respectively. Patients with lower levels of education, such as primary education or less, had a greater prevalence of drug use in both populations, at 36% and 17% respectively. When compared to other marital statuses, being married, cohabiting, or having a partner reduced the prevalence of drug use.

Additionally, a Canadian community health survey: mental health and well-being by Rush et al. (2008) revealed that; the 1-year prevalence of alcohol use issues in the population with mental illnesses was twice that of the group without mental disorders, at 16.9% against 8.9% in the other population. They discovered that the prevalence of comorbid drug use issues among patients with mental illnesses declined with age, from 32.4% in the 15–24-year group to 26.4% in the 25–34-year group, 20.8% of those 35 to 44 years old, 13.2% of those 45 to 54

years old, and 5.1% of those 55 and older. Men with mental health difficulties were more than twice as likely to encounter alcohol use problems (26.2 percent vs. 10%) and three times as likely to report illicit substance use problems (15.8% vs. 5.5%).

A comparison study by Srivastava et al. (2018) aimed to compare the socio-demographic profile, trends, and prevalence of alcohol and drug use among cases and controls. For DSM 4 axis 1 disorders, structural clinical interviews were used, and the diagnosis was determined according to DSM 4. For socio- demographic variables, semi structured questionnaires were used. A total of 80 people seeking therapy were included in the study, as well as 80 healthy people who accompanied the patients (controls). This was done in the outpatient department of Banaras Hindu University's Institute of Medical Sciences in Varanasi. Substance use was found to be substantially greater in cases (56.2%) than in controls (22.5%). Substance abuse was shown to be widespread among males with little education, who lived in rural areas, and who had a low socioeconomic level. Tobacco was the most often used drug in 48.8% of the cases, with alcohol coming in second at 25% and cannabis coming in third at 7.5%.

### **2.3 Regional Studies**

A study by Temmingh et al. (2020) used structured clinical interviews for DSM-4 (SCID -1) in both inpatients and outpatients to determine the psychiatric and substance use diagnosis at Valkenburg Hospital, a psychiatric hospital at University of Cape Town, on the prevalence and clinical significance on patients with substance abuse problems and having symptoms of psychosis. The sample size was 248, and 55.6% of the participants had SUDs. Cannabis was the common use substance accounting for 34.3% percent, followed by alcohol use disorder (30.6%), methamphetamine use disorders (27.3%), and methaqualone use disorder (10.4%), with cocaine and hallucinogens accounting for 4.4% and 1.6% respectively. All of the analyzed study participants met the criteria for more than one SUD, with 4% misusing multiple substances and 22.9% meeting the criteria for multiple drug dependence. There were substantial positive relationships between male sex and younger age and the occurrence of any SUD. Cannabis usage was associated with poorer educational attainment and had a positive correlation with coloured ethnicity for methamphetamine use disorders.

Okpataku et al. (2014) performed cross-sectional research in 207 outpatients at the Ahmadu Bello University teaching hospital in Nigeria to explore the prevalence and socio-demographic risk variables linked with psychoactive drugs. A socio-demographic questionnaire was completed by the participants, as well as a drug usage questionnaire that

sought for information on the type and onset of the substance taken. They used the schedule for clinical examination in neuropsychiatry to diagnose drug abuse (SCAN). The survey found that alcohol, cannabis, and cigarettes were the most often utilized drugs, even when combined with other substances. The prevalence of using at least one psychoactive substance was 29.3%, whereas the prevalence of using multiple substances was 17.7%.

On the other hand, Nwoga et al. (2021) in Nigeria undertook a 5-year profile evaluation of females hospitalized to a rehabilitation centre in Jos, Nigeria, for mental problems as well as drug abuse. The retrospective cross-sectional study was conducted on 183 females who were hospitalized from the year 2012 to 2017, and data was collected from their document notes. According to the findings, depressive illness was the most frequent mental condition among the individuals (36.1%). Multiple substance use (12.6%) was the most common among those misusing drugs, with alcohol use disorder (9.3%) being the most common diagnosis among people with substance use problems. Furthermore, the study confirmed prior research findings that younger, single, and educated patients encountered greater SUD difficulties.

Furthermore, Abiama et al. (2014) explored the existence a link between drug use and the start of mental disease, researchers looked at inpatients admitted at a Psychiatric Hospital in Uyo, Nigeria. A total of 124 inpatients at the University of Uyo Teaching Hospital's Psychiatric Unit were evaluated for drug use using an improved version of a 117-item self-report instrument based on WHO recommendations for student substance-use surveys. The use of drugs was found to be prevalent in 48.4% of people during the course of their lives. Alcohol was used by 36.3% of people, cannabis by 28.3%, cigarettes by 14.5%, cocaine by 0.8%, snuff/fumes by 2.4%, and pain relievers and kola nuts by 1.6%. About 51.7% of the participants admitted to using two or more drugs. Substance use preceded the first psychiatric episode in 29.6% of the individuals, the second at 42.9%, the third at 50.0%, and alcohol/substance use preceded 46.5% of all relapses. Another research by Jegede (2018) came up with similar results indicating the correlation between mental health illness and substance abuse in inpatients. In that study; tobacco, cannabis and cocaine were the most common used substances. Duko and Ayano (2018) found that alcohol, cigarettes, and cannabis were 'Gateway' substances, and that their usage is high among patients with mental illnesses.

Patients at Mathari Psychiatric Hospital were the subject of a case study by Ndeti et al., (2009). This cross-sectional descriptive research, conducted in June 2004 with a sample size of 691 admitted patients, looked at the incidence of drug misuse and psychiatric co-

morbidities. The DSM 3-R Diagnosis (SCID), Spitzer et al. (1990) structured clinical interview presented a symptom profile as well as a DSM-4 diagnosis of mental illnesses (Spitzer et al., 1990). When data was analyzed, it was discovered that more than a third of the participants fit the DSM-4 criteria for a substance abuse disorder, and that they all had a diagnosis of alcohol dependency, with just 42 having a first working diagnosis of drug addiction. Patients with a diagnosis of drug use disorder were 19.2% dependent on opiates, three-quarters were dependent on sedatives, and 20.3% were dependent on stimulants. Psychiatric problems and alcohol misuse had the largest number of significant associations.

Hauli et al. (2011) looked into the prevalence of drug usage among mentally ill patients at the Bugando Medical Centre in Tanzania. A total of 187 mentally ill patients were included in this cross-sectional descriptive research. The WHO smoking and drug involvement screening test was utilized to measure substance use involvement. Substance abuse was found in 68.5% of the population. Alcohol was the most often used substance at 59.3%, then cigarettes at 38.6%, cannabis at 29.3%, heroine at 2.1%, and cocaine at 1.6%. Cannabis use was positively associated with participants in secondary school. Those in formal work were the most likely to use alcohol. When compared to those who had no family history of alcoholism, the link between alcohol usage and family history of alcoholism was statistically significant.

The frequency and demographic correlates of drug use by people suffering from mental problems were explored in cross-sectional research done at the outpatient clinic at Cecilia Makiwane Hospital mental unit in the Eastern Cape region, South Africa (Tindimwebwa et al., 2021). The validated national institute on drug abuse (NIDA), Rockville, MD, United States fast screen, and WHO STEPwise questionnaires were used to create a questionnaire. The data collection instrument was divided into three sections: demographic information, alcohol and psychoactive substance usage, and current mental disorder diagnosis. It was found that; 64.4% and 33.3% of the individuals had ever used alcohol and had used alcohol in the past respectively. Risky alcohol usage was found to be prevalent in 18.5% of the study participants. Risky alcohol usage was substantially related with male sex, younger age, and rural residency. The prevalence of previous and current psychoactive drug usage was 39.7% (ever use) and 17.4% (past use) (past year use). Cannabis was the most often used substance ever, accounting for 37.4%, and then methaqualone (11%), methamphetamine (10.3%), prescription drugs (3.1%), while cocaine was at (3.1%), and opioids (3.1%). Being a male, younger, having a business, and being jobless were all linked to using psychoactive drugs.

In Zimbabwe, a research conducted by Rwafa et al. (2019) looked at the prevalence of drug usage among mental patients. A socio-demographic questionnaire was used to collect data from 322 patients hospitalized to two referral psychiatric institutions in Harare, Zimbabwe, between November 2014 and March 2015. The WHO AUDIT, and the DAST 10, urine screening was performed using on-site qualitative immune-chromatographic cassettes, and case notes were reviewed for working diagnoses and details of substance use histories. The study's outcomes shows that current alcohol usage varied from 24% for illegal alcohol to 56% for beer. Tobacco products (47%), cannabis (39%), and cough syrups were the most often used drugs behind alcohol. Thirty-eight percent of patients were reported to have an alcohol use problem (WHO score more than 8) and 34% had a substance use disorder (WHO score more than 8) (DAST 10 score greater than 3). A positive urine screen for cannabis was found in 54% of individuals who agreed to a urine test. Although 40% of the patients had a drug-related main diagnosis, 20% of the participants' case notes had no record on substance use, and the substance use histories described were sparse.

## **2.4 Local Studies**

In terms of demographics, recent research has revealed that alcohol and illegal drug usage is common in Botswana's secondary school pupils. According to the WHO-developed Global School-based Health Survey (GSHS), 20.9% of surveyed 13 to 15-year-old students at secondary level of education in Botswana "consumed a lot of alcohol that they were really drunk one or several times" in 2005, and 7.5% used illicit drugs several times in their lifetime (WHO, 2005). A cross-sectional study in Botswana that enrolled 3,763 students aged 10 to 19 years revealed the following findings; - majority of students were on multiple substance use with alcohol and tobacco (42.5%); illicit drugs and tobacco (26.6%) and alcohol, tobacco and illicit drugs (18.7%). Overall, male students were significantly more likely to abuse alcohol and other substances (Latamo et al., 2016).

Selemogwe et al. (2014) investigated the patterns of drug use and sociodemographic features of clients seeking treatment at a Gaborone-based substance addiction treatment center. Clients' ages varied from 13 to 64 years old, with a mean of 28.55 years and a standard deviation of 12.59 years. More than half of the customers (76.9%, n=307) admitted to using legal drugs, with alcohol being the most often reported substance (n= 236, 59.1%). In contrast, slightly more than half of the customers (53.1 percent, n=212) admitted to using illegal substances, with marijuana being the most often reported illicit drug (74 percent, n=104). Gender and age were significant associations in this study. The study's findings have ramifications for the

creation of effective drug addiction policies and interventions, and suggestions are made as a result. However, few studies have been done in Botswana to show the prevalence of drug use among mentally ill patients, especially at Sbrana Hospital, where this study was conducted.

With scarcity of data on SUDs among admitted patients as compared to studies done at the community level in Botswana, this study among the inpatients will add data and help in strategies for prevention and follow up for psychiatric patients with SUDs.

## **2.5 Justification of study**

There is a dearth of literature on the prevalence/incidence of substance abuse in Botswana's mental facilities. The bulk of the research has focused on substance abuse among secondary school students (Riva et al., 2018a), as well as alcohol and drug addiction in Botswana schools (Olashore et al., 2020). As a result, there is limited information on the prevalence of drug abuse among mentally ill patients. It is therefore critical to determine the scope of the problem among psychiatric patients in Botswana, as well as to be able to make recommendations for preventing and controlling the problem, as well as to assist in capturing baseline data that will help in devising future interventions studies, which in turn will lead to the formulation of policy for practice at Sbrana Hospital, with the possibility of a wider roll out to similar settings throughout Botswana.

## **2.6 Significance of study**

According to several research studies there is a greater occurrence of substance use among patients in the psychiatric facilities compared to the general population; therefore investigating and finding out factors surrounding its use among this population will help in identifying interventions to curb the problem and also intervene in those already affected. Empirical research on the common features of drug abuse among psychiatric patients is both required and crucial in developing well-informed and appropriate substance abuse policies, as well as preventive and intervention measures that are tailored to the specific requirements of at-risk subgroups. The goal of this research was to uncover this empirical data in Botswana in order to impact the revision of the National Mental Health Policy and the creation of suitable preventative and intervention measures that can be used throughout the country. Botswana is now planning to open its first inpatient rehabilitation centre, which will offer a critical platform for the study's findings to be used to create a picture of the scale of the problem.

The significance of evidence-based mental health services and research is emphasized in Botswana's mental health policy; hence, the study will provide essential baseline data for upcoming studies and improvements in the field of drug misuse in Botswana.

## **2.7 Theoretical framework**

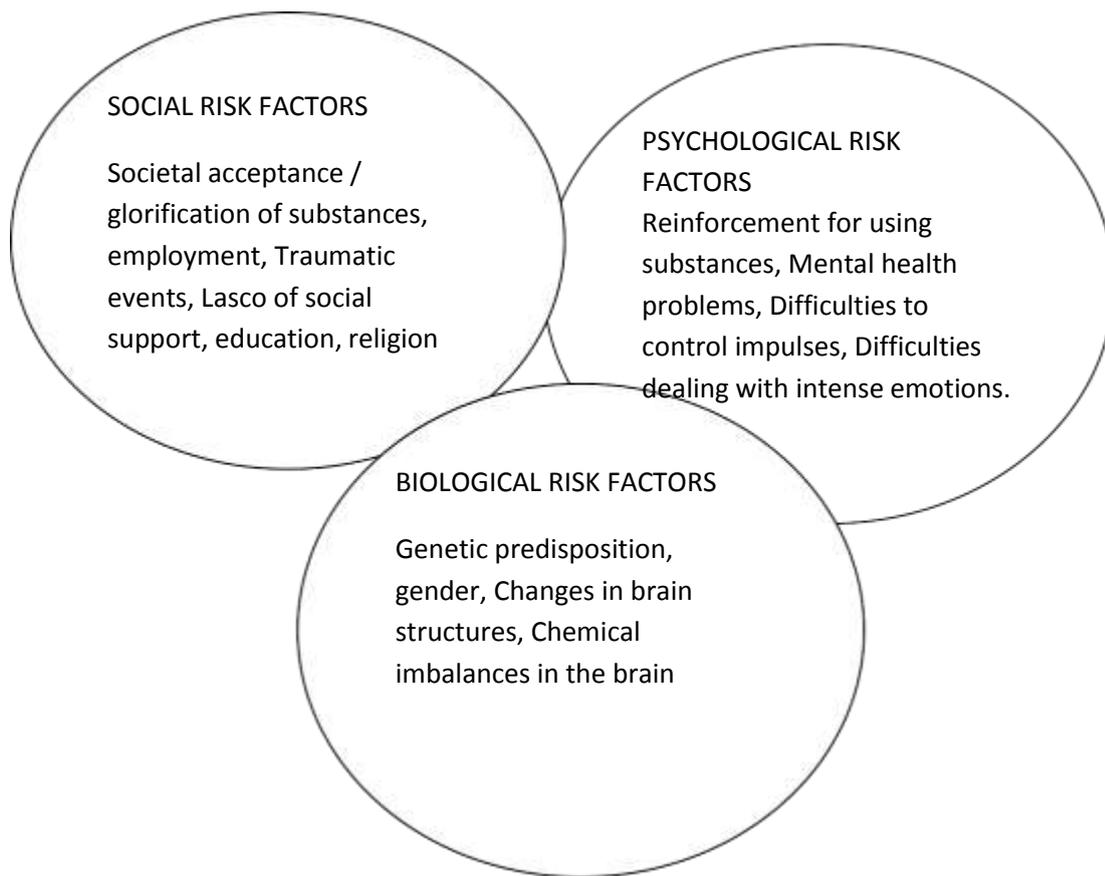
The bio-psychosocial model of addiction proposed by Marlatt (1992) provides the foundation for this study. The idea explains the disease in a comprehensive and multifaceted way. Several factors, according to this theory, contribute to the occurrence and progression of substance abuse disorders. Factors such as cultural norms, genetics, and the biological make up of an individual and many more may contribute to the risk of addiction. According to research no one single factor causes addictions; rather, a combination of variables leads to a person's increased or decreased risk of addiction / SUDs. Biological, social, and psychological variables can all play a role.

One of the biological factors that have been widely studied in their contribution of the emergence of substance abuse problems in a psychiatric population is genetics. Previous studies on the subject have proven that a positive family history of substance use increases the risk of the development of substance use in the psychiatric population in comparison with people with no history of substance use in the same population (Mousavi, et al., 2021; Grant, 2021). Gender has also been found to predispose or lower the risk of substance use disorders in the psychiatric population. It has also been found that neurotransmitter imbalances in certain psychiatric illnesses such as depression may predispose an individual to using substances as demonstrated in previous studies (Volkow et al., 2007; Marazziti, 2017; Tsapakis & Travis, 2002; Müller & Homberg, 2015).

