

The relationship between depression, anxiety, stress and substance use among youth at North-West University Mafikeng Campus

MC Malebana

orcid.org/0000-0001-6552-8840



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Supervisor: Prof CA Oduaran

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Student number: 27556212





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DECLARATION

I, Malebana Mmakwena Christabel, declare that the mini-dissertation entitled “**The Relationship between Depression, Anxiety, Stress and Substance use among Youth at North-West University Mafikeng**”, hereby submitted for the degree of Master of Social Science in Clinical Psychology, has not previously been submitted by me for a degree at this or any other university. I further declare that this is my work in design and execution and that all materials contained herein have been duly acknowledged.



.....

Malebana Mmakwena Christabel

16/03/2018
.....

Date

DEDICATION

This study is dedicated to my caring and loving son Mosa Malebana.

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The relationship between depression, anxiety, stress and substance use among youths at North-West University Mafikeng Campus

Abstract

Globally, there is an upsurge in the use of substance. The rate of prevalence in South Africa in recent times is alarming, particularly among the youth population. However, prevalence rate and consequences of substance use have been addressed in a number of previous studies, even in South Africa. The aim of this study is to investigate the association between depression, anxiety, stress and substance use among youths at North-West University, Mafikeng campus.

The study adopted the quantitative approach, using correlational design. Primary data used for the study were collected from a sample of 336 undergraduate students. The data were collected with the use of Depression, Anxiety and Stress Scale (DASS-21) and Drug Abuse Screening Test (DAST-10). Results from the Pearson Product Moment Coefficients analysis revealed a positively significant relationship between depression and substance use. It further revealed a positively significant relationship between anxiety and substance use. In addition, the results indicated that stress positively correlated with substance use. The results were discussed in line with the theoretical foundations and previous empirical studies on substance use. It was concluded that as depression, anxiety or stress increase, substance use might also gradually increase. Recommendations were also made based on the findings that emanated from this study.

CHAPTER ONE

1. Introduction

Globally there is an upsurge in substance use among youths (Birhanu, Bisetegn & Woldeyohannes, 2014). This could be a result of the belief that substances potentially provide some relief from mental health concerns like depression, anxiety and stress, without considering the attendant public health concerns. The situation in South Africa is worrisome as substance use in the form of illegal drugs is double the world norm, with about 60% of crimes resulting from drug use (Thomson, 2013) and 15% of the drugs are used by youths (News24.com, 2015). Scholars have argued that youths indulge in substance use in order to reduce lifetime prevalence of depression, anxiety and stress that has been put at 5%-70% worldwide (Sahoo & Khess, 2010) and South Africa contributes more to these statistics. But then, substance use is a severe public health problem among youths, leading to mental challenges (Collishaw, Maughan, Natarajan & Pickels, 2010; Martin-Merino, Ruigomez, Wallender, Johansson & Gacia-Rodriguez, 2010; Harpin, Kenyon, Kools, Bearinger & Ireland, 2013).

The researcher's observation revealed that a substantial number of students is in danger. It was observed that some of them indulge in substance as escape route from certain mental health issues. According to Verma, Jain and Roy (2014), depression, anxiety and stress constitute risk factors for indulging in substances use. Therefore, this study concerns itself with understanding the symptoms of mental health concerns that could predispose youths to consider substance use as an option. Specifically, the study examines the relationship that is likely to exist between the symptoms indicative of mental health (depression, anxiety, and stress) concerns and substance use among youths.

1.1. Background to the Study

From time immemorial, people have resorted to the use of substances like alcohol, herbs and other related drugs to alter consciousness or perception. These loose uses of substances have led to major scientific discoveries. However, there was a paradigm shift when various authors begin to provide different definitions of substance use (Boyd, 2017). By implication, drugs include every other substance that may alter the levels of consciousness. This definition has permitted some countries to allow the consumption of substances that may potentially have serious health implications on the citizens. This freedom of consumption portends risk of addiction and other behavioural vices like suicidal ideation, increased accident rates and substance use disorders, among others. Anecdotal observations revealed that frequently used drugs among youths in South Africa include alcohol, cannabis and tobacco. In fact, this is not peculiar to South African youths alone as there is documented statistics of its prevalence across the globe.

Globally, an estimation of 243 million people in 2012 were reported to have used illegal drugs, especially substances such as cannabis, opioids and cocaine (United Nations Office on Drugs and Crime [UNODC], 2014), while about 50% of youth seek treatment for substance induced disorder (UNODC, 2016). The study also revealed that substance use is high among youth aged 18-25 years, with report of high frequency for non-medical use or prescription (UNODC, 2016). The highest rate of substance use in Spain is alcohol at 38.8%, followed by tobacco at 21.8% and cannabis at 11.6% (Espada, Sussman, Medina & Alfonso, 2011).

In Africa, among Kenyan youths, Njeri and Ngesu (2014) reported that about 52% of students believed that substance use causes poor performance. One would still wonder why youths continue to indulge in substances, given its negative consequences on academic

performance (Atta, Baba & Audu, 2016). The assessment on drugs and substance use in Kenya showed that some of them resort to substance use to come out of mental health issues. For example, 5.5% of stressed youths in Kenya were dependent on alcohol, while 4.5% were dependent on tobacco (National Authority for the Campaign against Alcohol and Drug Use, NACADA, 2012). A study by Peltzer, Pengpid, Olowu & Olasupo (2013) indicated that there is a moderate prevalence rate of 7.0% for severe depression amongst a trial of university students in Nigeria. This assertion may be responsible for increased consumption of different substances among the sampled population. In Rwanda, the overall youths' lifetime prevalence for substance use is 52.5% (Kanyoni, Gishoma & Ndahindwa, 2015).

In South Africa, report on the ripple effects of substance use is alarming. For instance, the South Africa Police Services reported that drug (substance) use accounts for 60% of all crimes (Thomson, 2013) that were committed in the year under review. The majority of the culprits were either adolescents or youths. Among secondary school students, the prevalence of cannabis use is 12.7% (Dada, Burnhams, Laubscher, Myers & Parry, 2013). About 17% of the youth, aged 19 years use substances. In a similar manner, Jordan (2013) argued that over 15% of the youth's population has a substance use problem. Marijuana has been reportedly consumed by youths on a regular basis at 49% in 2013 (Department of Social Development, 2013) and sporadically increased to 97% in 2014 (Mothibi, 2014). Thus, this study attempts to investigate the relationship between depression, anxiety, stress and substance use.