Psychological factors - self-medication of psychiatric patients has been associated with predisposition to substance use disorders as more often than not, these patients will turn to using substances in order to mask symptoms of sadness, anxiety and traumatic events basically as a way of manipulating certain feelings. This may lead to the reinforcement of behaviour and harmful substance use.

Social factors - studies investigating substance use in mental health facilities have found employment to be one of the factors that may have an effect on the consumption of substances. Employment can act as both a protective or precipitating factor to developing substance use disorders in the mental health population. Other social factors that can influence substance use in the psychiatric population include belonging to a particular denomination, having support,

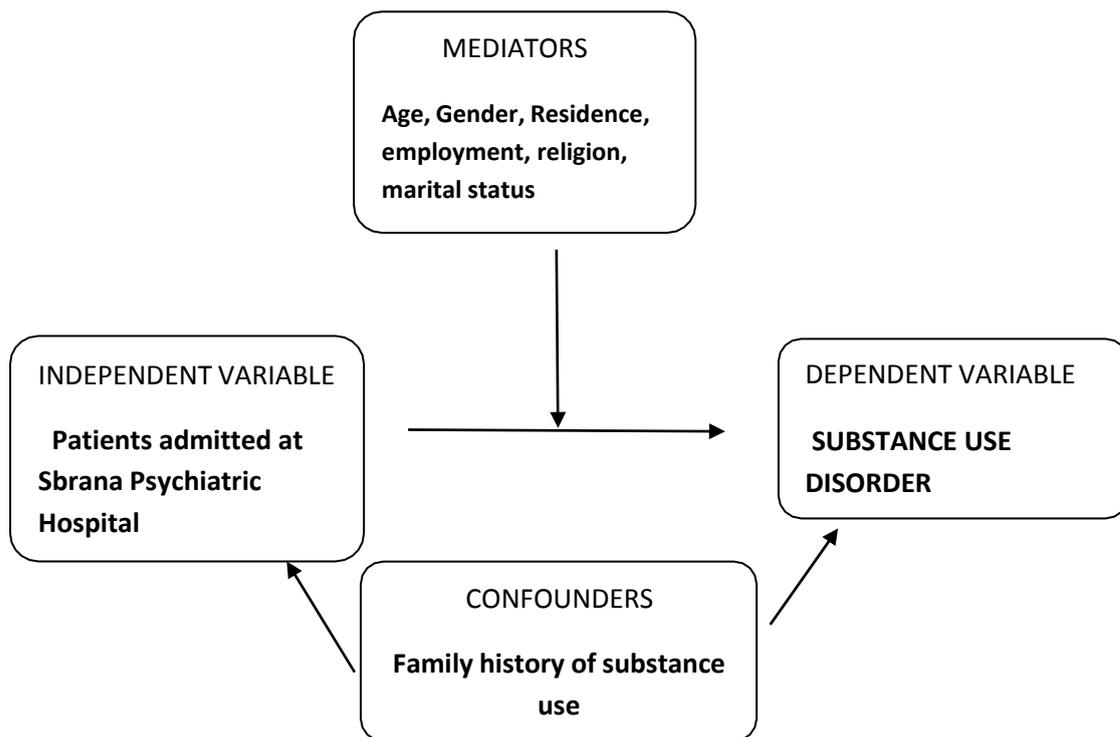
and marital. This model is essential for the study as, under the biopsychosocial approach, a substance use disorder addresses the root of the addiction rather than the symptoms. Treatment based on this perspective offers steady, long-term results since it addresses the fundamental cause of reliance, preventing relapse or overdosing. For the purposes of this study, the model allows for a better knowledge of a patient's medical history, cultural history, upbringing, mental health, and capacity. These interrelated aspects are critical for effective treatment and for identifying the existence of substance disorders. This understanding also enables care that is centered on humanizing the client and his or her issues.



**Figure 1: Theoretical framework**

## **2.8 Conceptual framework**

For the purposes of the study a self-developed conceptual model will be utilized to describe the association between variables and the hypothesized end results of the study. The independent variable is patients admitted in Sbrana Psychiatric Hospital and dependent variable are SUDs. Moderating factors consist of the socio-demographic factors. Under this model, it is argued that, patients admitted at Sbrana Psychiatric Hospital are more prone to substance use disorders depending on the influence of their family history of substance abuse, their age, gender, residence, employment, religion and marital status. All these factors have a strong influence on whether a patient will indulge in substance use. As an example, young men suffering from depression or anxiety, are more likely to indulge in alcohol or Marijuana abuse as found by Lesser (2021) in his study assessing the link between mental illness and substance usage.



*Figure 2: Conceptual framework*

## 2.9 Problem Statement

Studies have proven that cigarette, heroine, and alcohol use is increasing in Southern Africa and Sub-Saharan Africa as a whole, and that it has now become a serious public health and socio-economic concern, particularly in developing nations (Olawole-Issac et al., 2018).

Drug and alcohol misuse by persons suffering from mental problems has become one of the most serious issues confronting agencies and health care workers working with them. Excessive drug use by persons suffering from mental illnesses has many of the same negative social, health, economic, and psychiatric implications that it does for other people. Furthermore, it has significant repercussions for these individuals who are multi-handicapped. Substances of abuse enhance dopaminergic activity, raising the likelihood of symptom aggravation and relapse while also jeopardizing the efficacy of neuroleptic medicines (Mousavi et al., 2021).

Substance abuse is also considered to reduce treatment adherence and is frequently a cause of family conflict, a dangerous situation for patients with mental illnesses who are especially sensitive to stress. Because their effects are only temporary, these drugs do not address the

underlying psychological issues. Once a patient reaches this stage of development, she or he is more susceptible to developing new health problems that will have a long-term impact on her or him (Lesser , 2021). As a result, the intensity of the mental health symptom or symptoms will be amplified, increasing the chances of the condition presenting significantly.

Furthermore, persons with severe mental illness are now one of the most vulnerable populations to HIV. Substance abuse increases the chance of unsafe sex behaviours, which is the major cause of infection in this population, according to a large body of evidence. Women who misuse drugs are more likely to be physically and sexually abused. Substance abuse can also have negative cognitive consequences, which can be especially dangerous for persons suffering from mental illnesses because their information-processing system is already impaired (Lander et al., 2013).

In Botswana, alcohol is the most often used psychoactive substance and its consumption is linked with psychological distress, risky sexual behaviours, depression, gender-based violence and the progression of multi-drug resistant tuberculosis (Olashore et al., 2018) Substance misuse is a serious problem in Botswana, although empirical data on substance users is scarce, with little information on drug use among mental patients. Much literature on drug use in Botswana has rather focused on adolescents (Olashore et al., 2020; Riva et al., 2018b).

### **2.10 Main Objective:**

To determine the prevalence and patterns of substance abuse among patients at the Sbrana Psychiatric Hospital in Botswana.

### **2.11 Specific Objectives**

1. To find out how common drug use issues are at SPH.
2. To figure out the patterns and types of substances used at SPH
3. To determine the sociodemographic correlates in patients who use substances.

## **CHAPTER 3**

### **3.0 METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the study design of the paper and describes the data collection processes used in the investigation. The chapter highlights the study population, sampling procedures and the tools that were utilised to gather data and justify as to why they were regarded as appropriate. A description of the research design is also provided, along with justifications for its suitability for the study.

#### **3.2 Study Design**

To solve the research challenge, the present study utilized a quantitative technique approach. The study also used a cross-sectional design to guarantee that data was collected over a short period of time. This approach was the most suitable due to the limited time available for the study and furthermore it ensures that the study remained economical due to the limited budget.

#### **3.3 Study area**

Botswana is a landlocked country in southern hemisphere bordering Zimbabwe, Namibia, South Africa, and Zambia. The country has an area of 581 730 km squares of which 70 % is the Kalahari Desert. The population of Botswana is estimated to be 2.3 million with the national language being Setswana and English. The local currency of the country is called 'PULA' which means rain. This is because rain is a rare commodity in the country since it is covered by a desert. In Botswana there are around 12 major tribes and different languages. The study was conducted 60km away from the country's capital city (Gaborone) in a small town called Lobatse where the Sbrana psychiatric hospital is located.

#### **3.4 Study Setting**

The data collection was carried out at Sbrana psychiatric hospital which is the main psychiatric referral hospital in the country. The hospital is situated in Lobatse, in the southern part of the country 60 kilometers from the country's capital Gaborone. The hospital was officially opened in 2010 replacing the Lobatse mental hospital which

opened in 1938 (Sidandi et al., 2011). Sbrana hospital has a bed capacity of 300 and currently there are 6 psychiatrists with only 1 working for government and the rest employed by the University of Botswana. The hospital is a teaching hospital linked with the University of Botswana, where undergraduate and postgraduate students in psychiatry are trained. Sbrana is a fully serviced hospital providing inpatient and outpatient care. It has acute, chronic, psycho geriatric, forensic and wards. Services offered include psychology services with a substance use clinic that runs twice a week, social work, occupational therapy, and pharmacy services. The hospital provides laboratory services to their inpatients e.g., they conduct substance toxicology and other baseline tests.

It is imperative to note that during admission, the patients with SUDS are not separated from the other patients with a different diagnosis as there is no specific ward for SUD patients. This is because, currently the hospital does not have a rehabilitation centre, patients suffering from substance abuse problems are usually admitted in the facility for detoxification and are reviewed at the substance use counselling clinic as outpatients. The substance use counselling is run by two nurses who can review around 20-25 patients with SUDs in a month.

### **3.5 Study Population**

The study population was admitted ppatientdinpatients in Sbrana psychiatric hospital, Botswana who fulfilled the inclusion criteria.

### **3.6 Eligibility criteria**

#### ***3.6.1 Inclusion Criteria***

- Inpatients at Sbrana Psychiatric Hospital are eligible for the study
- Participants should be 18 years and older

#### ***3.6.2 Exclusion Criteria***

- Patients who fail to give consent
- Patients who displayed violent or aggressive behaviour at the time of recruitment

### **3.7 Sampling procedures**

#### ***3.7.1 Sample Size Calculation***

A sample size is a group of people from general public who are chosen to be representative of

the real population in the study. The sample size is calculated to ensure that the study has the minimum number of participants necessary by ethics for it to be declared scientifically valid.

The sample size of the study was calculated using the Cochran's formula (Cochran 1977) and it was as follows:

$$n_0 = \frac{z^2 pq}{e^2}$$

where:

$n_0$  = sample size

$z$  = standard normal deviation 95%

$p$  = hypothesised prevalence of substance use 37.9 which was obtained in a study by Tindiwebwa et al, 2021. The main reason for choosing this study is because it was the most recent the researcher came across.

$$q = 1 - p$$

$e$  = The required accuracy level is set at 0.05. (5percent)

$$n_0 = \frac{1.96^2 * 0.379 * 0.621}{0.05^2}$$

$$n_0 = 362$$

The sample size was adjusted as the population of Botswana is low; the estimated number of patients to be seen in a day is 7. The projected number of patients is 140.

The adjustment will be done using the defined population correction:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where:

$n$  = modified sample size

$$n_0 = 362$$

N Population

size 140

Substituted

values:

$$n = \frac{362}{1 + \frac{(362-1)}{140}}$$

n=101 participants

To ensure equal proportions of sampling in each ward, the Principal Investigator (PI) calculated the number of participants to be selected considering the number of participants available in the ward and the proportion of inpatients with respect to the sample size. This is presented below in table 1.

### 3.8 Sampling and recruitment procedure

A systematic stratified sampling technique was utilized in the study. Participants were recruited from their respective wards after their morning routine. Following which, the researcher used the patients register to select participants to take part in the study. A random starting point was decided in order to choose the first participant, after which a defined interval number was selected depending on the population's total sample requirement, which was applied to every  $n^{\text{th}}$  participant after the first participant.

As such, the researcher selected every 2<sup>nd</sup> patient in order of the names as they appeared in the admission register of each particular ward. This was repeated until the number of patients required in a specific ward had been reached. The selected patients were called to a private room where the PI introduced herself and explained the study and its aims.

The participants who met the inclusion criteria and agreed to consent were given consent forms to sign, assured of confidentiality and recruited into the study. Furthermore, study identification numbers were assigned to each participant.

Patients were recruited from the observation wards. This was done in order to increase the chances of getting more stable patients compared to the acute wards.

The interviewer explained the study and patients who showed interest and met the inclusion criteria were explained the consenting procedure and asked to repeat in their own words how they understood the content this was done to ensure that they understood the procedures and were fit to participate on the study. Patients who showed little or no understanding were deemed unfit to participate on the study.

### **3.9 Data collection procedure**

After obtaining consent, the PI conducted one-on-one structured interviews with the participants. This required that the PI read out the questionnaires to the participants in their preferred language, either English or Setswana in order to obtain their responses. This saved time and also ensured that those who were illiterate would not be excluded from the study. The combined questionnaires took about 20 minutes, with the socio- demographic questionnaires taking 5 minutes and the ASSIST taking around 15 minutes to complete.

The researcher ensured that all COVID-19 safety protocols during the period of study were observed. Face masks were mandatory for all the participants and hand sanitizers were provided.

### **3.10 Research Instruments**

ASSIST and Socio-Demographic data questionnaire was used to extract information from the target group.

#### ***3.10.1 Socio- Demographic Data Questionnaire***

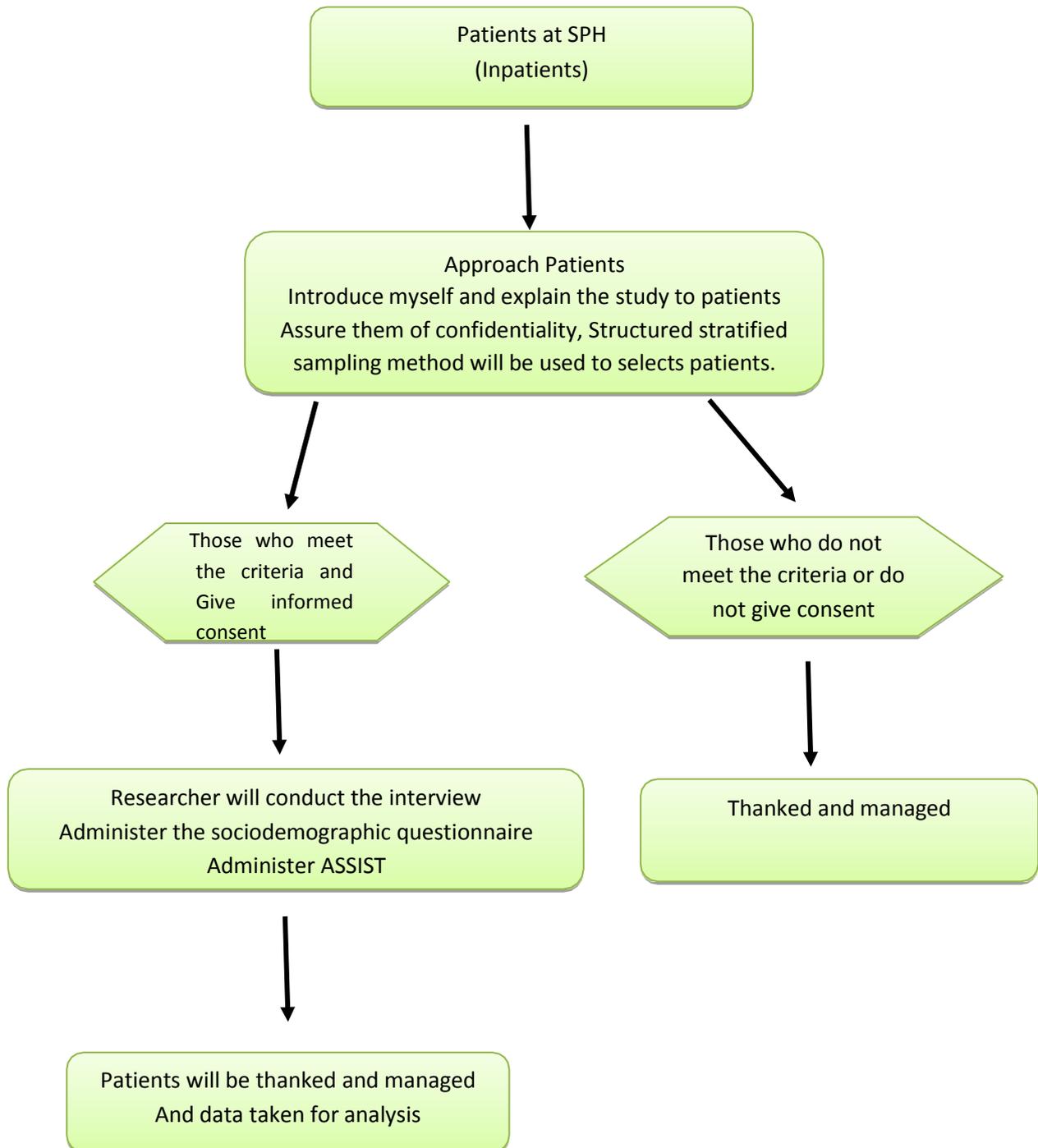
The numerous demographic factors of the participants were captured using a socio-demographic questionnaire, which covered identity data such as age, gender, ethnicity, religion, marital status, degree of education, family history of mental health, and so on.

#### ***3.10.2 Alcohol, smoking and substance involvement screening test (ASSIST)***

Data on drug use was collected for the study using a pre-existing test called ASSIST (Alcohol, Smoking, and Substance Involvement Screening Test), which was created by WHO with the help of a group of substance abuse experts. This was a response to massive global public health burden connected with the use of mind-altering substances. ASSIST has been utilized in

a number of investigations and is internationally valid. Sleeping pills, alcohol, cannabis, cocaine, amphetamine-type stimulants, sedatives and tobacco, hallucinogens, inhalants, opioids, and other substances are all covered by the ASSIST version 3.1. Each drug has a risk score, which is classified into three levels being: low, moderate, and high risk. The score will then indicate the type of intervention necessary based on the amount of usage, such as no treatment, no therapy is necessary, or referral to a professional. ASSIST is a 15-minute questionnaire that is given to patients by health-care professionals. For the purpose of this study, history of substance use was defined as history of ever using any of the substance in the ASSIST tool. On the other hand, participants were categorized to have any of the substance use disorders (SUDs) if they fell in either moderate or high risk score in the ASSIST tool.

### 3.11 Flow Chart Illustrating Methodology



### **3.12 Quality assurance**

For data quality the PI ensured that the maximum possible sample size will be used to gather information. The PI ensured that double entry and double checking of information was done to minimize errors. Furthermore, the questionnaires were translated to the Setswana language and then back to English again to check consistency and ensure uniformity of information presented to the participants.

### **3.13 Ethical Considerations**

Research ethics govern the conduct of scientists in their duty when working with participants. In order to preserve the people's rights, dignity, and wellbeing, it is imperative to adhere to the set ethical guidelines.

#### ***3.13.1 Ethical approval***

Approval to carry out the research was sought from the following departments before study onset; The Scientific Ethics and Research Committee of the University of Nairobi, Kenyatta National Hospital (KNH-UON ERC), and the Ministry of Health and Wellness Research Committee in Botswana was contacted for permission to undertake the research in Botswana. Additionally, the administration of the Sbrana psychiatry hospital in Botswana endorsed the data collection process after being satisfied with all due process.

#### ***3.13.2 Consent***

Written Informed consent was sought from the study participants after a full and detailed explanation of the study. Briefing and consenting was done in a private room in the ward with only the participant and the investigator to ensure confidentiality. The researcher read the written consent to the participant in their preferred language English or Setswana in order accommodate those who are unable to read or write.

#### ***3.13.3 Voluntary participation***

The researcher informed the participants that their engagement is completely voluntary, and that they can opt out at any moment. There was no reward for participating in the study. There was no added cost for participation in the study.

### ***3.13.4 Confidentiality***

The study participants were assured of their privacy because the subject is so sensitive. Interviews were done in a private room to ensure confidentiality. Participants were also assigned numbers for identification. The study materials did not include any participant names or other identifiers. All completed questionnaires were stored in a safe lockable container with controlled access by the researcher. To ensure that electronic data is only accessible by the researcher, it was stored on a password-protected computer.

If at any point a participant felt that they were psychologically disturbed /overwhelmed by the questions asked by the researcher they were referred to the relevant health care workers in the facility for further assistance e.g., psychologist, counsellor or social workers.

### ***3.13.5 Risks***

During the trial, no invasive procedures were required of the subjects e.g., drawing bloods. Participants were free to inform the researcher if they felt uncomfortable or upset as a result of the questions posed, and the researcher made the required referral to the appropriate health care provider e.g., psychologists, counsellors or social workers.

### ***3.13.6 Benefits of the study***

Participants were offered a screening of substance use disorders and an explanation of the results thereafter. If further management was required the researcher guided the participants on proper intervention as shown in the ASSIST tool.

The overall results of the study will be presented to the relevant stakeholders, hence resulting to formulation of well informed anti-substance abuse policies in the country. The study can also be beneficial in improving detection or set implementation of better interventions and comprehensive care for the psychiatric population. Botswana is currently working on establishing its first inpatient rehabilitation centre therefore the data gathered will provide a suitable picture of the magnitude of the substance abuse problem.

### ***3.13.7 Data management***

#### **a) Data coding and data entry**

After data collection the researcher checked for completeness while in the field. Any missing data for each participant was filed before leaving the field. Collected data was transported to a central place where it was coded.

A prototype was developed using a Microsoft Access application. The template specified the name (name of the field), the form (character or numeric) and the length (maximum number of characters in the field) of each variable, and the number of decimal places for the numeric variables and then data entry was made.

**b) Data cleaning**

Cleaning of data was done using Microsoft excel and any errors were identified and corrected to ensure that during data analysis no information was lost or erroneous. Data Cleaning and validation was done after the data had been entered, checked, and corrected.

**c) Statistical analysis**

Data was analyzed with the use of Statistical Package for Social Sciences version 23.0. Descriptive statistical analysis was used to describe the prevalence, patterns and socio-demographic characteristics of the participants. Bivariate logistic regression was performed to determine factors associated with tobacco use disorder, alcohol use disorder, cannabis use disorder and cocaine use disorder with P-value < 0.05 set for statistical significance. Variables with P-value < 0.05 were entered into multivariate analysis to control for potential confounders and determine factors associated with SUDs. To ensure that no independent variable is missed in multivariate analysis, all socio-demographic variables were run in the multivariate model as a default entry at once. This procedure made it possible to account for any Simpson's paradox effect due to sample size effect (Grigg, 2018). The adjusted odds ratio with 95% confidence interval was computed to show the level of certainty. A p-value of < 0.05 was considered as statistically significant.

## CHAPTER 4

### 4.0 RESULTS

#### 4.1 Introduction

This chapter discusses the data analysis and findings of 101 questionnaires completed by inpatients at Sbrana Psychiatric Hospital. Data was collected from the 28<sup>th</sup> of April 2022 to the 14<sup>th</sup> of May 2022 using a systematic stratified sampling technique across the wards at the Hospital. All the eligible participants who were approached consented to participate in the study, hence a response rate of 100%.

#### 4.2 Sociodemographic Characteristics of study participants

The interviewed participants included 59.4% males and 40.6% females. Majority of study participants were aged 18-35 years (82.2%), single (81.8%), Christians (72.3%) and with family history of substance use (81.2%). The rest of socio-demographic characteristics are shown in Table 1 below

**Table1: Socio-demographic characteristics of study participants (n=101)**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Male	60	59.4%
Female	41	40.6%
<b>Age in years</b>		
18-35	83	82.2%
>35	18	17.8%
<b>Marital status</b>		
Single	90	81.8%
Married and others	11	10.9%
<b>Education level</b>		
Primary and Secondary	54	53.5%
Tertiary	47	46.5%
<b>Occupation status</b>		
Employed and Self-employed	50	49.5%
Unemployed and student	51	50.5%
<b>Religion</b>		
Christian	73	72.3%
Others	28	27.7%
<b>Family history of substance use</b>		
Yes	82	81.2%
No	19	18.8%
<b>Family history of mental illness</b>		
Yes	53	52.5%
No	48	47.5%

### 4.3 Prevalence of substance use among study participants

The response rate for history of lifetime ever use of any of listed substances in the ASSIST tool was 85.1% (Table 2).

**Table 2: Prevalence of lifetime substance use among the participants**

<b>Substance ever used</b>	<b>Frequency (<i>n=101</i>)</b>	<b>Percent</b>
Yes	86	85.1%
No	15	14.9%
<b>Total</b>	<b>101</b>	<b>100%</b>

#### 4.3.1 Prevalence of substance use disorders (SUDs)

The World Health Organization, defines SUDs as the harmful or hazardous use of psychoactive substances including alcohol and illicit drugs. The ASSIST measures substance use in terms of low, moderate and high-risk scores. For the purpose of this study, substance use disorder was categorized as scoring either moderate or high (combined). The overall prevalence of substance use disorder was 63.4% (Table 3).

**Table 3: Prevalence of substance use disorders**

	<b>Frequency (<i>n=101</i>)</b>	<b>Percent</b>
Non use	15	14.8%
Low risk	22	21.8%
Moderate /high risk	64	63.4%
<b>Total</b>	<b>101</b>	<b>100%</b>

#### 4.4: Patterns of substance use disorders

The four most common substance use disorders were as follows;- Tobacco (58.4%), cannabis (42.6%), alcohol (34.7%), and cocaine (11.9%). Amphetamines and sedatives were each (5%), hallucinogens and opioids (2%) and the least used substance was inhailants at (1%). (Table 4).

**Table 4: Patterns of substance use disorders**

Substance	Risk level	Frequency (%)
Tobacco	Moderate 47	59 (58.4%)
	High 12	
Alcohol	Moderate 28	35 (34.7%)
	High 7	
Cannabis	Moderate 34	43 (42.6%)
	High 9	
Cocaine	Moderate 11	13 (12.8%)
	High 2	
Amphetamines	Moderate 5	5 (5.0%)
	High 0	
Inhalants	Moderate 1	1 (1.0%)
	High 0	
Sedatives	Moderate 4	5 (5.0%)
	High 1	
Hallucinogens	Moderate 2	2 (2%)
	High 0	
Opioids	Moderate 2	2 (2%)
	High 0	

Bivariate analysis revealed that male gender was more likely to have tobacco use disorder than female gender [OR (95%CI) =3.953 (1.703, 9.174); p-value= 0.001]. Other socio-demographic characteristics such as age, level of education, marital status, and family history of substance use were not significantly associated with tobacco use disorder (Table 5)

**Table 5: Bivariate analysis of socio-demographic factors associated with tobacco use disorder**

Variable	Tobacco use disorder, n (%)		Crude OR (95%CI)	p-value
	Yes	No		
<b>Gender</b>				
Male	43 (71.7%)	17 (28.3%)	3.953 (1.703, 9.174)	0.001
Female	16 (39.0%)	25 (61%)		
<b>Age in years</b>				
18-35	52 (62.7%)	31 (37.3)	2.649 (0.925, 7.519)	0.064
>35	7 (38.9%)	11 (61.1%)		
<b>Marital status</b>				
Single	54 (60%)	36 (40%)	1.799 (0.511, 6.329)	0.356
Married and others	6 (54.5%)	5 (45.5)		
<b>Education level</b>				
Primary and Secondary	29 (53.7%)	25 (46.3%)	0.657 (0.295, 3.390)	0.303
Tertiary	30 (63.8%)	17 (36.2%)		
<b>Occupation status</b>				
Employed and Self-employed	26 (52.0%)	24 (48.0%)	0.591 (0.266, 1.312)	0.195
Unemployed and student	33 (64.7%)	18 (35.3%)		
<b>Religion</b>				

Christian	40 (54.8%)	33 (45.2%)	0.574 (0.696, 4.359)	0.233
Others	19 (67.9%)	9 (32.1%)		
<b>Family history of substance use</b>				
Yes	48 (58.5%)	34 (41.5%)	0.229 (0.373, 1.000)	0.959
No	11 (57.9%)	8 (42.1%)		
<b>Family history of mental illness</b>				
Yes	30 (56.6%)	23 (44.4)	0.806 (0.364, 1.786)	0.605
No	29 (60.4%)	19 (39.7%)		

Male gender and age category of 18-35 years were significantly associated with alcohol use disorder with p-values of 0.005 and 0.021 respectively. Marital status, education level, occupation status and the rest of socio-demographic characteristics were not associated with alcohol use disorder (Table 6)

**Table 6: Bivariate analysis of socio-demographic factors associated with alcohol use disorder**

Variable	Alcohol use disorder, n (%)		Crude OR (95%CI)	p-value
	Yes	No		
<b>Gender</b>				
Male	28 (46.7%)	32 (53.3%)	4.255 (1.629, 11.111)	0.005
Female	7 (17.7%)	32 (82.9)		
<b>Age in years</b>				
18-35	33 (39.8%)	50 (60.2%)	5.291 (1.139, 24.390)	0.021
>35	2 (11.1%)	16 (88.9%)		
<b>Marital status</b>				
Single	32 (35.6%)	58 (64.4%)	1.471 (0.365, 2.172)	0.59
Married and others	3 (27.3%)	8 (72.7%)		
<b>Education level</b>				
Primary and Secondary	15 (27.6%)	39 (72.2%)	0.518 (0.226, 1.190)	0.120
Tertiary	20 (42.6%)	27 (57.4%)		
<b>Occupation status</b>				
Employed and Self-employed	17 (34.0%)	33 (66.0%)	0.943 (0.417, 2.128)	0.89
Unemployed and student	18 (35.3%)	33 (64.7%)		
<b>Religion</b>				
Christian	27 (37.0%)	46 (63.0%)	1.471 (0.568, 3.846)	0.43
Others	8 (28.6%)	20 (71.4%)		
<b>Family history of substance use</b>				
Yes	26 (31.7%)	56 (68.3%)	0.515 (0.187, 1.429)	0.196
No	9 (47.4%)	10 (52.6%)		
<b>Family history of mental illness</b>				
Yes	19 (35.8%)	34 (64.2%)	1.087 (0.475, 2.469)	0.850
No	18 (37.5%)	30 (62.5%)		

Male gender was significantly associated with cannabis use disorder [OR (95%CI) = 2.703 (1.163, 6.250); p-value= 0.02], On the other hand, age category of 18-35 years and being single were significantly associated with cannabis use disorder with p-values of 0.001 and 0.004 respectively. The rest of socio-demographic variables were not associated with cannabis use disorder (Table 7)

**Table 7: Bivariate analysis of socio-demographic factors associated with cannabis use disorder**

Variable	Cannabis use disorder, n (%)		Crude OR (95%CI)	p-value
	Yes	No		
<b>Gender</b>				
Male	30 (50.0%)	30 (50.0%)	2.703 (1.163, 6.250)	0.02
Female	11 (26.8)	30 (73.2%)		
<b>Age in years</b>				
18-35	40 (48.2%)	43 (51.8%)	15.873 ( 2.000, 100.00)	0.001
>35	1 (5.6%)	17 (94.4%)		
<b>Marital status</b>				
Single	41 (45.6%)	49 (54.4%)	1.852 (1.515, 2.217)	0.004
Married and others	0	11 (100%)		
<b>Education level</b>				
Primary and Secondary	20 (37.0%)	33 (63.0%)	0.730 (0.328, 1.613)	0.44
Tertiary	21 (44.7%)	26 953.3%0		
<b>Occupation status</b>				
Employed and Self-employed	18 (36.0%)	32 (64.0%)	0.685 (0.307, 1.515)	0.35
Unemployed and student	23 (45.1%)	28 (54.9%)		
<b>Religion</b>				
Christian	29 (39.7%)	44 (60.3%)	0.877 ( 0.364, 2.128)	0.77
Others	12 (42.9%)	16 (57.1%)		
<b>Family history of substance use</b>				
Yes	33 (40.2%)	49 (59.8%)	0.926 (0.337, 2.564)	0.88
No	8 (42.1%)	11 (57.9%)		
<b>Family history of mental illness</b>				
Yes	19 (35.8%)	34 (64.2%)	0.633 ( 0.286, 1.408)	0.27
No	22 (45.8%)	26 (54.2%)		

Male gender appeared to be associated with cocaine use disorder as compared to female (16.7% versus 4.9% of participants. However, gender was not statistically significant in bivariate analysis (p-value = 0.072). On the other hand, participants with tertiary level of education were significantly associated with cocaine use disorder compared to those with lesser education levels (75.2% more likely to have cocaine use disorder in a tertiary education group) (p-value = 0.035) (Table 8)

**Table 8: Bivariate analysis of socio-demographic factors associated with cocaine use disorder**

Variable	Cocaine use disorder, n (%)		Crude OR (95%CI)	p-value
	Yes	No		
<b>Gender</b>				
Male	10 (16.7%)	50 (83.3%)	3.846 (0.806, 18.868)	0.072
Female	2 (4.9%)	39 (95.1)		
<b>Age in years</b>				
18-35	12 (14.5%)	71 (81.5%)	1.163 (1.064, 1.277)	0.09
>35	0	18 (100%)		
<b>Marital status</b>				
Single	12 (13.3%)	78 (86.7%)	1.149 (1.064, 1.252)	0.197
Married and others	0	11 (100%)		
<b>Education level</b>				
Primary and Secondary	3 (5.6%)	51 (94.4%)	0.248 ( 0.063, 0.980)	0.035
Tertiary	9 (19.1%)	38 (80.9%)		
<b>Occupation status</b>				
Employed and Self-employed	3 (6.6%)	47(94.0%)	0.298 (0.076, 1.176)	0.07
Unemployed and student	9 (17.6%)	42 (82.4%)		
<b>Religion</b>				
Christian	8 (11.0%)	65 (89.0%)	0.741 (0.204, 2.703)	0.64
Others	4 (14.3%)	24 (85.7%)		
<b>Family history of substance use</b>				
Yes	8 (9.8%)	74 (90.2%)	0.405 ( 0.108, 1.515)	0.17
No	4 (21.1%)	15 (78.9%)		
<b>Family history of mental illness</b>				
Yes	6 (11.3%)	47 (88.7%)	0.870 ( 0.261, 2.941)	0.824
No	6 (12.5%)	42 (87.5%)		

All the socio-demographic variables were entered into multivariate analysis at one by one default to ensure no independent variable was missed out. Table 9 below provides the details of independent variables associated with substance use disorders. They included male gender for tobacco, alcohol, cannabis and cocaine use disorders. Young age of 18-35 was independently associated with alcohol and cannabis use disorders, whereas having tertiary education and being unemployed/student were independently associated with cocaine use disorders (Table 9).