Depression has been described as a condition that is characterised by "diminished interest or pleasure in all or most activities of the day, significant weight loss when not dieting or weight gain, insomnia or hypersomnia, fatigue or loss of energy nearly every day, thoughts of death or suicidal ideation" (APA, 2013). The World Health Organization (WHO, 2012) states that depression is estimated to have affected 350 million people in the preceding year. A study by Ibrahim, Kelly, Adams and Glazebrook (2013) on the incidence of

depression among university students established the prevalence rates that ranged from 10% to 85%. The increase in legal and illegal use of substances by depressed youths has been adjudged to lead to unintentional and intentional injury cases of depressive symptoms and irrational actions (Rehm, Mathesis, Popova, Thavorncharoensap, Teerwattananon & Patra, 2009). Amongst youth with depressed symptoms, 53% poised a high consumption of substance use (JourneyPure, 2016).

Another factor that may be responsible for substance use is anxiety. The American Psychological Association (APA, 2013) defined anxiety as disorders that share features of excessive fear and related behavioural disturbances. It is a subjective feeling of unease, discomfort, apprehension or fearful concern (DSM IV-TR, 2000). It is often considered a normal reaction to a real or potential danger. It becomes a problem when the symptoms are prolonged and irrational, and occur when there are real or potential dangers (DSM IV-TR, 2000) which affect daily activities. Anxiety could be problematic to students who require concentration to benefit from learning. Rana and Mahmood (2010) affirmed that test anxiety is a factor that could lead to underachievement and low performance among students. Thus, students may be likely to seek solution to anxiety early so that it does not affect their academic performance.

Stress refers to any “action or situation that places special physical or psychological demands upon a person. It refers to anything that can unbalance an individual’s equilibrium” (Lazarus & Folkman, 1984). Developmental upbringing and unresolved issues during childhood may lead to psychological stress among youth (Damodaran & Paul, 2015). Academic demands and pressures may also cause stress for many students (Hashim, 2003). It has been documented that 75% of youth experienced severe academic stress (Jayanathi, Thirunavukarasu & Rajkumar, 2014). Youths experience different “life stresses ranging from catastrophic or traumatic life events, persistent strain and daily hassles”. However, it becomes

problematic when stress impacts on normal human functioning. The ability to identify and manage stress can make a significant difference in youth's physical and mental development (Simuforosa, 2013).

Anecdotal observation revealed that undergraduate students at North-West University indulge in alcohol and other drugs. In most cases, they are sighted alone, or even verbally acknowledge that they indulge in substance use in order to ease off academic stress and come alive again. These observations have prompted the researcher to embark on an empirical study that could validate their claims. Thus, the current study investigates the relationship between depression, anxiety, stress and substance use among youths.

1.2. Problem Statement

Studies on substance use have continued to evolve, so much that scholars have documented its negative outcomes. For instance, alcohol and other substances have been linked to poor academic performance (Mekonen, Fekadu, Mekonnen & Workie, 2017), and involvement in crime, violence, suicidal ideation, social health and economic problems (Morejele, Parry, Brook & Kekwaletswe, 2012; Njeri et al., 2014; Mothibi, 2014). Given these outcomes, scholars have attempted to understand the likely antecedents of substance use among different populations.

Previous studies that attempted to establish a link between anxiety and substance use have yielded different results. While Brook, Cohen and Brook (1998) argued that anxiety did not relate to substance use, Lingford-Hughes, Potokar and Nutt (2002) claimed that a significant relationship exists between these two variables (anxiety and substance use). Similarly, Oshodi, Aina and Onajale (2010) reported that students may use substances to relief stress, but Mphele, Gralewski and Balogun (2013) disagree, claiming that no relationship exists between stress and alcohol use. Baskin-Sommers and Foti (2015) found

that substance use may lead to a decrease in pleasurable activities (depression) but Mossie, Kindu and Negash (2016) reported otherwise, that substance use leads to depression. It is obvious from the above studies that there are conflicting findings on the link between depression, anxiety, stress and substance use. Therefore, the current study intends to reconcile these discrepancies by investigating the relationship between the identified variables.

1.3. Significance of the Study

The current study will contribute significantly to theory and practice. Theoretically, it contributed to existing empirical data on substance use among South African youths. It also threw more light on the association between mental health concerns (depression, anxiety and anxiety) and substance use. In practice, the university management may use the findings of the study to establish counselling units and campaign programmes to reduce substance use among youths. Similarly, the findings could benefit hospitals that are specialised in dealing with patients who are addicted to drugs to understand that depression, anxiety and stress could be remote causes of their addiction. Hence, they will be able to curb it simultaneously with substance use to avoid recurring relapse and hospital re-admission of depression, anxiety and stress triggered by substance use.

The findings from this study have been able to update knowledge on trends regarding depression, anxiety, stress and substance use. This could assist policy makers to make policies that will try to alleviate the problem among youths. Besides, it will spur government to invest more funds in substance control in order to minimise this pandemic.

1.4. Aim of the study

The aim of this study is to investigate the relationship between depressions, anxiety, stress and substance use among the youths at North-West University, Mafikeng Campus.

1.5. Objectives of the Study

The objectives of the study were to:

- a. determine the relationship between depression and substance use;
- b. examine the relationship between anxiety and substance use; and to
- c. investigate the relationship between stress and substance use.

1.6. Research Hypotheses

Based on the direction of the arguments in literature, the following hypotheses were postulated for the study.

- i. There will be a significant relationship between depression and substance use.
- ii. There will be significant relationship between anxiety and substance use.
- iii. There will be a significant relationship between stress and substance use.

1.7. Delimitation of the Study

The study was conducted among university students between the ages of 18 and 25 years, studying at North-West University, Mafikeng Campus. The study cannot cover the whole of North-West University due to the limited time of study and insufficient funds.

1.8. Definition of Terms

1.8.1. Substance use: refers to consumption of alcohol and other drugs (Boyd, 2017).

1.8.2. Youth: refers to students of North-West University, Mafikeng Campus aged between 18 and 25 years.

1.8.3. Depression: refers to “markedly diminished interest or pleasure in all or most activities of the day, significant weight loss when not dieting or weight gain, insomnia or hypersomnia, fatigue or loss of energy nearly every day, thoughts of death or suicidal ideation” (APA, 2013).

1.8.4. Anxiety: refers to the disorders that share features of excessive fear and related behavioural disturbances (APA, 2013).

1.8.5. Stress: refers to “any action or situation that places special physical or psychological demands upon a person, anything that can unbalance his individual equilibrium” (Lazarus, et al., 1984).

CHAPTER TWO



LITERATURE REVIEW

This chapter consists of the theoretical framework, empirical review of literature and research hypotheses.

2.1. THEORETICAL FRAMEWORK

The theory of planned behaviour serves as the main theory upon which the variables of the study are anchored. However, other theories such as Erik Erikson theory of psychosocial development, Aaron Beck's cognitive theory of depression and Lazarus' theory of stress were included to provide theoretical explanations for depression, stress and anxiety.

2.1.1. Theory of Planned Behaviour (TPB)

TPB, as proposed by Ajzen (1991), began as a theory of reasoned action (Ajzen & Fishbein, 1980) to predict the connection between intention and behaviour with emphasis on specific time and place. It suffices to state that when the intention to act in a particular direction becomes strong, there is every tendency that such intentions will translate into behaviour. The theory posits that a "set of motivational factors leads to seek to act in a certain way". Ajzen (1991) opined that the theory has three main dimensions. These are attitude, subjective norm and perceived behavioural control. Attitude reflects an individual's degree of positive or negative feeling towards a particular behaviour. Subjective norms relate to what significant others think of the behaviour. It promptly concerns a person's perception of the context within which behaviour occurs.

Perceived behavioural control explains a person's awareness of the level of difficulty of the behaviour. This suggests that when the performance of the behaviour appears easy, there is every tendency that such behaviour will occur. It is important to mention that the

introduction of this sixth construct changed the nomenclature of the theory from reasoned action to planned behaviour. Since the theory emphasises intention, it suggests that when youth perceived that indulging in substance use will help them overcome depression, anxiety and stress, they translate that into behaviour accordingly.

2.1.2. Psychosocial Theory of Development

Erik Erikson (1963) propounded the theory of psychosocial development consisting of eight stages that spanned infancy through to adulthood. Each of the stages has been described to consist of a peculiar psychosocial crisis, which could result in a positive or negative outcome for personality development. Thus, when an individual successfully navigates through the crisis, it leads to a well-developed personality that possesses high self-esteem. This study explores the relevance of the fifth stage of Erikson's theory, the identity versus role confusion. It occurs between childhood and adulthood, whereby youths have moral and ethical obligations that they need to follow (Erikson, 1963). Adolescents at this stage search for a sense of self and personal identity through a forceful examination of personal values, beliefs and goals. They attempt to carve out an identity for themselves. The inability to properly manage the crisis at this stage of development may result in confusion among the youths. This may consequently lead to depression, anxiety and stress. When these occur, they may consider substance use as an option by identifying with their peers who have indulged in substance use as a way of surviving the crisis at this stage. It is argued in this study that when an average youth is confused, there is a high tendency for such an individual to be depressed. This is because the individual does not know the next line of action except that there is an urgent intervention.

2.1.3. Lazarus's Theory of Stress

Lazarus (1966) proposed a theory of psychological stress in which he conceptualised stress as referring to a relational concept not defined by specific kind of external factor or internal physiological factor. Rather, he propounded that stress cannot be described by environmental events or individuals' response; instead, the critical factor is the way people perceive a psychological situation. The effects of stress on an individual is mostly grounded on the person's feelings of danger, exposure and ability to cope than on the stressful event itself. According to Lazarus, et al. (1984) "psychological stress refers to a particular relationship between the person and environment that is appraised by the person as exceeding resources and endangering wellbeing". There are two central concepts included in this psychological stress theory, namely appraisal and coping. Appraisal is when the youths evaluate the situation as negative or positive to their well-being (Lazarus, et al., 1984). It reflects the evaluative component of stress that explains the emotional process that goes into determining whether a particular situation or event is stressful or not. When a situation is evaluated as negative (threatening), the youths may respond by exhibiting worry, anxiety or fear.

The second component of Lazarus' psychological stress theory is coping. According to Folkman and Lazarus (1980), coping explains the cognitive appraisal of the transaction between the environmental demands and available resources within the individual to cope with such demands. It reflects the efforts by an individual to reduce or tolerate the demands from the environment. In a situation where an individual finds it difficult to negotiate between demands and available internal resources, stress becomes inevitable. It follows therefore that when youths' wellbeing is overwhelmed by demands that exceed available resources, threatening substance use could result as a way of managing stress (Lazarus & Launier, 1978). The substance as coping mechanism by youth alters their ways of bodily

functioning and change their sleeping patterns as some believe it helps them to study while it causes harm to them.

2.1.4. Beck's Cognitive Theory of Depression

The cognitive theory of depression was propounded by Beck (1967). He proposed that negative thoughts that are “generated by dysfunctional beliefs are typically the primary cause of depressive symptoms”. The theorist proposes that there is “direct relationship between the quantity and sternness of negative thoughts” from an individual, and their depressive symptoms. The more negative thoughts experienced by youths, the higher the possibility that they will become depressed (Beck, 1967). It may be inferred that, if youths view themselves as being inadequate, failure and no hope for the future, they are more likely to be depressed. The combination of the three thoughts is called the negative cognitive triad. Depression is likely to occur when these beliefs are present in youth's cognition (Beck, 1972). Beck (1967) opined that a depressed person views the world with a depressive and distorted lens with no feasible sign of trust in either self or the world.

At the initial stage of the development of this theory, Beck (1967) identified some forms of distortions in a depressed person. One such distortion, in which a depressed person thinks he is responsible for whatever problem his neighbour might have at a distinct point in time, is referred to as arbitrary inference. Another type of distortion is called selective abstraction (Beck, 1967). This occurs when a person focuses more on the negative element in a generally appraised positive information. Beck (1967) further explained that depressed persons might magnify or trivialise positive information or experiences. This theoretical explanation of depression helps to understand the cognitive process in depression. In other words, once a distorted cognition is already formed, subsequent experiences are

unconsciously interpreted based on this cognitive capacity. These experiences appear to be automatically assessed from our thoughts.

2.2. Review of empirical studies

In this section, relevant previous studies on variables of substance use, depression, anxiety and stress were reviewed in order to understand the state of knowledge on the concepts.