**Table 9: Multivariate logistic regression including significant socio-demographic factors associated with substance use disorders**

<b>Tobacco use disorder</b>		
<b>Variable</b>	<b>Adjusted OR (95% CI)</b>	<b>p-value</b>
Gender	4.673 (1.845, 11.905)	0.001
<b>Alcohol use disorder</b>		
<b>Variable</b>	<b>Adjusted OR (95% CI)</b>	<b>p-value</b>
Gender	4.673 (1.613, 13.514)	0.004
Age	6.849 ( 1.219, 33.333)	0.029
<b>Cannabis use disorder</b>		
Gender	3.300 (1.176, 9.174)	0.023
Age	14.286 (1.698, 12.500)	0.014
<b>Cocaine use disorder</b>		
<b>Variable</b>	<b>Adjusted OR (95% CI)</b>	<b>p-value</b>
Gender	6.667 ( 1.042, 41.667)	0.045
Education level	0.120 (0.062, 0.787)	0.027
Current occupational status	0.172 (0.065, 0.952)	0.04

## **CHAPTER 5:**

### **5.0: DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The present study explored the prevalence rate and patterns of substance use in patients admitted at Sbrana Psychiatric Hospital. In this cross-sectional study of 101 psychiatric inpatients, we aimed to describe the prevalence of SUDs and their patterns of use, using the WHO ASSIST instrument.

Therefore, this chapter presents a detailed discussion of the study findings based on the above results and relates it to the study's literature review and compares and contrasts with various studies under the same subject area. This chapter also serves as the final chapter of the paper and provides a conclusion to the various themes and arguments that have been brought up in the paper so far. The chapter further provides a few recommendations for future research in this subject area and a number of practical recommendations for policy change.

#### **5.2 Prevalence and Patterns of Substance use disorder**

The prevalence of substance use disorders was obtained using the ASSIST tool. In order to compute this, only data from participants who scored moderate and high-risk scores were considered. This data represented the substance use disorders in the study. Prevalence of lifetime substance use in this study was 85.1% which is relatively higher as compared to previous studies of 48.4% by Abiama et al, (2014) in Nigeria, 60% by Cassidy et al (2001) in UK, and 74.8% by Sinclair and Latifi (2008) in UK. The differences seen across different settings may be explained by differences in characteristics of study population, eligibility criteria and data collection tools. According to the study findings, the prevalence of substance use disorder was found to be at 63.4 %. This finding is comparable to a number of similar studies in the African context. For instance, Hauli et al, (2010) in his study conducted within Tanzania, found a prevalence of 68.5% among their study participants. Additionally, in South Africa Temmigh et al, (2020) found a 55.6% prevalence rate amongst their study participants. This pattern of results has been noted in other similar studies that were investigating substance use disorders amongst psychiatric patients. This indicates that the psychiatric population engages in the use of substances to ameliorate their symptoms and deal with the stigma associated with their illness (Fabious et al, 2008). Furthermore, Selemogwe et al (2014) conducted a study in Botswana and obtained 76.9 % prevalence of substance use disorders,

which was relatively higher compared to this study. These results could be related to the study population differences, methodology and data collection tools. Conversely, Ndetei et al (2009) conducted a study in Kenya, and found a substance use disorder prevalence of 39%, which is notably much lower than what was found in this study. Furthermore, since this study was conducted relatively long ago, it can be argued that, if the study was to be repeated now, substance use disorders might be found to be relatively higher given the global trends. This is due to the fact that evidence from World drug report 2021 has indicated that, worldwide users of substances will have increase by 30% in 2018 and are expected to have grown by 11% in 2030 (UNDOC, 2021).

Patterns of substance use disorders according to the findings of this study, tobacco was the most commonly used substance at 58.4%, cannabis 42.6% alcohol 34.7%, cocaine 12.8% amphetamines and sedatives 5%, 2% and 1% for hallucinogens and inhalants respectively.

Tobacco SUD (58.4%) is higher compared to a study by Rwafa et al (2019), 47% investigating the prevalence of substance use among psychiatric patients in Harare, Zimbabwe. According to the National institute of drug abuse NIDA (2021) people with mental disorders smoke 2 to 4 times the rate of the general population. Longitudinal data from the National survey on drug use and health NSDUH (2005-2013) has shown that even though smoking in adults without chronic illnesses has reduced significantly but it remains particularly high among people reporting anxiety and depression. This is because nicotine is believed to temporarily lessen the symptoms. A study by Abeysana et al (2013) in Sri Lanka found a relatively low prevalence of 15.3 % almost 4 times lower than this study. Study was conducted in a different part of the world; on the other hand, Sri Lanka is a Muslim country with strict laws on substance whereas in Botswana tobacco products especially cigarettes and snuff are readily available and culturally acceptable. Tobacco unlike alcohol has well-known addictive characteristics and long-term medical consequences, and in turn is the most often used substance, usually on a day-to-day basis as opposed to alcohol whose purchase may be limited by cost hence drinking on weekly basis.

Cannabis use disorder was found to be 42.6% of participants. This finding is similar to a number of studies conducted regionally on the same population. Tindimwebwa et al (2021), Rwafa et al (2019) in South Africa and Zimbabwe respectively found 37.4 and 39%. Several studies have shown that cannabis predisposes individuals to mental disorders. The use of

cannabis has shown to increase the risk of developing depression, anxiety and depression (Gates P, 2022). Research has shown that people who use potent cannabis are 5 times predisposed to psychosis than the normal population Di Forti et al (2019). This finding is much higher than the prevalence of cannabis use in the country of 8.8% although a study in Botswana by Selemongwe et al (2014) who found the prevalence of cannabis use to be 74% which is almost double the findings in this study this can be attributable to the difference in the tools utilized on the study, the study utilized MINT to gather data which compared to ASSIST does not categorize risks. Cannabis availability in Botswana may have resulted from the growth of drug trafficking and transit routes, as well as increased cultivation in the country, throughout time. These substances are trafficked into the country from all borders, and are now becoming common.

Alcohol use disorder was present in 34.7% of participants, with a similar pattern observed in previous studies by Ndeti et al (2009)-34.4%; Tindimwebwa et al (2021)-39% and Rwafa et al (2019)-38%. These findings suggest that there could be an association that exists between alcohol use and psychiatric population. This study finding is higher than the prevalence of alcohol (20.8%) recorded by Botswana Alcohol consumer survey of 2017. Hauli et al (2010) and Abeysana et al (2013) got higher results of 57% and 42.6% respectively. This study was conducted in a different country which cultural practices and beliefs with different population characteristics that may explain the difference.

On the other hand, opioids (2%), hallucinogens (2%), and sedatives (5%), are still at a relatively low prevalence. These results are similar to most studies done Magbool et al (2020) Okpatuku et al (2014) all found similar results of 1-2% for these substances. This could possibly be attributed to their high costs and barriers to access. Inhalants (1%) from glue and petrol are also at low prevalence. In as much as cost less to obtain, they are frequently connected with homeless children on the streets, and experimenting adolescents, usually in urban areas. As such they are expected to remain at low prevalence.

Despite utilizing the ASSIST to test for hallucinogens and injectable substances, there were none found. Given the dangers of hallucinogens in causing overt psychotic symptoms and injectable drugs as HIV transmission vectors, it is very satisfying that they were not highly prevalent in this study. Only one participant had reported ever experimenting with a hallucinogen when they were younger. This is similar to those who reported using inhalants.

Despite the low prevalence of these substances in this study, they still necessitate proactive observation and preventative actions to ensure that they do not become a commonplace.

### **5.3 Association of socio-demographic characteristics and substance use/substance use disorders**

#### *Gender*

In terms of socio-demographics, there were several noteworthy observations. From its investigations the study found that there were significantly more males in the study population and sample than females. There were 60 (59.4%) male participants, and 41 (40.6%) females in the study. The study found that males were significantly more likely to have SUDs than females. A study conducted in Botswana by Selemogwe et al (2014) and another one by Ndetei et al., (2009), Kenya, both observed a similar trend. Mutiso, et al., (2022) illustrated that males experience less stigma than females and they also engage in risky behaviors as they have more access to substances. In addition, a research in South Africa by Tindimwebwa et al., (2021) reported female to male ratio of 1:2 this was attributed to the fact that woman are more susceptible to the negative health and psychosocial outcomes e.g. rape, violence hence low substance use compared to men hence they decide not to engage in substances. WHO report found a lower prevalence of life abstinence in males than females.

#### *Age*

Furthermore, in this study, younger age (18-35 years) was found to be more commonly linked with substance use disorders. Adolescents are the most vulnerable to substance abuse, and they may strive to demonstrate their independence by engaging in dangerous activities. This trait is also evident in young adults in their early to late twenties, who have a tendency to use substances and engage in dangerous activities as a coping mechanism for depression, anxiety, and unemployment. They use this instead of seeking help, and this more commonly seen among young men (Richert et al., 2020; Ohannessian, 2014).

#### *Marital Status*

A large majority 90 (89.1%) of the study participants were reported to be single, with only 8 (7.9%) being married, similar to a study by Tindiwebwa et al., (2021), South Africa. This was somewhat expected taking into consideration the age and gender of a majority of the participants, being that they were mostly young males and young women. We found that those with SUDs were more likely to be male, which is consistent with the finding of local and

international studies (Tindiwebwa et al 2021; Anic & Robertson, 2020). Marital status was not associated with SUDs in contrast to the previous studies (Tindiwebwa et al 2021; Anic & Robertson, 2020). The possible explanation for lack of association is that this study had majority of young and single participants, hence the difficulty to obtain and compare with other marital status. Previous studies have alluded that people who are single have no familial responsibilities or romantic ties, and for that reason the participants have more disposable income to use on different substances. There is a need of future studies in Botswana like case control studies that can explore further the association between marital status and SUDs. On the other hand, Okpataku et al., (2014), Nigeria, found that SUDs were more common among married people than single ones. This could be because the majority of participants in this study were of young age as compared to Okpataku et al (2014).

#### *Education Level and Occupational Status*

Over half of the participants (53.5%) had either primary or secondary education, with 46.5% of participant with tertiary education. Lower education levels are more commonly associated with substance use as found by a study by Bachmann (2018), which found that inpatients (36%) and outpatients (22%) with less education (primary school or less) had a greater prevalence of drug use than those with more education (University) (17% and 10%, respectively). In this study, education level was not associated with tobacco, alcohol and cannabis use disorder. However tertiary education was associated with cocaine use disorder; the later is in contrast to previous studies that have shown substance use and substance use disorders to be more common among those with lower education levels (Bachmann., 2018). This could be explained by the fact that, the higher one's education level, the more likely one is to have access to a good paying job, which provides sufficient income for purchasing substances. Being unemployed or students was not significantly associated with alcohol, tobacco and cannabis use disorders; however it was associated with cocaine use disorder.

Further studies need to explore this finding of selective cocaine use among unemployed and student, however it can be speculated that as previous studies indicated that cocaine may serve as better substance for the group to cope with the anxiety and depression commonly associated with unemployment as also revealed by Tindimwebwa et al (2021). Lack of association between other substances and employment status is in contrast to other studies by Anic and Robertson (2020) who found that this outcome might be due to a convoluted interaction in which mental illness raises the risk of unemployment, while unemployment raises the risk of

mental disease (Anic & Robertson, 2020). In contrast, research done by Okpatuku et al (2014) reported that substance use disorder is more common amongst those who are employed. This study was conducted in a different set up with a different culture.

### *Religion*

From the study's findings it is evident that substance use and substance use disorders are more prevalent amongst Christians (73.5%) as opposed to Muslims (4.4%). Previous studies have indicated that alcohol usage is more prevalent in Catholics than Protestants (Mousavi, et al., 2021). This has been attributed to Catholics' greater tolerance for alcohol than Protestants and other religion affiliations. This study categorized participants as Christians and other religions; hence it may not possible to assess alcohol usage among Christians from different churches. Overall, this study did not find any significant association between religion and substance use disorders. This may partially be attributed to the fact that the sample size consisted mostly Christians (72.3%), even those categorized as others; majority belonged to religions which are not opposed to alcohol intake apart from muslims who only consisted 4.4% of the study participants.

### *Family History of Substance Use and Mental Illness*

A majority of the participants (81.2%) in this study had family history of substance use; these findings translated with the fact that 85.1% of participants had used substances in their lifetime, suggesting some association. Previous studies have confirmed the link between substance use in the family and an elevated risk of drug use (Mousavi, et al., 2021). Distress exposure, disputes, and nonadaptive coping strategies are among the initial role models of behaviors that families create, as well as the structures that shape them (Mousavi, et al., 2021). This can also be seen among those who reported having a family history of mental illness although not as prevalent, with those reporting it having SUDs at 48.5%, while those who didn't report having any history having SUDs at 51.5%. A study by Hauli et al., (2010), Grant et al., (2021) found similar results. The current study did not find association between family history of substance use and SUDs contradicting previous studies. Once again, this may partly be due to disproportionate number of families with history of substance use. Future case control studies in Botswana may help to provide a clear picture with a possibility of different findings.

## **5.4 Study Limitations**

This is the first study to be conducted among inpatients with mental illness in Botswana on the subject of substance use disorders. The findings of this study will help working with more collaborators/stakeholders to do more studies on the field as well as devise strategies to curb the SUDs among mentally ill patients in Botswana. The results of this study should be interpreted with caution on background of the following limitations; there is a possibility for participants to under report their use of substances which could lead to underestimation of substance use. Moreover, the study was carried out in one psychiatric hospital therefore results might not reflect the true picture of the problem, however Sbrana is the main country psychiatric hospital and admits a greater number of the psychiatric population. Finally, this was a cross-sectional design, it can only provide associations and it is not possible to determine any causal-relationship.

## **5.5 Conclusion**

- The study has shown that there is a high prevalence of substance use disorders (63.4%) in patients at SPH.
- Tobacco (58.4%), alcohol (35.7%), cannabis (42.6%) and cocaine (13%) were found to be the most frequently used substances among patients at SPH.
- The socio demographic variables associated with substance use disorders in SPH included male gender for tobacco, alcohol, cannabis and cocaine use disorders. Young age of 18-35 was associated with alcohol and cannabis use disorders, whereas having tertiary education and being unemployed/student were associated with cocaine use disorders.

## **5.6 Recommendations**

### ***5.6.1 Practical Recommendations***

- Screening of patients admitted to wards for substance use disorders as this can aid in early diagnosis and intervention of patients with SUDs.
- Creation of a rehabilitation center in SPH to ensure that patients with SUDs are given holistic and evidence based care.
- Workshops and trainings for personnel should be done to equip staff with necessary skills that could assist in the holistic management of Substance use disorders in SPH.

### ***5.6.2 Recommendations for future research.***

- Further research to determine the connection between substance abuse/substance abuse disorders and mental illnesses in SPH and other mental facilities in Botswana.

## REFERENCES

1. *a: Brain Reward sites (Blum et al. [46] with permission). | Download Scientific Diagram.* (n.d.). Retrieved November 26, 2021, from [https://www.researchgate.net/figure/a-Brain-Reward-sites-Blum-et-al-46-with-permission\\_fig1\\_277930815](https://www.researchgate.net/figure/a-Brain-Reward-sites-Blum-et-al-46-with-permission_fig1_277930815).
2. Abiama, E. E., Abasiubong, F., Usen, K. B., & Alexander, U. E. (2014). Prevalence of Substance use and Association with Psychiatric Illness Among Patients in Uyo, Nigeria. *African Journal of Drug & Alcohol Studies*, 13(2), 87-96.
3. Andersson, H. W., Lilleeng, S. E., Ruud, T., & Ose, S. O. (2020). Substance use among patients in specialized mental health services in Norway: prevalence and patient characteristics based on a national census.
4. <https://doi.org/10.1080/08039488.2020.1817553>, 75(3), 160–169.
5. <https://doi.org/10.1080/08039488.2020.1817553>.
6. Anic, A., & Robertson, L. J. (2020). Prevalence and clinical correlates of substance use amongst acute psychiatric inpatients in Gauteng, South Africa. *South African Journal of Psychiatry*, 26, 1-8.
7. Bachmann, S. Epidemiology of Suicide and the Psychiatric Perspective. *Int. J. Environ. Res. Public Health* 2018, 15, 1425.
8. Cassidy F, Ahearn EP, Carroll BJ. Substance abuse in bipolar disorder. *Bipolar Disord.* 2001;3:181–188.
9. Chrisantha, A., & Harshana, B. (2018). Prevalence of Alcohol, Tobacco and Illicit Narcotic Substances Usage and Associated Factors among Patients Attending Mental Health Clinics Conducted by a Group of Hospitals in Sri Lanka. *International Archives of Public Health and Community Medicine*, 2(1). <https://doi.org/10.23937/IAPHCM-2017/1710014>.
10. Daley, D. C. (2013). Family and social aspects of substance use disorders and treatment.
11. *Journal of Food and Drug Analysis*, 21(4 SUPPL.). <https://doi.org/10.1016/j.jfda.2013.09.038>
12. Daniel, L., Krishnan, G., & Gupta, S. (2017). A study to assess the prevalence and pattern of substance use among male adolescents in suburban area of Delhi. *Indian Journal of Social Psychiatry*, 33(3), 208. <https://doi.org/10.4103/0971-9962.214596>.
13. Glasner-Edwards, S., & Mooney, L. J. (2014). Methamphetamine Psychosis: Epidemiology and Management. *CNS Drugs*, 28(12), 1115. <https://doi.org/10.1007/S40263-014-0209-8>.
14. Grigg T (2018). Simpson’s Paradox and Interpreting Data. The challenge of finding the right view through data. <https://towardsdatascience.com/simpsons-paradox-and-interpreting-data-6a0443516765>. Last accessed on 30<sup>th</sup> May 2022.
15. Hauli, K. A., Ndeti, D. M., Jande, M. B., & Kabangila, R. (2011). The prevalence of substance use among psychiatric patients: The case study of bugando medical centre,

- mwanza (Northern Tanzania). *Substance Abuse*, 32(4), 238–241. <https://doi.org/10.1080/08897077.2011.599253>.
16. Hetland, J., Braatveit, K. J., Hagen, E., Lundervold, A. J., & Erga, A. H. (2021). Prevalence and Characteristics of Borderline Intellectual Functioning in a Cohort of Patients with Polysubstance Use Disorder. *Frontiers in Psychiatry*, 12, 651028 <https://doi.org/10.3389/FPSYT.2021.651028>.
  17. Hunt, G. E., Large, M. M., Cleary, M., Lai, H. M. X. & Saunders, J. B. Prevalence of comorbid substance use in schizophrenia spectrum disorders in community and clinical settings, 1990–2017: systematic review and meta-analysis. *Drug Alcohol Depend.* **191**, 234–258 (2018).
  18. Hunt GE, Malhi GS, Cleary M, Lai HM, Sitharthan T. Prevalence of comorbid bipolar and substance use disorders in clinical settings, 1990-2015: systematic review and meta-analysis. *J Affect Disord.* 2016; 206: 331-49.
  19. Jegede O, Ojo O, Ahmed S, Kodjo K, Virk I, Rimawi D, et al. Tobacco and Substance Use among Psychiatric Inpatients in a Community Hospital: Cessation Counseling, Correlates, and Patterns of Use. *J Addict.* 2018; 2018: 7919704.
  20. Lai, H. M., Cleary, M., Sitharthan, T. & Hunt, G. E. Prevalence of comorbid substance use, anxiety and mood disorders in epidemiological surveys, 1990- 2014: a systematic review and meta-analysis. *Drug Alcohol Depend.* 154, 1–13 (2015).
  21. Lander, L., Howsare, J., & Byrne, M. (2013). The impact of substance use disorders on families and children: From theory to practice. *Social Work in Public Health*, 28(3–4), 194–205. <https://doi.org/10.1080/19371918.2013.759005>.
  22. Lappin, J. M. (2019). Commentary on Petersen et al. (2019): Development of problematic substance use in the years that follow diagnosis of schizophrenia. *Addiction*, 114(12), 2227–2228. <https://doi.org/10.1111/ADD.14791>.
  23. Letamo G, Bowelo M, & Majelantle RG. Prevalence of substance use and correlates of multiple substance use among school-going adolescents in Botswana. *African Journal of Drug & Alcohol Studies* 2016; 15(2): 75-89. <https://www.crisafrica.org/publications/AJDAS/vol15No2.pdf>. Last accessed on 30<sup>th</sup> May 2022.
  24. Lim, S. S., Vos, T., Flaxman, A. D., Danaei, G., Shibuya, K., Adair-Rohani, H., AlMazroa.
  25. M. A., Amann, M., Anderson, H. R., Andrews, K. G., Aryee, M., Atkinson, C., Bacchus.
  26. L. J., Bahalim, A. N., Balakrishnan, K., Balmes, J., Barker-Collo, S., Baxter, A., Bell.
  27. M. L., Ezzati, M. (2012). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, 380(9859), 2224–2260. [https://doi.org/10.1016/S0140-6736\(12\)61766-8](https://doi.org/10.1016/S0140-6736(12)61766-8).

28. Maqbool, M., Fekadu, G., Dugassa, D., Bekele, F., Turi, E., & Simegnaw, D. (2020). The Pattern of Substance Abuse in the Psychiatry Department of a Tertiary Care of Srinagar Hospital, Jammu and Kashmir, India. *Archives of Neuroscience* 2020 7:4, 7(4). <https://doi.org/10.5812/ANS.106492>.
29. Marazziti D. Understanding the role of serotonin in psychiatric diseases. *F1000Research*. 2017;6. doi:10.12688/f1000research.10094.1.
30. Marlatt, G.A., 1992. Substance abuse: implications of a biopsychosocial model for prevention, treatment, and relapse prevention. In: Gabowski, J. (Ed.), *Psychopharmacology: Basic Mechanisms and Applied Interventions*. American Psychological Association, Washington, DC, pp. 131–162.
31. Messer T, Lammers G, Müller-Siecheneder F, Schmidt RF, Latif S. Substance abuse in patients with bipolar disorder: systematic review and metaanalysis. *Psychiatry Res*. 2017; 253(7):338–50
32. Morisano, D., Babor, T. F., & Robaina, K. A. (2014). Co-occurrence of substance use disorders with other psychiatric disorders: Implications for treatment services. *NAD Publication*, 31(1), 5–25. <https://doi.org/10.2478/NSAD-2014-0002>.
33. Mousavi, S. B., Higgs, P., Piri, N., Sadri, E., Pourghasem, M., Fakhari, S. J., Noroozi, M., Miladinia, M., Ahounbar, E., & Sharhani, A. (2021). Prevalence of Substance Use among Psychotic Patients and Determining Its Strongest Predictor. *Iranian Journal of Psychiatry*, 16(2), 124. <https://doi.org/10.18502/IJPS.V16I2.5812>.
34. Müller CP, Homberg JR. The role of serotonin in drug use and addiction. *Behav Brain Res*. 2015; 277:146-192. doi:10.1016/j.bbr.2014.04.007.
35. Mutiso, V. N., Ndeti, D. M., Muia, E. N., Musyimi, C., Osborn, T. L., Kasike, R., Mamah, D. (2022). Prevalence and perception of substance abuse and associated economic indicators and mental health disorders in a large cohort of Kenyan students: towards integrated public health approach and clinical management. *BMC Psychiatry*, 22(191), 1-17.
36. Ndeti, D. M., Khasakhala, L. I., Kuria, M. W., Mutiso, V. N., Ongecha-Owuor, F. A., & Kokonya, D. A. (2009). The prevalence of mental disorders in adults in different level general medical facilities in Kenya: A cross-sectional study. *Annals of General Psychiatry*, 8(February). <https://doi.org/10.1186/1744-859X-8-1>.
37. Ndeti, D., Pizzo, M., Kuria, M., Khasakhala, L., Maru, M., & Mutiso, V. (2009). Substance abuse and psychiatric co-morbidities: a case study of patients at Mathari Psychiatric Hospital, Nairobi, Kenya. *African Journal of Drug and Alcohol Studies*, 7(1). <https://doi.org/10.4314/ajdas.v7i1.46359>.
38. Nwoga, C., Dapap, D., Armiya'u, A., Audu, M., Goar, S., Mafai, D., & Jack, D. (2021). Substance Use and Mental Illness among Women Admitted in a Rehabilitation Center in Jos, Nigeria: A 5-Year Profile. *Journal of BioMedical Research and Clinical Practice*, 4(2), 19–26. <https://doi.org/10.46912/JBRCP.224>.

39. Ohannessian, C. M. (2014). Anxiety and substance use during adolescence. *Subs. Abuse* 35, 418–425.
40. Okpataku, C., Olisah, V., Ejiofor, J., & Kwanashie, H. (2014). Prevalence and socio-demographic risk factors associated with psychoactive substance use in psychiatric outpatients of a tertiary hospital in Nigeria. *Nigerian Medical Journal*, 55(6), 460. <https://doi.org/10.4103/0300-1652.144695>.
41. Olashore, A. A., Ogunwobi, O., Totego, E., & Opondo, P. R. (2018). Psychoactive substance use among first-year students in a Botswana University: pattern and demographic correlates. *BMC Psychiatry* 2018 18:1, 18(1), 1–9. <https://doi.org/10.1186/S12888-018-1844-2>.
42. Olashore, A. A., Opondo, P. R., Ogunjumo, J. A., & Ayugi, J. O. (2020). Cannabis Use Disorder Among First-Year Undergraduate Students in Gaborone, Botswana: *Https://Doi.Org/10.1177/1178221820904136*, 14. <https://doi.org/10.1177/1178221820904136>.
43. Parakh P, Basu D. Cannabis and psychosis: have we found the missing links? *Asian J Psychiatr* (2013) 6:281–7. doi:10.1016/j.ajp.2013.03.012.
44. Richert, T., Anderberg, M., & Dahlberg, M. (2020). Mental health problems among young people in substance abuse treatment in Sweden. *Substance abuse treatment, prevention, and policy*, 15(1), 43.
45. Riva, K., Allen-Taylor, L., Schupmann, W. D., Mphele, S., Moshashane, N., & Lowenthal, E.D. (2018a). Prevalence and predictors of alcohol and drug use among secondary school students in Botswana: A cross-sectional study. *BMC Public Health*, 18(1), 1–14. <https://doi.org/10.1186/s12889-018-6263-2>.
46. Riva, K., Allen-Taylor, L., Schupmann, W. D., Mphele, S., Moshashane, N., & Lowenthal, E.D. (2018b). Prevalence and predictors of alcohol and drug use among secondary school students in Botswana: a cross-sectional study. *BMC Public Health*, 18(1), 1396. <https://doi.org/10.1186/S12889-018-6263-2>.
47. Rush, B., Urbanoski, K., Bassani, D., Castel, S., Wild, T. C., Strike, C., Kimberley, D., & Somers, J. (2008). Prevalence of co-occurring substance use and other mental disorders in the Canadian population. *Canadian Journal of Psychiatry*, 53(12), 800–809. <https://doi.org/10.1177/070674370805301206>.
48. Rwafa C, Mangezi WO, Madhombiro M. Substance Use Among Patients Admitted to Psychiatric Units in Harare, Zimbabwe. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3449370](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3449370). Last accessed on 30<sup>th</sup> May 2022.
49. Sidandi, P., Opondo, P., & Tidimane, S. (2011). Mental health in Botswana. *International Psychiatry*, 8(3), 66–68. <https://doi.org/10.1192/S1749367600002605>.
50. Sinclair JMA, Latifi AH. Co-morbid substance misuse in psychiatric patients: prevalence and association with length of inpatients stay. *J Psychopharmacol*. 2008; 22:92–99.

51. Srivastava, M., Jain, S., & Patel, A. (2018). Substance use among outdoor treatment-seeking patients with mental illness: A case-control study from a tertiary care hospital of northern India. *Journal of Education and Health Promotion*, 7(1), 75–75. [https://doi.org/10.4103/JEHP.JEHP\\_97\\_17](https://doi.org/10.4103/JEHP.JEHP_97_17).
52. Temmingh, H. S., Mall, S., Howells, F. M., Sibeko, G., & Stein, D. J. (2020). The prevalence and clinical correlates of substance use disorders in patients with psychotic disorders from an upper-middle-income country. *South African Journal of Psychiatry*, 26, 1–9. <https://doi.org/10.4102/sajpsy psychiatry.v26i0.1473>.
53. Tindimwebwa, L., Ajayi, A. I., & Adeniyi, O. V. (2021). Prevalence and demographic correlates of substance use among adults with mental illness in eastern cape, South Africa: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(10). <https://doi.org/10.3390/ijerph18105428>.
54. Toftdahl, N. G., Nordentoft, M., & Hjorthøj, C. (2016). Prevalence of substance use disorders in psychiatric patients: a nationwide Danish population-based study. *Social Psychiatry and Psychiatric Epidemiology*, 51, 129–140.
55. Torrens, M., Mestre-Pintó, J., Domingo-Salvany, A. (2015). *Comorbidity of substance use and mental disorders in Europe*. <http://www.emcdda.europa.eu/system/files/publications/1988/TDXD15019ENN.pdf>
56. Tsapakis EM, Travis MJ. Glutamate and psychiatric disorders. *Adv Psychiatr Treat*. 2002;8(3):189- 197. doi:10.1192/apt.8.3.189.
57. United Nations World Drug Report 2021. [https://www.unodc.org/res/wdr2021/field/WDR21\\_Booklet\\_1.pdf](https://www.unodc.org/res/wdr2021/field/WDR21_Booklet_1.pdf). Last accessed 01<sup>st</sup> June 2022.
58. Volkow ND, Fowler JS, Wang G-J, Swanson JM, Telang F. Dopamine in Drug Abuse and Addiction: Results of Imaging Studies and Treatment Implications. *Arch Neurol*. 2007; 64(11):1575- 1579. doi:10.1001/archneur.64.11.1575.
59. Wang, J., & Geng, L. (2019). Effects of socioeconomic status on physical and psychological health: Lifestyle as a mediator. *International Journal of Environmental Research and Public Health*, 16(2). <https://doi.org/10.3390/IJERPH16020281>
60. Whiteford, H.A., Degenhardt, L., Rehm, J.T., Baxter, A.J., Ferrari, A.J., Erskine, H.E., & Vos, T. (2013). Global burden of disease attributable to mental and substance use disorders: Findings from the Global Burden of Disease Study 2010. *The Lancet*, 382, 1575–1586.