2.2.1. Substance use

Boyd (2017) conceptualised substance use to mean consumption of alcohol or drugs. Youth may use the same drug, which could influence people in various ways. In order to understand youth's pattern of substance use, it is essential to find out the meaning of a particular drug experience towards them. The three main psychoactive drug types that youth take to change how they feel or behave are depressants, stimulants or hallucinogens (Consoli et al., 2013). Studies on the impact of these categories of substances are reported in literature. For instance, at a university in Sub-Saharan countries, substance use prevalence of 28.6% among students was negatively associated with poor academic achievement (Mekonen, et al., 2017). Studies on substance use is rising considerably among Ethiopian youths specifically, college and university students with a number of (62.4%) participants reporting that they had at least used one substance. The regularly used substance was alcohol (50.2%). Male youths had a strong alliance with substance use (95%) more than their female counterparts did (Tesfaye, Derese and Hambisa, 2014).

Stimulant drugs arouse the central nervous system and caused the youth to feel more wakeful, attentive or positive. Youths get involved in the use of substances in order to feel high as substances produce deep feelings of pleasure. The results depend on a certain

substance used. A sensation of euphoria may be followed by other effects such as feeling high after taking cocaine and the feeling of self-confidence, power and increase in energy (Pluddemann, Flisher, McKetin, Parry & Lombard, 2010). Whereas when heroin is taken, the euphoria is followed by relaxation and feelings of satisfaction. Stimulants potentially increase the rate at which the heart beats, body temperature and blood pressure. The higher doses of stimulants may result in physical effects such as loss of appetite, dilated pupils, talkativeness, agitation and inability to sleep. Overstimulation and prolonged use by the youth may result in “anxiety, panic, seizures, headaches, stomach cramps, aggression and paranoia”. Mild stimulants include tea, coffee, cola drinks, tobacco or nicotine (Chesang, 2013).

Although substance use by youth is the custom, not everyone who tries substances progresses to substance use. Among most youth, this exposure exemplifies the outcomes of developmental pathways that begin in childhood and continue in different forms through adolescence and young adulthood. There are substances that are used by youth in order to assist them to perform well. Stimulants may be used to improve cognitive functioning and athletic performance, which may end up being used by the students to perform better in class. Feelings of curiosity and peer-pressure cause the youth to be vulnerable to substance use as they need to belong to a certain group or even to impress friends (Nkyi, 2014).

In the study conducted at the University of Michigan (2011), the findings showed an association between major depressive disorders, panic disorder, generalised anxiety disorder and cigarette use. Furthermore, there was a negative relationship between major depression and the use of alcohol. A strong relationship was found between generalised anxiety disorder and substance use among male youth (Cranford, Eisenberg & Serras, 2009).

Opioids are categorised as narcotics addictive drugs with pain relieving and sleep inducing properties. Opioids cause an intense feeling of pleasure and this is the reason for

their primary popularity as street drugs. They cloud the consciousness of youth's personal problems and attract the youth to seek escape from stress (Oshodi, et al., 2010). Opioids could directly arouse the brain's pleasure circuit and affect responsible brain networks in terms of feelings of sexual pleasure, including pleasure from eating.

Heroin overdose causes reduction in oxygen to the brain, suppressed respiration, a coma or even death. Overdose results in death due to respiratory paralysis or cardiac arrest (Chesang, 2013). Substance use increases the possibilities of being involved in traffic accidents, which may cause death or injury. In the USA, alcohol related highway accidents are the principal causes of death among young people aged 15-24 years. About half of all youth death in drowning, fires, suicide and homicides are substance related. Living in a relationship that is not conducive, abusing substance and having depressive symptoms lead to a higher risk of committing suicide (Mental Health Foundation, 2016). The use of heroin causes euphoria, reduced appetite, chronic bronchitis, tetanus, hepatitis and endocarditic. Frequent and prolonged use leads to loss of weight, impotence, blindness, orgasm failure, stomach problems, liver and lung damage (Chesang, 2013).

Stimulants are categories of drugs that stimulate and maintain activities while reducing symptoms of work related stress like fatigue. Examples of stimulants include cigarette, caffeine, amphetamines and cocaine. Cocaine is a more popular type of stimulant. The routes of administration often include swallowing, sniffing or injecting. These drugs can provoke changes in the perceptions and thoughts of users. They are usually referred to as "consciousness expanders". Hallucinogens also belong to the group of stimulants. Marijuana, which is also called Indian hemp or "igbo", is a more common hallucinogen in Nigeria. It is believed to produce excitement and increased enjoyment in leisure-related activities like music and sex. It has also been found to affect self-concept of individuals who indulge in such drugs. Self-concept "refers to the way an individual perceives himself or herself in a

variety of areas for example academically, physically, and socially” (Louw, 2001). Research has proved that low self-esteem can result in a negative redefinition of self-concept, which may be able to cause students to engage in escapist behaviour such as drug and substance use.

The effect of substances on human is to temporarily relieve some of the depressive symptoms by depressing the central nervous system and causing ‘numb’ emotions to avoid dealing with difficult issues (Eaton, Kann, Kinchen & Wechsler, 2013). A smoked or injected substance reaches the brain within seconds, while producing a powerful rush of pleasure. The feeling of intense high can go away within few minutes, causing the user to drop down to lower, more normal levels. For this reason, youths use substances to recapture the fleeting pleasurable state (Hartman, 2015). Substance use may trigger new symptoms of mental illness (The Ranch, 2012), and may cause depressive symptoms more severe by increasing the intensity and frequency of negative thought and self-destruction behaviour.

2.2.2. Substance use across societies

The impact of substance use on society is a sensitive issue mainly as far as youths are concerned. Factors such as availability, expectation of effects, culture and current fashions concerning substance use play an important role in the substance use by youths. The attitude and behaviour of youth towards alcohol in society should also be taken into consideration when examining substance use in the adult world. This attitude is informed by the dispositions of societal norms and values. In the environment of the Irelands society, substance use is considered with pride among the youths and adults, while in Mediterranean countries it is great shame and embarrassment. Substance use and its costs are not a necessary rite of passage that youth need go through to mark their status as emerging adults instead, it is a feature of their social landscape (McDermott & Blackwell, 2014).

Traditional Hispanic American cultures put severe boundaries on the use of alcohol by women, especially heavy drinking. Substance use is taking a heavy toll on African Americans. Yet African Americans are much less likely than non-Hispanic White Americans to develop substance use or reliance (Grant et al., 2005). There are subcultures and social structures that involuntarily channel people towards certain behaviours. Medication adverts send the message that drug use is an acceptable way of solving problems. Other environments are notable by a general absence of rewards, making the choice of drugs seem more understandable.