## **APPENDICES**

### APPENDIX 1: CONSENT FORM A (English)

Title of Study: The Prevalence and Patterns of Substance use disorders in Sbrana Psychiatric Hospital, Botswana.

PATIENTS STUDY IDENTIFICATION NO:

#### **Explanation of consent**

The explanation of consent will be read to the participants in the language most conversant to them, which is either English or Setswana

#### **Introduction**

My name is Dr Othalefile Enamasi Otlhapile, a postgraduate student pursuing Psychiatry at the University of Nairobi. In collaboration with the University of Nairobi we are doing a study under the supervision of Professor M. Kuria and Dr C Gitau who are my lectures at the University of Nairobi. The study will be investigating the prevalence of substance use disorders in patients admitted in Sbrana Psychiatric Hospital. To achieve our objectives a sample size of approximately 101 inpatients is required for the study.

We are asking for your consent to consider participating in the study. If you agree to participate in this study the following things will happen.

You will be interviewed by a trained interviewer in a private area where you will feel comfortable answering questions and with no distractions. The interview will take approximately 25 minutes.

#### **Procedure**

After giving consent you will be required to complete two independent questionnaires which will be read to you by the researcher. The first will be the socio demographic questionnaire which will gather your personal information such your age, gender, religion, marital status, history of substance use and others. The second questionnaire "ASSIST" will gather information regarding patterns and types of substance use such as cannabis, alcohol, tobacco and other drugs. The results will be shared with you and what they mean. Completing the questionnaires will take approximately 20 minutes.

#### **Voluntary participation**

Your participation in the study is voluntary and you are therefore allowed to withdraw from the interview at any point. I assure you that withdrawing from the study will not hinder or interfere with the care you will be given in Sbrana Psychiatric Hospital.

**Confidentiality**

Information obtained from you is entirely confidential and all information will be accessible only by the researcher and placed in a lockable container. You will be assigned an identification number for the study in order to ensure that your name will not be revealed in the study or any other publications. The interview will be done in a private room to ensure confidentiality

**Risks**

There will be no invasive procedures required from the participants during the study e.g. drawing blood. If at any point you feel uncomfortable or emotional as a result of the questions asked you are free to inform the researcher who will make a necessary referral to the relevant health care professional eg psychologists, counsellors or social workers in the facility.

**Benefits**

You will be offered a screening of substance use disorders and an explanation of the results thereafter. If further management is required the researcher will provide guidance on the proper interventions as shown in the ASSIST tool.

The overall results of the study can be used in formulating well informed substance use policies in the country. The study can also be beneficial in improving the detection or the implementation of higher quality interventions and comprehensive care for the psychiatric population. Botswana is currently working on establishing its first inpatient rehabilitation centre therefore the data gathered can provide a good picture of the magnitude of the substance use problem in the country.

**Compensation**

There will be no reward given to you for participation in the study. There shall be no added cost for participation in the study.

**Additional information**

If you have any further questions regarding this study, you are more than welcome to contact the principal investigator

Dr Othalefile Enamasi Otlhapile

Cellphone number: +267 74715055 or +254 714506319

Email address: [fifienamasi@yahoo.com](mailto:fifienamasi@yahoo.com)

In case of any questions about your rights as a research participant, you may contact the Secretary/Chairperson;

Kenyata National Hospital-University of Nairobi Ethics and Research Committee

Telephone number: 2726300 Ext 44102 Email: [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke)

**CONSENT FORM B (English)**

Participant's consent

I the undersigned declare that the researcher has thoroughly explained the nature and purpose of the study. I do understand that the researcher will maintain my anonymity with regards to the responses given and that the information given to the researcher Dr Othalefile Enamasi Otlhapile will be used for the purpose of this study only.

I therefore agree to participate in the study.

Patients Name and Signature: \_\_\_\_\_ DATE: \_\_\_\_\_

Name and signature of researcher: \_\_\_\_\_ DATE: \_\_\_\_\_

(Dr Othalefile Enamasi Otlhapile)

**APPENDIX 2: SOCIO DEMOGRAPHIC QUESTIONNAIRE FOR PARTICIPANTS  
(English)**

Patient study identification no:

Place of residence \_\_\_\_\_

**1) Gender**

Male  Female

**2) Age**

18-20  21-30  31-40  41-50  51-60  61-above

**3) Education level**

No formal education

Primary education  Secondary education  Tertiary education

**4) Religion**

Christianity  Islam  Pentecostal  Others specify \_\_\_\_\_

**5) Occupation**

Student  Employed  Unemployed  Self employed

**6) Marital status**

Single  Married  Cohabiting  Divorced  Widowed

**7) Family history of substance use**

Yes  No

**8) Family history of mental illness**

Yes  No

APPENDIX 3: WHO - ASSIST V3.0 (English)

A. WHO - ASSIST V3.0

INTERVIEWER ID	<input type="text"/>	COUNTRY	<input type="text"/>	CLINIC	<input type="text"/>
PATIENT ID	<input type="text"/>	DATE	<input type="text"/>	<input type="text"/>	<input type="text"/>

**INTRODUCTION (Please read to patient)**

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card).

Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

**NOTE: BEFORE ASKING QUESTIONS, GIVE ASSIST RESPONSE CARD TO PATIENT**

**Question 1**  
*(if completing follow-up please cross check the patient's answers with the answers given for Q1 at baseline. Any differences on this question should be queried)*

In your life, which of the following substances have you ever used? (NON-MEDICAL USE ONLY)	No	Yes
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3
d. Cocaine (coke, crack, etc.)	0	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3
j. Other - specify:	0	3

Probe if all answers are negative:  
 "Not even when you were in school?"

*If "No" to all items, stop interview.*  
*If "Yes" to any of these items, ask Question 2 for each substance ever used.*

**Question 2**

In the <u>past three months</u> , how often have you used the substances you mentioned ( <i>FIRST DRUG, SECOND DRUG, ETC?</i> )	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
d. Cocaine (coke, crack, etc.)	0	2	3	4	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g. Sedatives or Sleeping Pills (Valium, Serenax, Rohypnol, etc.)	0	2	3	4	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j. Other - specify:	0	2	3	4	6

***If "Never" to all items in Question 2, skip to Question 6.***

***If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.***

**Question 3**

During the <u>past three months</u> , how often have you had a strong desire or urge to use ( <i>FIRST DRUG, SECOND DRUG, ETC?</i> )	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d. Cocaine (coke, crack, etc.)	0	3	4	5	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g. Sedatives or Sleeping Pills (Valium, Serenax, Rohypnol, etc.)	0	3	4	5	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j. Other - specify:	0	3	4	5	6

**Question 4**

During the <u>past three months</u> , how often has your use of ( <i>FIRST DRUG, SECOND DRUG, ETC</i> ) led to health, social, legal or financial problems?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Other - specify:	0	4	5	6	7

**Question 5**

During the <u>past three months</u> , how often have you failed to do what was normally expected of you because of your use of ( <i>FIRST DRUG, SECOND DRUG, ETC</i> )?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products					
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Other - specify:	0	5	6	7	8

**Ask Questions 6 & 7 for all substances ever used (i.e. those endorsed in Question 1)**

**Question 6**

<b>Has a friend or relative or anyone else <u>ever</u> expressed concern about your use of (FIRST DRUG, SECOND DRUG, ETC.)?</b>	<b>No, Never</b>	<b>Yes, in the past 3 months</b>	<b>Yes, but not in the past 3 months</b>
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

**Question 7**

<b>Have you <u>ever</u> tried and failed to control, cut down or stop using (FIRST DRUG, SECOND DRUG, ETC.)?</b>	<b>No, Never</b>	<b>Yes, in the past 3 months</b>	<b>Yes, but not in the past 3 months</b>
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

**Question 8**

	<b>No, Never</b>	<b>Yes, in the past 3 months</b>	<b>Yes, but not in the past 3 months</b>
<b>Have you <u>ever</u> used any drug by injection? (NON-MEDICAL USE ONLY)</b>	0	2	1

**IMPORTANT NOTE:**

Patients who have injected drugs in the last 3 months should be asked about their pattern of injecting during this period, to determine their risk levels and the best course of intervention.

**PATTERN OF INJECTING**

Once weekly or less or  
Fewer than 3 days in a row

More than once per week or  
3 or more days in a row

**INTERVENTION GUIDELINES**

Brief Intervention including "risks associated with injecting" card

Further assessment and more intensive treatment\*

**HOW TO CALCULATE A SPECIFIC SUBSTANCE INVOLVEMENT SCORE.**

For each substance (labelled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q1 or Q8 in this score. For example, a score for cannabis would be calculated as:  $Q2c + Q3c + Q4c + Q5c + Q6c + Q7c$

Note that Q5 for tobacco is not coded, and is calculated as:  $Q2a + Q3a + Q4a + Q6a + Q7a$

**THE TYPE OF INTERVENTION IS DETERMINED BY THE PATIENT'S SPECIFIC SUBSTANCE INVOLVEMENT SCORE**

	<b>Record specific substance score</b>	<b>no intervention</b>	<b>receive brief intervention</b>	<b>more intensive treatment *</b>
a. tobacco		0 - 3	4 - 26	27+
b. alcohol		0 - 10	11 - 26	27+
c. cannabis		0 - 3	4 - 26	27+
d. cocaine		0 - 3	4 - 26	27+
e. amphetamine		0 - 3	4 - 26	27+
f. inhalants		0 - 3	4 - 26	27+
g. sedatives		0 - 3	4 - 26	27+
h. hallucinogens		0 - 3	4 - 26	27+
i. opioids		0 - 3	4 - 26	27+
j. other drugs		0 - 3	4 - 26	27+

**NOTE: \*FURTHER ASSESSMENT AND MORE INTENSIVE TREATMENT may be provided by the health professional(s) within your primary care setting, or, by a specialist drug and alcohol treatment service when available.**

## B. WHO ASSIST V3.0 RESPONSE CARD FOR PATIENTS

### *Response Card - substances*

a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)
b. Alcoholic beverages (beer, wine, spirits, etc.)
c. Cannabis (marijuana, pot, grass, hash, etc.)
d. Cocaine (coke, crack, etc.)
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)
i. Opioids (heroin, morphine, methadone, codeine, etc.)
j. Other - specify:

---

### *Response Card (ASSIST Questions 2 – 5)*

**Never:** not used in the last 3 months

**Once or twice:** 1 to 2 times in the last 3 months.

**Monthly:** 1 to 3 times in one month.

**Weekly:** 1 to 4 times per week.

**Daily or almost daily:** 5 to 7 days per week.

---

### *Response Card (ASSIST Questions 6 to 8)*

No, Never

Yes, but not in the past 3 months

Yes, in the past 3 months

---

## C. ALCOHOL, SMOKING AND SUBSTANCE INVOLVEMENT SCREENING TEST (WHO ASSIST V3.0) FEEDBACK REPORT CARD FOR PATIENTS

Name \_\_\_\_\_ Test Date \_\_\_\_\_

### Specific Substance Involvement Scores

Substance	Score	Risk Level
a. Tobacco products		0-3 Low 4-26 Moderate 27+ High
b. Alcoholic Beverages		0-10 Low 11-26 Moderate 27+ High
c. Cannabis		0-3 Low 4-26 Moderate 27+ High
d. Cocaine		0-3 Low 4-26 Moderate 27+ High
e. Amphetamine type stimulants		0-3 Low 4-26 Moderate 27+ High
f. Inhalants		0-3 Low 4-26 Moderate 27+ High
g. Sedatives or Sleeping Pills		0-3 Low 4-26 Moderate 27+ High
h. Hallucinogens		0-3 Low 4-26 Moderate 27+ High
i. Opioids		0-3 Low 4-26 Moderate 27+ High
j. Other - specify		0-3 Low 4-26 Moderate 27+ High

#### What do your scores mean?

<b>Low:</b>	You are at low risk of health and other problems from your current pattern of use.
<b>Moderate:</b>	You are at risk of health and other problems from your current pattern of substance use.
<b>High:</b>	You are at high risk of experiencing severe problems (health, social, financial, legal, relationship) as a result of your current pattern of use and are likely to be dependent

**Are you concerned about your substance use?**

<b>a. tobacco</b>	Your risk of experiencing these harms is:.....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
<b>Regular tobacco smoking is associated with:</b>				
	Premature aging, wrinkling of the skin			
	Respiratory infections and asthma			
	High blood pressure, diabetes			
	Respiratory infections, allergies and asthma in children of smokers			
	Miscarriage, premature labour and low birth weight babies for pregnant women			
	Kidney disease			
	Chronic obstructive airways disease			
	Heart disease, stroke, vascular disease			
	Cancers			

<b>b. alcohol</b>	Your risk of experiencing these harms is:.....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
<b>Regular excessive alcohol use is associated with:</b>				
	Hangovers, aggressive and violent behaviour, accidents and injury			
	Reduced sexual performance, premature ageing			
	Digestive problems, ulcers, inflammation of the pancreas, high blood pressure			
	Anxiety and depression, relationship difficulties, financial and work problems			
	Difficulty remembering things and solving problems			
	Deformities and brain damage in babies of pregnant women			
	Stroke, permanent brain injury, muscle and nerve damage			
	Liver disease, pancreas disease			
	Cancers, suicide			

<b>c. cannabis</b>	Your risk of experiencing these harms is:.....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
<b>Regular use of cannabis is associated with:</b>				
	Problems with attention and motivation			
	Anxiety, paranoia, panic, depression			
	Decreased memory and problem solving ability			
	High blood pressure			
	Asthma, bronchitis			
	Psychosis in those with a personal or family history of schizophrenia			
	Heart disease and chronic obstructive airways disease			
	Cancers			

<b>d. cocaine</b>	Your risk of experiencing these harms is:....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
	<b>Regular use of cocaine is associated with:</b>			
	Difficulty sleeping, heart racing, headaches, weight loss			
	Numbness, tingling, clammy skin, skin scratching or picking			
	Accidents and injury, financial problems			
	Irrational thoughts			
	Mood swings - anxiety, depression, mania			
	Aggression and paranoia			
	Intense craving, stress from the lifestyle			
	Psychosis after repeated use of high doses			
	Sudden death from heart problems			

<b>e. amphetamine type stimulants</b>	Your risk of experiencing these harms is:.....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
	<b>Regular use of amphetamine type stimulants is associated with:</b>			
	Difficulty sleeping, loss of appetite and weight loss, dehydration			
	jaw clenching, headaches, muscle pain			
	Mood swings –anxiety, depression, agitation, mania, panic, paranoia			
	Tremors, irregular heartbeat, shortness of breath			
	Aggressive and violent behaviour			
	Psychosis after repeated use of high doses			
	Permanent damage to brain cells			
	Liver damage, brain haemorrhage, sudden death (ecstasy) in rare situations			

<b>f. Inhalants</b>	Your risk of experiencing these harms is:.....	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
	(tick one)			
	<b>Regular use of inhalants is associated with:</b>			
	Dizziness and hallucinations, drowsiness, disorientation, blurred vision			
	Flu like symptoms, sinusitis, nosebleeds			
	Indigestion, stomach ulcers			
	Accidents and injury			
	Memory loss, confusion, depression, aggression			
	Coordination difficulties, slowed reactions, hypoxia			
	Delirium, seizures, coma, organ damage (heart, lungs, liver, kidneys)			
	Death from heart failure			



## D. RISKS OF INJECTING CARD – INFORMATION FOR PATIENTS

Using substances by injection increases the risk of harm from substance use.