Male youths have been found to likely indulge in almost all types of illegal drugs than their female counterparts (SAMHSA, 2014) as well as using illegal drugs to end in emergency and unpleasant feelings than females. For some category age groups, male youth experienced high amounts of use of illegal drugs and alcohol than female youths. African American youths are less likely than European American youths to develop substance use problems (Consoli et al., 2013). Ethnicity and substance use rates differ among American ethnic and racial groups. There are tight social controls among the Jews, Italians, Greeks, and Asian that are placed on excessive and underage substance uses. In general, Asian Americans drink less heavily than other population groups.

In the South African context, coloured females are found to have substance use problems such as a heavy drinking and methamphetamine use. Black female youth are mostly associated with the use of cannabis. Although the positive use of recent methamphetamine was present among mainly coloured female youth, the use of these substances leads them to engage in risky sexual behaviour such as unprotected sex (Myers *et al.*, 2013).

There is a possibility that excessive substance use is not constrained by strong culture only. There are some underlying biological factors such as flushing response to substance

use, which include “redness and feelings of warmth on the face, higher doses, nausea, heart palpitations, dizziness, and headaches. Genes that control the metabolism of alcohol are believed to be accountable for the flushing response” (Luczak, Glatt & Wall, 2006). People naturally like to avoid these hideous experiences by devising a natural defence against alcoholism through excessive intake of substances. Substance use has a different physiological effect such as adverse consequences such as insomnia (Ekpenyong, 2012). Chesang 2013 argued that traditionally, cocaine leaves were chewed to suppress hunger.

Substance use may depress or excite the central nervous system through the provision of predictable ways that are effective to change youth’s feelings. Youths decide to use substances that help them in a certain manner like pleasure increase, emotional decrease or even to gain a sense of belonging socially.

Substance use leads to poor performance in learning (Chesang, 2013). Students who use substance find it difficult to retain what they have read when under the influence of substances. Substance use may also distort the motivation required to acquire new information. Most of the youths who are employed may use substances, especially when they have challenges regarding absenteeism and inefficiency on the job. Substance use is known to reduce performance and productivity (Oshodi, et al., 2010)

The continuous substance uses by youths makes pleasurable activities to be decreased (Baskin-Sommers & Foti, 2015). Marijuana lowers the functioning processes of youth’s intelligence quotient (IQ) such as cognitive functioning, which becomes impaired, including executive and processing speed, which results in students dropping out from study (U.S. Department of Justice, 2014).

In the same vein, Oshodi, et al. (2010) affirmed that students use substances to reduce stress as well as to keep awake at night in order to study. The consequence of taking those

substances that boost one to stay awake at night is addiction. This may eventually cause negative health implications and adversely affect performance in examination, contrary to the expectation of the students (Ojikutu, 2010). Hasler and Clark, 2013 indicated that substance use is linked to several mental and physical health problems, including disturbed sleep. They have also found that there is alliance between substance use and sleep that appears to be bidirectional in that substance use may directly cause sleep disturbances, and difficulty sleeping may be a risk factor for relapse to substance use. Although many gaps in knowledge persist, especially regarding whether circadian disturbance results in substance use or dependence, growing evidence similarly links substance use to disturbances in circadian rhythms.

Sleep among youth is constantly disrupted by the brain- altering effects of substance use that they have been injecting for a long time. The Ranch (2012) argued that even when substance users are recovering, a good night sleep might still be a difficult thing to them as insomnia takes a life of its own that is entirely dependent on substance use. Due to effects of substance use that is felt throughout the body, which affect every natural process taking place within individuals who consumes them, interferes with the sleep wake cycle (Simola, Frau, Plumitallo & Morelli, 2013).

The most common side effect experienced by youth who use substances is insomnia. Substance use causes more independence in the body to the extent where one is withdrawing from the use, and it can cause more damage to the circadian rhythms, while other youth find their insomnia actually getting worse instead of being better once they are in recovery. Stimulants like cocaine will tend to disrupt the youth's sleeping patterns by preventing their bodies from calming down and falling asleep (The Ranch, 2012).

Oshodi, et al. (2010) argued that the limitless use of caffeine is associated with brain fatigue syndrome, which is a culture-bound syndrome among West African students. The brain fatigue syndrome frequently presents poor study adaptation, functional somatic complaints involving the head and neck region, and visual disturbances. Several reasons given for substance use among youths associated on the perceived benefits include enabling them to study, to do hard work, to get rid of shyness, and to forget about their struggle, for curiosity, for fun, and peer pressure. Substance use affects the brain, resulting in a major decline in its functions. It also affects students' attention and thus interest in the university and additional activities. This causes higher absenteeism and dropouts (Nkyi, 2014).

National Alliance on Mental Illness (NAMI, 2016) argued that the use of marijuana causes youths to feel "high," such as hunger and negative emotions like depressed mood. Generally, psychoactive drugs have an effect on the process involved in decision-making among students, impacts on their creative thinking, and influence the development of important life and social skills. Substance use interferes with individuals' attentiveness of their different potentials and thus interest in their career development (Louw, 2001). Cannabis may damage short-term memories, ability to comprehend, change capacity to manage time and reduce the ability to carry out certain assignments that require utmost concentration.

Deaths related to substance use are the most extreme outcomes of harm that may result from excessive substance use. Primarily substance overdose contributes to the overall number of deaths that are linked to substance use, and opioids (heroin and the non-medical use of prescription) are the main substance type implicated in these deaths (Oshodi, et al., 2010). Substance use may have an intensely negative impact on people's health, which may lead to premature death. This occurs in a case of overindulgence, and can also rigorously diminish the quality of life through disability (any short-term or long-term health loss) such

as from liver disease, or infection with HIV and hepatitis B and C because of sharing polluted needles and syringes (Saban & Flisher, 2010).

2.2.3. Depression and Substance use

Depression is a main public health problem worldwide, leading to significant morbidity, disability and significant socioeconomic losses (WHO, 2012). Depressive disorders involve large numbers of youths residing in urban and rural areas (Amin & Khan, 2009). Depression may result from biological, social, economic and cultural factors. In a study conducted by WHO (2008), depression was found to be the foremost reason of disability (50%) among youths. The ambivalent and avoidant attachment styles that exist between parents and children had a positive significant relationship with depression (Amani, Majzoobi & Fard, 2016). A depressive disorder that influences the functioning of youths reportedly develops from young age.

Depression is found to be the second most mental health problem with 11-32% of youth and 7-40% of anxiety disorders occurring among the youth population (O'Neil, Conner & Kendall, 2011). The causes of substance use are not identified. However, preceding data propose that risk factors may be identified relatively early in life, even prior to the commencement of use. This could also include factors such as familiar history of mood, alcohol, and drug use. A longitudinal research by Goodwin and Stein (2013) showed that affiliations with peers who are involved in deviant behaviour relate to continuance use of cannabis across the lifespan.

Studies on the effects of substance use in relation to depressive symptoms are evident in literature. Youth who use substances such as alcohol and tobacco have a higher level of association to depressive symptoms (Espada et al., 2011). The prevalence of depressive symptoms was found to be higher among tobacco, alcohol and cannabis users (Espada et al.,

2011). Similarly, it has been established that youths see the use of stimulants in a positive way because it can help them reduce pain and problems, heighten their mood, increase wakefulness and confidence. It can also enhance psychomotor and athletic activities (Linhardt, 2001; Ferrer, Marks, Midlarsky & Hutz-Midgett (2015). This has been further strengthened by arguments by Ajayi and Ekundayo (2010) that the reasons for substance use is to reduce pain, tension, and to overcome isolation and loneliness. In order to alter sleep or energise themselves, the majority of adolescents and youth begin to experiment with substances like tobacco and alcohol as well as other caffeinated tea like Nescafe.

The prevalence of alcohol use in the treatment of depression has been reported to be higher among adolescents and youth population (Saban et al., 2010). It is mostly used as a type of self-medication to come out of anxiety and depression (Mental Health Foundation, 2016). Cannabis is another substance that has been found to be common among youths with depressive symptoms (Copeland, Rooke & Swift, 2013). Depressive symptoms and a poor sense of well-being have also been shown to be related to the use of tobacco and illegal drugs among young people (Plüddemann *et al.*, 2010; Saban et al., 2010).

2.2.4. Anxiety and Substance use

Studies on anxiety-related behaviour are evident in literature. Earlier studies inspecting the connection between anxiety and substance use among youths have produced varying, and often vague, results. A cross-sectional study of youth found anxiety disorders to be completely related to the regular use of tobacco, but not to the use of alcohol or illegal drugs (Kandel et al., 1997). In a longitudinal study of youth, Brook et al. (1998) hold that substance use was not significantly related to anxiety. Anxiety is often characterised by avoidance of feared situations (Storch & McKay, 2013). Low attainment in education, high rate of work and social impairment has been linked with anxiety disorders among youths

(Grant et al., 2005; Ruscio et al., 2008). 52.8% of male youths participated in a community survey which examined gender differences in the co-occurrence of anxiety disorders and substance use. The relations between anxiety disorders and substance use varied according to the anxiety disorders, forms of substance use that were examined. Among male youths, social phobia (anxiety) was linked to cigarette use. Females had strong relationship between anxiety and substance use phobia (Wu et al., 2010).

Furthermore, previous studies have established correlation between depression, anxiety and drug use among Kenyan students (Ndegwa, Munene & Oladipo, 2017). Similarly, Yunusa, Bello, Idris and Haddad (2017) conducted a study on determinants of substance use among drivers, and found that among other things, stress and anxiety was an important factor that relates to substance use among the sampled population. These studies revealed that there is a connection between anxiety and substance use among the youth population. This may not exempt students in a South African university as well.

2.2.5. Stress and Substance use

Youths across the globe are exposed to numerous life challenges that may constitute stress to their daily survival and well-being. It has been reported that too much stress may result in a variety of mental and physical health (Mapfumo, 2012). Youths may experience difficulties in managing their daily lives due to the disrupted capacity resulting from stress (Chandra & Batada, 2006). Research has shown an association between the ability to cope with stress and mental health concerns like depression (Tompkins, Hockett, Abraibesh & Witt, 2011). Therefore, one of the ways by which youth attempt to cope with stress is resorting to substance use. Debnam, Milan, Mullen, Lacey and Bradshaw (2016) carried a study on links between stress and substance use among adolescents. They reported higher substance use among male students as a coping strategy for stress-related elements in their

school activities. In addition, Mohasoa (2010) opined that youths in South Africa opt for substances due to overwhelming challenges in their personal and family life as well as the society.

In another study conducted by Mudavanhu and Schenck (2014) to ascertain factors that are responsible for substance use in the youth population in the Western Cape, stress was found as a personal factor that significantly relates to substance use among the respondents. Similarly, a study among youth in another community in South African reported no association between high stress levels and alcohol use (Mphele, et al., 2013). Smoking rates in stressed youths are high, and the youth have higher complexity quitting relative to other smoking populations (Fu *et al.*, 2007). That is, smokers who initially resort to smoking as a coping strategy for stress found it difficult to quit afterwards. Atwoli *et al.* (2011) reported the majority (60.8%) of the sampled population among Kenyan youths that indulge in substances in order to relieve stress.

2.3. Summary of Literature Review

Four theories were reviewed in this study. The psychological theory of stress emphasises that individuals appraise a situation to be either stressful or anxiety-provoking and thereafter develop a method of coping with the situation. However, the cognitive theory of depression explained how various thoughts are generated through different antecedents. Therefore, when thoughts emanate from dysfunctional belief, depression is inevitable. The beliefs are rooted in distorted cognitions which serve as the basis for interpreting subsequent experiences.

The theory of planned behaviour, therefore predicts a connection between intentions (often based on cognitions) and behaviour. It suffices to state that when an individual who already formed a distorted cognition attempts to cope with depression, anxiety and stress, the

behavioural alternative may be substance use. There is empirical evidence that supports this claim. That is, individuals with depressive symptoms may consider substance use (Ajayi et al., 2010; Espada et al., 2011). The individuals with anxiety symptoms may also regard substance use (Wu et al, 2010; Ndegwa, et al., 2017) and those with stress symptoms may also rely on substance use (e.g Tompkins et al, 2011; Debnam et al, 2016). Hence, this study proposed that there would be a relationship between depression, anxiety, stress and substance use.

CHAPTER THREE

METHODOLOGY

Research methodology is a process by which researchers go about their work describing, explaining and predicting phenomena (Welman, Kruger & Mitchell, 2005). This chapter presents the research methodology, which consists of the following subsections: research approach, study design, sampling method, research instrument, data collection, data analysis and ethical principles.

3.1. Research Approach

The quantitative research approach was adopted in this study. Quantitative research uses numerical analysis. This is an enquiry approach useful for describing trends and explaining the relationship among variables (De Vos *et al.*, 2011). The aims of quantitative study were to quantify variables and to simplify findings obtained from a representative sample from the total population. In essence, this approach reduces data into numbers such that responses from the participants on depression, anxiety, stress and substance use were quantified. This approach was followed in order to subject the hypotheses that were formulated for the study to statistical testing.