This harm can come from:

- **The substance**
  - If you inject any drug you are more likely to become dependent.
  - If you inject amphetamines or cocaine you are more likely to experience psychosis.
  - If you inject heroin or other sedatives you are more likely to overdose.
- **The injecting behaviour**
  - If you inject you may damage your skin and veins and get infections.
  - You may cause scars, bruises, swelling, abscesses and ulcers.
  - Your veins might collapse.
  - If you inject into the neck you can cause a stroke.
- **Sharing of injecting equipment**
  - If you share injecting equipment (needles & syringes, spoons, filters, etc.) you are more likely to spread blood borne virus infections like Hepatitis B, Hepatitis C and HIV.
- ❖ **It is safer not to inject**
- ❖ **If you do inject:**
  - ✓ always use clean equipment (e.g., needles & syringes, spoons, filters, etc.)
  - ✓ always use a new needle and syringe
  - ✓ don't share equipment with other people
  - ✓ clean the preparation area
  - ✓ clean your hands
  - ✓ clean the injecting site
  - ✓ use a different injecting site each time
  - ✓ inject slowly
  - ✓ put your used needle and syringe in a hard container and dispose of it safely
- ❖ **If you use stimulant drugs like amphetamines or cocaine the following tips will help you reduce your risk of psychosis.**
  - ✓ avoid injecting and smoking
  - ✓ avoid using on a daily basis
- ❖ **If you use depressant drugs like heroin the following tips will help you reduce your risk of overdose.**
  - ✓ avoid using other drugs, especially sedatives or alcohol, on the same day
  - ✓ use a small amount and always have a trial "taste" of a new batch
  - ✓ have someone with you when you are using
  - ✓ avoid injecting in places where no-one can get to you if you do overdose
  - ✓ know the telephone numbers of the ambulance service

## E. TRANSLATION AND ADAPTATION TO LOCAL LANGUAGES AND CULTURE: A RESOURCE FOR CLINICIANS AND RESEARCHERS

The ASSIST instrument, instructions, drug cards, response scales and resource manuals may need to be translated into local languages for use in particular countries or regions. Translation from English should be as direct as possible to maintain the integrity of the tools and documents. However, in some cultural settings and linguistic groups, aspects of the ASSIST and its companion documents may not be able to be translated literally and there may be socio-cultural factors that will need to be taken into account in addition to semantic meaning. In particular, substance names may require adaptation to conform to local conditions, and it is also worth noting that the definition of a standard drink may vary from country to country.

Translation should be undertaken by a bi-lingual translator, preferably a health professional with experience in interviewing. For the ASSIST instrument itself, translations should be reviewed by a bi-lingual expert panel to ensure that the instrument is not ambiguous. Back translation into English should then be carried out by another independent translator whose main language is English to ensure that no meaning has been lost in the translation. This strict translation procedure is critical for the ASSIST instrument to ensure that comparable information is obtained wherever the ASSIST is used across the world.

Translation of this manual and companion documents may also be undertaken if required. These do not need to undergo the full procedure described above, but should include an expert bi-lingual panel.

Before attempting to translate the ASSIST and related documents into other languages, interested individuals should consult with the WHO about the procedures to be followed and the availability of other translations. Write to the Department of Mental Health and Substance Dependence, World Health Organisation, 1211 Geneva 27, Switzerland.

#### **APPENDIX 4: CONSENT FORM A (Setswana)**

*KAROLO YA NTLHA*

NOMORO YA MOTSAA KAROLO

#### **SETLHOGO SA PATLISISO: DIPALO TSA BALWETSI BA BA DIRISANGNNOTAGI MO SEPATELENG SA SBRANA, BOTSWANA**

Tlhaloso ka go tsaa karolo mo patlisisong

Mmotsolotsi wa go balela tlhaloso e ka puo e o e thaloganyang, Setswana kana Sekgoa.

#### **NOMORO YA MOTSAA KAROLO**

Ke le ngaka Othalefile Enamasi Othapile ke dira patlisiso e, ele bonthabongwe jwa dithuto tsame tsa Boitsanape jwa malwetse a thaloganyo ko sekolong sa University of Nairobi, Kenya. Patlisiso e e tlaabobo e itibagantse le dipalo tsa balwetse ba nnotagi le diritibatsi le ka ha di dirisiwang ka teng mo balwetseng ba ba robaditsweng mo sepateleng sa Sbrana. Patlisiso e ke tlaabo ke e tshwaraganetse le barutabana bame ebong Ngaka Catherine Gitau and Proffessor Mary Wangari Kuria ele badiri ba University ya Nairobi. Mo patlisisong e re ya go tlhoka balwetse ba ba robaditsweng mo Sbrana bale lekgolo le bongwe.

Ga o dumalana go tsaa karolo mo patlisisong e ebile o sena go signa pamphitshana e supang gore wa dumalana, o tshwanetse go itse tse di latelang

O tlaabo o botswa dipotso ke mmotsolotse o rutetsweng tiro e ebile a e dira tiro e ka kelotlhoko, potsolotso e tlaabo e direlwa mo paposing e ko thoko go itsa batho go reetsa se re se buang

Moithaopi o ka tswa mo patlisisong ka nako nngwe le nngwe ga a batla mme ebile se ga sena go ama ka gope ditlamelo tse a tlaabong a di fiwa mo sepateleng sa Sbrana.

Go taabo go sena dikatso tse di tla fiwang moithaopi go tsaa karolo mo dipatlisisong tse. Ebile moithaopi ga ana go duela sepe.

Ga o dumela go tsaa karolo o tla kopiwa go araba dipotso tsa mealo e mebedi tse o tlaabong o di balelwa ke mmotsolotsi mme di tla tsaa metsotso e ka nna masome a mabedi. Moalo wa ntho o tlaabo o botsa wena ole motsaa karolo dilo di tswana le dingwaga, bong, kereke tiriso ya nnotagi le tse dingwe. Moalo wa bobedi o tlaabo o itebagantse le nnotagi le diritibatsi tse di garologaneng.

Ga e kare o ntse o tswetse o araba dipotso o thoke go ikutlwa sentle ka nngwe tsela mmotsolotsi ngaka o tla go thusa ka ga a kgonang ka teng kana a go ise ko go ba ba ka go tlamelang go go fa thuso e o ka e tlhokang.

Tsotlhe tse di buiwang mo patlisisong e ke go tshephisa gore ke sephiri ebile leina la gago o le mo tsa karolo le ka se ntshiwe ka lepe letsatsi.

Ke le mmotsolotsi ke dumela gore patlisiso e, e tla nna le mosola mo sepateleng sa Sbrana ka ditsela tse di farologaneng go kganele, go fokotsa le go tlamela ba ba nang le mathata a go dirisa dinotagi ga mmogo le tomagano ya tsone le malwetse a tthalogayo. Le wena ole motsaa karolo mmotsolotsi o tla go tlhathela ka se o ka se dirang ga ona le mathata a dritibatsi le nnotagi.

Fa ona le potso kgotsa o bata go tshwaela sengwe mabapi le patlisiso e, oka ikgolaganya le

1. Ngaka Othalefile Enamasi Otlhapile

Mogala +267 74715055, +254 714506319

Email address: [fifienamasi@yahoo.com](mailto:fifienamasi@yahoo.com)

2. Kenyatta National Hospital-University of Nairobi Ethics and Research Committee

Mogala: 2726300 Ext 44102

Email: [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke)

**CONSENT FORM B (Setswana)**

**KAROLO YA BOBEDI**

Mmotsolotsi ngaka Othalefile Enamasi Otlhapile o nthaloseditse ka botlalo ditsetlana, melawana le maikaelelo a potsolotso/patlisiso e, ebile o ntlhaloseditse ga maina a ba tsaa karolo ele sephiri aka se ntshiwe ka epe nako. Mmotsolotsi o tlhomamisa ga dikarabo tse a di filweng di taabo di dirisiwa hela mo potsolotsong e.

Ka jalo ke dumela go tsaa karolo mo potsolotsong/patlisisong e.

Monwana wa moithaopi/mo tsaa karolo \_\_\_\_\_ Letsatsi \_\_\_\_\_

Monwana wa ngaka \_\_\_\_\_ Letsatsi \_\_\_\_\_

(Dr Othalefile Enamasi Otlhapile).

**APPENDIX 5: SOCIO DEMOGRAPHIC QUESTIONNAIRE FOR PARTICIPANTS**  
**(Setswana)**

*DIPOTSO TSA SEEMO LE SEEMO SA MO TSAA KAROLO*

NOMORO YA MOTSAA KAROLO:

Lefelo la bonno \_\_\_\_\_

**1) Bong**

Monna  Mosadi

**2) Dingwaga**

18-20  21-30  31-40  41-50  51-60  61+

**3) tsene sekolo go ema kae**

Ga ke a tsena sekolo

Sekolo se sepotlana  Sekolo se segolwane  Sekolo sa ithutelo tiro

**4) Tumelo**

Mokeresete  Mo-islam  Kereke ya pholoso  Tse dingwe Tlhalosa \_\_\_\_\_

**5) Tiro**

Moithuti  Mmerekhi  Ga ke bereke  Ke a ipereka

**6) Lenyalo**

Ga ke a nyalwa  Ke nyetswe  Ke nna le mokapelo ko ntle ga lenyalo

Ke tlhadilwe/ke kgaogane le mokapelo ka ha molaong

Ke motlholagadi/moswagadi

**7) A ga gona le mongwe mo losikeng o dirisang ditagi?**

Ee  Nnyaa

**8) A gona le mongwe wa losika o lwalang bolwetse jwa tlhaloganyo ?**

Ee  Nyaa

## APPENDIX 6: WHO-ASSIST V 3.0 (Setswana)

Nomoro ya Mmotsolotsi ..... Lefatshe .....

Kokelo ..... Nomoro ya Molwetsi.....

Letsatsi/Kgwedi/ Ngwaga.....

### TSHIMOLOGO (tswetswe balela molwetsi)

Ke lebogela gore o bo o dumetse go tsaya karolo mo potsolotsong ka bojalwa, lesika lo motsoko le diritibatsi le tse dingwe. Ke tsile go go botsa dipotso mabapi le maitemogelo a gago mo tirisong ya tsone mo botshelong jwa gago mo kgwedding tse tharo tse di fetileng. Ditagi tse di ka gogiwa, di ka metswa, di ka sunyetswa ka dinko, di ka hemiwa, o ka ikenta kana o di tsaya e le dipilisi. (mo supegetse karata ya ditagi)

Dingwe tsa ditagi tse di kailweng o ka di kwalelwa jalo ke ngaka (jaaka Amphetamines, dipilisi tse di robatsang, melemo ya ditlhabi). Mo potsolotsong ga re na go itebaganya le melemo e dirisiwang mme o e kwaletseweng jalo ke Ngaka. Mme ga e le gore o kile wa tsaya melemo eo ka mabaka a sele a e seng a ngaka o go laetseng one, kana o di tsaya gangwe le gape kana o di tsaya phetelela go na le selekanyo seo se beetsweng ke ngaka o ka nkitse. Lefa re ntse re kgathegela go itse ka tiriso ya gago ya ditagi ka go farologana, ka tswetswe re a go tshepisa gore sengwe le sengwe se re se buang ke phithela kgomo ya serotswa.(sephiri)

Ela tlhoko:Pele ga o botsa dipotso, neela molwetsi karata ya dikarabo ya ASSIST

### POTSO 1

Mo botshelong jwa gago ke efe ya ditagi(substances) tse, o kileng wa di dirisa..(O di dirisa e se ka taelo ya ba bongaka)	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jaalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilotse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko (Opioids)		
j) Tse dingwe.....di tlhalose ka botlalo:		

POTSO 2

Mo dikgwedi tse tharo tse di fetileng o dirisitse ditagi tse o buile ka tsone ga kafe?..(gangwe, gabedi hela jalo)	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilotse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko (Opioids)		
j) Tse dingwe.....di tthalose ka botlalo:		

POTSO 3

Mo dikgweding tse tharo tse di fetileng o nnile le maikutlo kgotsa le keletso e tona jang ya go ka dirisa dirisa ditagi (gangwe, gabedi hela jalo)	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilotse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko(Opioids)		
j) Tse dingwe.....di tthalose ka botlalo:		

POTSO 4

Mo dikgwedi tse tharo tse di fetileng go dirisa ditagi ga gago ?..(gangwe, gabedi hela jalo) go amile jang botsogo jwa gago,go tshela ga gago le batho, itsholelo ya gago le dikgang tse di amang ba molao..	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilotse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko (Opioids)		
j) Tse dingwe.....di tlhalose ka botlalo:		

POTSO 5

Mo dikgwedi tse tharo tse di fetileng ke makgetho a le kae a o paletsweng ke go dira se o neng o tshwanetse go se dira ka mabaka a go dirisa ditagi tse..(gangwe, gabedi hela jalo)	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium,Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilotse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko(Opioids)		
j) Tse dingwe.....di tlhalose ka botlalo:		

POTSO 6

A go kile ga diragala gore tsala kgotsa mongwe wa losika kana mongwe hela a supe go tshwenyega ka tiriso ditagi ga gago..	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng ( Halucinate) (Esete-acid,Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko (Opioids)		
j) Tse dingwe.....di tshalose ka botlalo:		

POTSO 7

A o kile wa leka go laola tiriso ya ditagi mme wa palelwa ke go laola kana le gone go fokotsa tiriso ya ditagi.	NNYAA	EE
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		
d) Cocaine ( Mefuta ya cocaine( coke, crack)		
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		
h) Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		
i) Diritibatsi tse do fokotsang bothoko (Opioids)		
j) Tse dingwe.....di tshalose ka botlalo:		

## POTSO 8

A o kile wa dirisa nngwe ya ditagi ka mokento? ( o dira jaalo e se ka taelo ya bongaka)

### Tlhagiso ya bothokwa

Balwetsi b aba ikentileng ka ditagi mo dikgweding tse tharo tse di fetileng ba tshwanetse ba botswa gore ba ne ba ikenta ka tsela e ntse jang ka nako ya teng, go thola gore ba mo diphatseng tse di ntseng jang le gone gore ba ka thusiwa ka tsela e ntseng jang.

#### TSELA YA GO IKENTA

#### DITSELA TSE BA KA THUSIWA KA TSONE

Gangwe mo bekeng kana ko tlase ga moo kgotsa ko tlase ga malatsi a mararo a thomaganeng	Thuso e sa tselelang thata le go thola diphatsa tsa go ikenta
Ba ba dirileng jalo go feta gangwe mo bekeng kgotsa malatsi a mararo le go feta mo bekeng ba thomaganya	A ba diriwe dithathobo tse di tseleletseng gone go alafiwa mo go tseleletseng

#### O KA BALA JANG TIRISO YA TAGI

Mo taging nngwe le nngwe ( e tshwailweng **a**) go ya ko go **j**) thakanya dipalo tsotlhe tse o di boneng go tswa mo dipotso 2 go yak o go 7. O se ka wa tsenya maduo a potso 1 kgotsa 8 mo dipalong tse. Sekai: dipalo tsa Motokwane (Cannabis) di a go balwa jaana Potso 2(c) + Potso 3 (c) + Potso 4 (c) + Potso 5 (c) + Potso 6 (c) + Potso 7(c)

#### THUSO E KA FIWANG MOLWETSI E TLA LAOLWA KE DIPALO TSA GORE MOLWETSI O DIRISA JANG DITAGI

	Kwadisa paloya tiriso ya ditagi	Ga o thoke go tseelwa dikgato	O tshwanetse wa tseelwa dikgato tse di rileng tsa nakwana	O tshwanetse wa fiwa kalafi e tseleletseng
a) Motsoko				
b) Bojalwa				
c) Motokwane				
d) Kwatsi (Cocaine)				
e) Dirirtibatsi tse di thantshang				
f) Diritibatsi tse di gogwang				
g) Dipilisi tse di robatsang				
h) Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng				
i) Diritibatsi tse di fokotsang bothoko				
j) Tse dingwe...				

**A. WHO ASSIST V3.0 KARATA YA KA FA GO ARABILWENG KA TENG YA BALWETSI.**

**Karata ya dikarabo-Ditagi**

a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)
d) Cocaine ( Mefuta ya cocaine( coke, crack)
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)
h) Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)
i) Diritibatsi tse do fokotsang bothoko (Opioids)
j) Tse dingwe.....di tlhalose ka botlalo:

**Karata ya dikarabo (ASSIST potso 2 go ya ko go 5)**

**Never** ( Le ha ele )—ga a di dirisa dikgwedi tse tharpo tse di fetileng

**Once or Twice** ( Gangwefela kgotsa gabedi)—gangwe kgotsa gabedi mo dikgweding tse tharo tse di fetileng

**Monthly** ( Mo kgweding)—gangwe go ya ko go gararo mo kgweding

**Weekly** ( Mo bekeng) gangwe go ya ko go gane mo bekeng

**Daily or almost daily** ( Ka letsatsi kgotsa malatsi otlhe)- malatsi a le matlhano go ya ko go a le supa.

**Karata ya dikarabo (ASSIST potso 6 go ya ko go 8)**

No, Never ( Nnyaa, le ha ele)

Yes, (Ee, mme e seng mo kgweding tse tharo tse di fetileng)

Yes, (Ee, mo kgweding tse tharo tse di fetileng)

**B. TLHATLHOBO YA BOJALWA, GO GOGA LE TIRISO YA DITAGI (WHO ASSIST V 3.0) KARATA YA PEGO YA BALWETSI**

Leina ..... Letsatsi la ditekeletso.....