3.2. Study Design

The correlation design was used in this study. Correlation study is designed to clarify the relationship between two aspects of a situation (De Vos *et al.*, 2011). The study established the relationship among depression, anxiety, stress and substance use.

3.3. Population of the Study

The study was conducted at North-West University (NWU), Mafikeng Campus, South Africa. The participants were undergraduate students in the year 2016 at the university within the age scope of 18 to 25 years. The undergraduate students were suitable for the study as they are mainly youths who have some degree of liberty to take decisions on handling numerous challenges at this stage of their psychosocial development. Furthermore, the study excludes postgraduate students on the assumption that they should have tried and developed various means of strategies to cope with life experiences that could lead to depression, anxiety, stress and substance use. Thus, undergraduate students in the five major faculties at NWU, Mafikeng Campus constitute the population of the study.

3.4. Sampling Procedure

In determining the representative sample of this study, the researcher employed Krejcie and Morgan's (1970) formula, considering the largeness of the total population of students at Mafikeng Campus (11,616). The formula has also been supported by the International Program for Development Evaluation Training (IPDET, 2007) for sample size determination of a definite population. Therefore, the sample size of this study was determined as follows:

$$S = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

Where:

S= required sample size;

x^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level and for a 95% confidence level, $x^2 = 3.841$;

N = the population size (11616 students)

P = the population proportion; normally assumed to be 0.5 since this would provide maximum sample size; and

d = the degree of accuracy expressed as a proportion of the error that can be tolerated in the sample (0.5).

$$S = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

$$S = \frac{3.841 \times 11616 \times 0.5(1-0.5)}{0.5(11616-1) + 3.841 \times 0.5(1-0.5)}$$

$$= \frac{44617.1 \times 0.5(0.5)}{5807.5 + 1920.5(0.5)}$$

$$= \frac{22308.55(0.5)}{7728(0.5)}$$

$$= 11154.275 \div 3864$$

$$= 2.89$$

$$\therefore 2.89 \times 11616 \div 100$$

$$S = 336$$

In all a total figure of 336 respondents participated in the study. The stratified random sampling technique was employed to select the participants of the study. The sampled participants were derived along the five major faculties at Mafikeng Campus. These are Agriculture, Education, Commerce & Administration, Human and Social Sciences, Law and Science & Technology. Specifically, sixty-seven participants were selected from each faculty. Thereafter, the purposive sampling technique was utilised to select participants at lecture venues.

3.5. Research Instrument

The research instrument of this study consisted of three sections. These include the Biographical Information (Section A), Drug Abuse Screening Test (Section B) and Depression, Anxiety and Stress Scale (Section C).

3.5.1. Biographical Information

This section sought information on respondents' demographic variables such as sex, age, level of study, race and home language.

3.5.2. The Drug Abuse Screening Test (DAST-10)

DAST-10 is a short screening tool used to measure substance use in the past 12 months (Skinner & Harvey, 2001). It consists of ten items, examining substance use and has been condensed from the original version with 28-item (DAST-28) that was developed by Skinner (1982). The short responses format consists of Yes (1) and No (0). Score 1 point for each question answered "Yes," except for item 3 for which a "No" received 1 point. The DAST-10 has excellent internal consistency reliability (alpha) at 0.95 for the total sample and 0.86 for the drug-use sample. The DAST-10 correlates very highly ($r = 0.98$) with the longer DAST-20, having an internal consistency reliability for a brief scale (0.92). DAST 10 has been reported to be appropriate for South African samples (Peltzer, Simbayi, Kalichman, Jooste, Cloete & Mbelle, 2017). A Cronbach alpha reliability coefficient of 0.74 was reported for this study.

3.5.3. Depression, Anxiety and Stress Scale (DASS-21)

The second instrument, DASS-21 (Lovibond & Lovibond, 1995) is a small version of DASS-21, which is a self-report 4-point Likert response format scale comprising of three subscales: Depression (DASS-D), Anxiety (DASS-A) and Stress (DASS-S). Each of the three

subscales contains 7 items. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. The DASS-21 measures each of the three mental health conditions over the past week, through seven items. The short response options reflect severity of experience in each of the subscales and scored from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). The alpha reliability coefficients for the DASS-21 subscales was examined in clinical and nonclinical samples and reported as .94 for DASS-D, .87 for DASS-A, and .91 for DASS-S (Anthony, *et al.*, 1998). The scale has also been to be reliable among high school students in South Africa (Masureik, Roman, Roman, & Toefy, 2014). For this study, a Cronbach reliability coefficient of .93 was established.

3.6. Data Collection

The ethical clearance to conduct the research was obtained from the Human Science Research Ethics Committee. The researcher, in conjunction with three other research assistants, participated in the administration of the questionnaires during data gathering in order to clarify the purpose of the study as well as to provide answers to questions that were raised by the participants. Data were collected at participants' respective faculties after they had been assured of anonymity of their responses. Data collection was carried out during general courses across all levels in each faculty. In other words, students were required to fill the questionnaire at the end of their lectures. Out of the 370 copies of questionnaires that were administered, 336 copies were identified for data analysis.

3.7. Data Analysis

IBM Statistical Package for the Social Science (IBMSPSS-version 25) was adopted to analyse the data for the study. IBMSPSS is a computerised program used in social sciences to perform data entries, analysis, create tables and graphs (Field, 2009). Then a Pearson Product Moment Correlation analysis was employed to investigate the relationship between

depression, anxiety, stress and substance use among youth. Specifically, the three hypotheses for the study were subject to Pearson Product Moment Correlation analysis.

3.8. Ethical Consideration

3.8.1. Informed Consent

The participants were informed that by signing a consent form, they agree to participate in the research titled the relationship between depression, anxiety, stress and substance use among youth.

3.8.2. Privacy, Anonymity and Confidentiality

The researcher respected the participants' right to privacy and assured them of the anonymous treatment of their responses. That is, only the respondent that responded to the items knew information on each questionnaire. The participants were also assured that the information given would be kept safe and there would be no writing of names in the study and on the questionnaires.

3.8.3. Voluntary Participation

The participants were made aware that their partaking in the study is voluntary, and that should they feel that they were no longer interested in participating in the study, they were free to withdraw at any time.