**DIPALO TSA BA TSAYA KAROLO MO DITAGING**

	DIPALO	SELEKANYO SA BODIPHATSA
a) Lesika la metsokwe ( Motsoko, motsoko o tshotlhiwang le e mengwe hela jaalo)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
b) Dinotagi ( Bojalwa, Mofine le tse dingwe hela jaalo)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
c) Motokwane ( Metokwane ka mefuta ya one (pot,grass, hash)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
d) Cocaine ( Mefuta ya cocaine( coke, crack)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
e) diritibatsi tse di thantshang ( Pilisi tse jesang, pilisi tse di fang maatla)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
f) Diritibatsi tse di gogwang (lookwane, pente, glue le tse dingwe hela jalo)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
g) Dipilisi tse di robatsang (Valium, Serepax le tse dingwe)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
h) Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng ( Halucinate) (Esete-acid, Mushroom le tse dingwe)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
i) Diritibatsi tse do fokotsang bothoko (Opioids)		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo
j) Tse dingwe.....di tshalose ka botlalo:		0-3 Ko tlase 4-26 Fa gare 27+ Ko godimo

## PALO YA GAGO E RAYA ENG?

**Low ( Ko tlase)-** Bodiphatsa mo botsogong le mathata a mangwe mo tirisong ya gago bo ko tlase

**Moderate (Fa gare)-** Botsogo jwa gago bo mo diphatseng le mathata a mangwe ka tiriso ya ditagi

**High (Ko godimo)-** O mo diphatseng tse di ko godimo tsa go nna le mathata a latelang (botsogo, a batho ba o tshelang le bone, a itsholelo/ madi, lelwapa le a semolao) ka mabaka a ka fa o dirisang ditagi ka teng le gone go feleletsa o sa kgone go tshela o sa dirise ditagi.

### A O A KGATLHALA KA TIRISO YA GAGO YA DITAGI?

a. Motsoko	Bodiphatsa jwa go amiwa ke mako a ke: Ko tlase      Fa gare      Ko godimo      (tshwaya e le nngwe)
	<p><u>Go goga motsoko nako tsotlhe go amanngwa le:</u></p> <ul style="list-style-type: none"> <li>• Go tsohala ka pela</li> <li>• Go swaba letlalo</li> <li>• Bolwetsi jwa khupelo</li> <li>• Go amega ga mahatlha</li> <li>• Khupelo mo baneng ba batsadi ba ba gogang</li> <li>• Bolwetsi jwa diphilo</li> <li>• Bolwetsi jwa pelo</li> <li>• Kankere</li> <li>• Go senyegelwa mo Mmeng yo itsholofetseng</li> </ul>

b. Bojalwa	Bodiphatsa jwa go amiwa ke mako a ke: Ko tlase      Fa gare      Ko godimo      (tshwaya e le nngwe)
	<p><u>Go nwa bojalwa phetelela ka nako tsotlhe go amanngwa le:</u></p> <ul style="list-style-type: none"> <li>• Go nna bogale</li> <li>• Boitsholo jo bo sa nnang sentle</li> <li>• Madi a matona</li> <li>• Go sa gakologelwa dilo ka bontsi</li> <li>• Go sa rarabolola mathata fa o na le one</li> <li>• Go senyega thaloganyo</li> <li>• Malwetsi a sebetse</li> <li>• Kankere</li> <li>• Go ipolaya</li> <li>• Mathata mo lwapeng (bakapelo)</li> <li>• Go tsofala ka pela</li> <li>• Go sa kgotsofatsa bakapelo mo go tsa tlhakanelo dikobo</li> <li>• Go lapa mo go feteletseng</li> <li>• Dikotsi le dikgobalo</li> </ul>

c. Motokwane	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase            Fa gare            Ko godimo (tshwaya e le nngwe)
	Go dirisa motokwane thata go amanngwa le: <ul style="list-style-type: none"> <li>• Letshogo</li> <li>• Bothata jwa go reetsa ka kelelelo</li> <li>• Bolwetsi jwa khupelo</li> <li>• Bolwetsi jwa mahatlha</li> <li>• Bolwetsi jwa pelo</li> <li>• Kankere</li> <li>• Go gatelelwa ke maikutlo</li> <li>• Bolwetsi jwa madi a matona</li> </ul>

d. Cocaine	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase            Fa gare            Ko godimo (tshwaya e le nngwe)
	Go dirisa cocaine thata go amanngwa le: <ul style="list-style-type: none"> <li>• Go thorega boroko</li> <li>• Pelo e itiyang thata</li> <li>• Tlhogo e opetseng ruri</li> <li>• Go latlha mmele</li> <li>• Go tshwarwa ke bogatsu</li> <li>• Go ingwaya thata</li> <li>• Go tlola mmele</li> <li>• Go gatelelwa ke maikutlo</li> <li>• Loso la tshoganetso go tswa mo malwetsing a pelo</li> </ul>

e. Diritibatsi tse di thantshang (Amphetamine)	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase            Fa gare            Ko godimo (tshwaya e le nngwe)
	Go dirisa Amphetamine ka nako tsotlhe go amanngwa le: <ul style="list-style-type: none"> <li>• Go thorega boroko</li> <li>• Go sa nna le keletso ya go ja</li> <li>• Go latlhegelwa ke mmele</li> <li>• Go latlhegelwa ke metsi mo mmeleng</li> <li>• Go tshabelelwa ke tlhogo e opang</li> <li>• Go nna bogale</li> <li>• Boitsholo jo e seng jone</li> <li>• Bolwetsi jwa sebetse</li> <li>• Loso la tshoganetso (ecstasy)</li> <li>• Go hupela</li> <li>• Pelo e sa betseng sentle</li> <li>• Ditshika tse di botlhoko</li> </ul>

f. Diritibatsi tse di gogwang	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase      Fa gare      Ko godimo (tshwaya e le nngwe)
	Go dirisa diritibatsi tse di gogwang go amanngwa le: <ul style="list-style-type: none"> <li>• Go tsewa ke sedidi le go bona dilo tse di sa tsheleng</li> <li>• Go sa bona sentle</li> <li>• Dikai tsa bolwetse jwa mhikela (Flu)</li> <li>• Go tswa mokola</li> <li>• Go segega mo maleng</li> <li>• Dikotsi le dikgobalo</li> <li>• Go nna bogale</li> <li>• Go tsietsega</li> <li>• Go swa dikarolo dingwe tsa mmele (pelo, makgwafo, sebete, diphilo)</li> <li>• Loso ka mabaka a pelo</li> </ul>

g. Dipilisi tse di robatsang (Sedatives)	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase      Fa gare      Ko godimo (tshwaya e le nngwe)
	Go dirisa dipilisi tse di robatsang go amanngwa le: <ul style="list-style-type: none"> <li>• Go tsewa ke sedidi</li> <li>• Go tsietsega</li> <li>• Go nna le mathata le go gakologelwa dilo dingwe</li> <li>• Go kgwa</li> <li>• Go opiwa ke tlhogo</li> <li>• Go sa tshela o sa dirise tagi marago ga go e dirisa mo nakong e se ya sepe</li> <li>• Go e dirisa phetelela</li> <li>• E ka go bolaya fa e dirisiwa le bojalwa</li> </ul>

h. Diritibatsi tse di dirang gore o bone dilo tse di sa tsheleng	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase      Fa gare      Ko godimo (tshwaya e le nngwe)
	Go dirisa hallucinogens go amanngwa le : <ul style="list-style-type: none"> <li>• Go thorega boroko</li> <li>• Go bona dilo tse di sa tsheleng</li> <li>• Go kgwa</li> <li>• Go selelega</li> <li>• Pelo e iteelang ko godimo</li> <li>• Go tshoga</li> <li>• Go phadimoga</li> </ul>

i. Diritibatsi tse fokotsang bothoko (opioids)	Bodiphatsa jwa go amiwa ke makoa a ke: Ko tlase      Fa gare      Ko godimo      (tshwaya e le nngwe)
	<ul style="list-style-type: none"> <li>• Go babiwa</li> <li>• Go selelega</li> <li>• Go kgwa</li> <li>• Go tsewa ke sedidi</li> <li>• Go bipelwa</li> <li>• Go bola meno</li> <li>• Bothata jwa go gakologelwa dilo dingwe</li> <li>• Bothata ko tirong le ja itsholelo</li> <li>• Go roba melao e beilwe</li> <li>• Go di dirisa phetelela</li> <li>• Go sa eletsa thakanelo dikobo</li> <li>• Go palelwa mo go tsa tlhakanelo dikobo</li> </ul>

## **KARATA YA BODIPHATSA JWA GO IKENTA- TSE AMANG MOLWETSI**

Go dirisa diritibatsi ka go ikenta go ka baka diphatsa go tswa mo tirisong ya diritibatsi

### **1.SERITIBATSI**

- Fa o ikenta ka seritibatsi go na le kgonagalo ya gore o felele osa kgone go tshela o sa di dirise.
- Fa o ikenta ka Amphetamine ( Diritibatsi tse di thantshang) kgotsa Cocaine o nna le kgonagalo ya gore o felele o latlhegelwa ke thaloganyo.
- Fa o ikenta ka Heroin kgotsa dingwe tsa dipilisi tse di robatsang go na le kgonagalo ya gore o di dirise phetelela.

### **2. MOKGWA WA GO IKENTA**

- Fao ikenta o ka nna wa itshenya letlalo le ditshika mme o felele o itsentse megare.
- O ka nna wa ikentsha mabadi, dintho, go ruruga le gone go itsenya malwetsi ka mefuta
- Ditshika dingwe di ka swela ruri
- Fa o ikenta mo molaleng o ka ipakela stroke

### **3. GO HAPANNA MEKENTO**

- Fa le hapanna didirisiwa tse le ikenta ka tsone (mekento, dintshwana le tse dingwe) go na le kgonagalo ya go fitisa malwetsi a tshelanwang ka madi jaaka Hepatitis B, Hepatitis C le mogare wa segajaja.

### **4. Go babalesegile go sa ikenta**

### **5. Fa e le gore wa ikenta:**

- Dirisa didirisiwa tse di phepa ka nako tsotlhe (mekento le mamao, dintshwana)
- Dirisa mekento le mamao a mash aka dinako tsotlhe

- Se hapaanne didirisiwa le ba bangwe
- Phepafatsa fa o baakanyetsang metswako ya gago teng
- Phepafatsa diatla tsa gago
- Phepafatsa lefelo la fa o kentelang teng
- Dirisa mafelo a farologanyeng a fa o kentelang teng nako le nako.
- Ikente ka bonya
- Tsenya lemao le mokento mo sengweng se se thata o bo o latlhela fa go babalesegileng

6. Fa o dirisa diritibatsi tse di thantshang jaaka Amphetamines kgotsa Cocaine tse di latelang di ka go tswela mosola go fokotsa go lathegelwa ke tlhaloganyo

- Emisa go ikenta o bo o goga
- Emisa go ikenta malatsi otlhe

7. Fa o dirisa diritibatsi tse di fokotsang botlhoko jaaka Heroin tse di latelang di ka thusa go fokotsa diphatsa tsa go dirisa phetelela.

- Emisa go dirisa diritibatsi tse dingwe segolo jang bojalwa ka nako ele nngwe.
- Dirisa selekanyo se sennye, ka nako tsothle dira ditekeletso tsa mofuta o mosha.
- Kopa mongwe a nne le wena fa o di dirisa
- Se ikentele mo mafelong a go yang go nna thata gore bangwe ba ka go bona fa o dirisitse ditagi phetelela
- Itse nomoro ya ba thuso ya potlako

**THANOLO LE GO AMOGELESEGA MO DIPUONG TSA SELEGAE LE NGWAO:  
SEDIRISIWA SA DINGAKA LE BABATISISI.**

Sedirisiwa sa ASSIST, ditaelo, Karata tsa diritibatsi, sekale sa dikarabo le bukana ya ditaelo tsa go dira sengwe di ta tshwanelwa ke go ranolelwa mo dipuong tse di dirisiwa mo gae gore di kgone go dirisiwa mo mafatsheng a mangwe kana dikgaolo dingwe. Thanolo go tswa mo Sekgoeng e tshwanetse go nna e lebaganeng gore molaetsa le serodumo sa sedirisiwa e nne sone. Le fa go ntse jalo mo dingwao tse dingwe le batho ba puo tse dingwe sedirisiwa sa ASSIST ga se kake sa kgona go ranolwa se tlhamaletse go tla tshwanelwa ke gore dilo dingwe tsa ngwao di lebelelwe le gone gore a molaetsa ga o latlhege. Maina a diritibatsi a tshwanelwa ke go amogelesega mo bathing le tikologo e ba mo go yone, re tshwanela ke go tlhaloganya gore ka fa go bitswang senotsididi go a farologana go tswa mo lefatsheng le lengwe go ya ko go le lengwe.

Thanolo e tshwanetse go dirwa ke motho yo itseng go ranola dipuo tse pedi, segolo bogolo mmereki wa botsogo yo o nang le boitsanape mo go tsa go botsolotsa. Ka sedirisiwa sa ASSIST thanolo e tshwanetse ya sekasekiwa ke bo mantswitswidi ba thanolo ya dipuo tse pedi go feta go netefatsa gore mafoko kgotsa molaetsa ga o ree dilo tse pedi.

Go ranolela gape ko sekgoeng go tshwanetse jaanong ga dirwa ke moranodiwa yo o ikemetseng yo e leng gore puo ya gagwe ke Sekgoa go netefatsa gore molaetsa ga o a latlhega. Tsela e, e gagamaditsweng ya go ranola e bothokwa mo sedirisiweng sa ASSIST go netefatsa gore molaetsa e ka tshwantshangwang e a fitlhelwa gongwe le gongwe ko sedirisiwa sa ASSIST se dirisiwang teng lefatshe ka bophara.

Thanolo ya mokwalo o le tse dingwe tse di amanang le one e ka dirwa ga e batiwa. Mme se ga se thokane le go tsamaya ka ditsamaiso tse di kailweng fa godimo mme e tshwanetse go feta ka baitsaanape ba dipuo tse pedi go feta.

Pele ga o ka ranolela sedirisiwa sa ASSIST le mekwalo e amanang a le yone ko dipuong tse dingwe, botlhe ba ba nang le kgatlhego ya go dira seo ba ka ikgolaganya le lekalana la WHO ka ditsetlana tse di salwang morago le gone gore a go na le mekwalo e ranotsweng jalo. Kwalela ba Department of Mental Health and Substance Dependence, World Health Organisation, 1211 Geneva 27, Switzerland.

# PREVALENCE AND PATTERNS OF SUBSTANCE USE DISORDERS IN SBRANA PSYCHIATRIC HOSPITAL, BOTSWANA

## ORIGINALITY REPORT

<b>15%</b> SIMILARITY INDEX	<b>12%</b> INTERNET SOURCES	<b>7%</b> PUBLICATIONS	<b>3%</b> STUDENT PAPERS
--------------------------------	--------------------------------	---------------------------	-----------------------------

## PRIMARY SOURCES

<b>1</b>	<b>erepository.uonbi.ac.ke</b> Internet Source	<b>1%</b>
<b>2</b>	<b>papers.ssrn.com</b> Internet Source	<b>1%</b>
<b>3</b>	<b>Submitted to Coleg y Cymoedd</b> Student Paper	<b>1%</b>
<b>4</b>	<b>www.omicsonline.org</b> Internet Source	<b>1%</b>
<b>5</b>	<b>link.springer.com</b> Internet Source	<b>&lt;1%</b>
<b>6</b>	<b>sajp.org.za</b> Internet Source	<b>&lt;1%</b>
<b>7</b>	<b>www.mdpi.com</b> Internet Source	<b>&lt;1%</b>
<b>8</b>	<b>kipdf.com</b> Internet Source	<b>&lt;1%</b>
<b>9</b>	<b>www.researchsquare.com</b> Internet Source	<b>&lt;1%</b>