3.8.4. Avoidance of Harm

Every participant in the study was assured of safety. The questions asked were not harmful to participants and they were asked to indicate if they were not comfortable with any portion of the questions.

3.8.5. Right to Withdraw

The participants were highlighted that they have the right to end participation at their own will. They had the right to withdraw from the study at any point and it was not binding for them to give reasons for their withdrawal.

3.8.6. Publication of Research Results

The results will be in print without bias and will be used for academic purposes only.

CHAPTER FOUR

RESULTS

Introduction

This study investigated the relationship between depression, anxiety, stress and substance use among youths at North-West University Mafikeng Campus. The study developed insights into the dynamic relationship between depression, anxiety, stress and substance use by gathering responses from a sample of undergraduate students at the university. To achieve the aim and objectives of the study, a survey questionnaire containing the DASS-21 and DAST-10 instruments was distributed to 370 undergraduate students, and 336 usable questionnaires were identified and used for data analysis. The composite reliability of the questionnaire was analysed on SPSS and, as displayed in Table 1, yielded a Cronbach's alpha coefficient value of 0.92. Survey questionnaires or research instruments that attain an alpha coefficient value of 0.7 are described as having acceptable or sufficient internal reliability (Pallant, 2005; Bryman & Bell, 2007).

Table 1: Reliability Statistics of survey questionnaire

Cronbach's Alpha	Number of Items
.92	31

4.1. Descriptive Statistics

The socio-demographic distributions of participants is presented in Table 2.

Table 2: Descriptive statistics of respondents

Distributions	Respondents (N=336)	Percentage (%)
Gender: Female	211	62.8%
Male	125	37.2%
Race: Black	315	93.8%
Coloured	17	5.1%
White	4	1.1%
Level: 1	107	31.8%
2	97	28.9%
3	74	22.0%
4	58	17.3%
Age: 18-21	170	50.6%
22-25	49.9	49.4%

The descriptive statistics, as displayed in Table 2, summarises the demographic variables of the study respondents. Table 2 shows that of the 336 respondents, there were more females represented in the study at 62.8% (211 respondents) while 37.2% represented males. This is not far from the general enrolment picture at the university. The majority of the study respondents (93.8%; 315 respondents) were of Black race. The implication of this is that the findings from this study could well represent South African students. The location of the university attracts more blacks than other races in South Africa. Other groups were well represented in this study. Specifically, only 6.2% (21 respondents) represented other races in the study.

Levels	<u>Depression</u>			<u>Anxiety</u>			<u>Stress</u>		
	N	M	SD	N	M	SD	N	M	SD
Low	220	1.33	.576	215	1.29	.564	215	1.35	.608
Moderate	75	1.43	.719	92	1.52	.703	75	1.36	.650
Severe	41	1.73	.807	29	1.86	.833	46	1.69	.785

Statistical presentations in Table 4 showed that there is no significant mean difference between the independent variables and dependent variable in the study. This is evident in the means scores of most of the participants that indicated low substance use for depression ($X=1.33$; $SD=.576$), anxiety ($X=1.29$; $SD=.564$) and stress ($X=1.35$; $SD=.608$). That is, many of the respondents reported that they might not even consider substance use when they are depressed, anxious or stressed. The study also revealed a moderate substance use when depressed ($X=1.43$; $SD=.719$), anxious ($X=1.52$; $X=1.52$; $SD=.703$) and stressed ($X=1.52$; $X=1.36$; $SD=.650$). This suggested that a moderate number of respondents might indulge in substance use in order to come out of depression, anxiety and stress.

4.2. Hypothesis Testing

Three hypotheses that were postulated for this study were subjected to correlational analysis using *Pearson's Product Moment Correlation Coefficient* (PPMC) or *Pearson's "r"*. PPMC is typically used to establish the statistical relationships between two or more variables (Pallant, 2005; Peck et al., 2012). Pallant (2005) describes a statistical relationship as existing between two or more variables if the value of *Pearson's* coefficient symbolised by '*r*' is +1.0 (Perfect positive correlation) or -1.0 (Perfect negative correlation). Furthermore, if '*r*' values is 0, it indicates that there is no relationship between the values. A strong relationship between variables is said to exist if the generated coefficient value ranges

from .50 to 1.0 or -.50 to -1.0; medium relationship exists if the coefficient values range from .30 to .49 or -.30 to -.49; and weak relationships exist when values range from .10 to .29 or $r = -.10$ to $-.29$ (Pallant, 2005; Peck et al., 2012). Table 3 displays a statistical relationship between the study's variables, substance use, anxiety, depression and stress in a correlation matrix.

Table 5: Correlation matrix of Substance use, Depression, Anxiety and Stress (n = 336)

Variables	M	SD	1	2	3	4	5
1. 1. Age	1.63	.484	1				
2. Depression	11.55	4.18	-.15**	1			
3. Anxiety	11.80	4.40	-.10	.732**	1		
4. Stress	11.82	4.47	-.06	.727**	.712**	1	
5. Substance use	12.17	2.09	-.04	.232**	.347**	.217**	1

Note: Correlation is significantly the 0.01 level (2-tailed)

4.2.1. Hypothesis One: states that there will be a significant relationship between depression and substance use.

Table 7: Pearson Coefficient of Correlation between Depression and Substance use

Correlation	r	r ²	df	$\bar{x}$	SD	P
Depression and Substance use	.232**	0.054	333	11.55	4.175	<.05

The results from Table 6 revealed that there exists a significant positive relationship between depression and substance use($r = .232$, $p < .05$). Thus, the hypothesis was accepted because

there is a relationship between depression and substance use. Although a weak positive correlation exists between the variables, it suggests that when undergraduates have symptoms of depression, they are likely to consider substance use as an option.

4.2.2. Hypothesis Two: the hypothesis states that there will be a relationship between anxiety and substance use.

Table 7: Pearson Coefficient of Correlation between Anxiety and Substance use

Correlation	r	r ²	df	$\bar{x}$	SD	P
Anxiety and Substance use	.347**	0.120	333	11.80	3.888	<.05

The results from Table 7 revealed the existence of a significant positive relationship between anxiety and substance use ($r = .347$, $p < .05$). Thus, the hypothesis that was postulated for this study is accepted. This implies that the participants have the possibility of indulging in substance use whenever they are anxious. That is, as the level of anxiety increases, substance use will also increase.

4.2.3. Hypothesis Three: states that there will be a significant relationship between stress and substance use.

Table 8: Pearson Coefficient of Correlation between Stress and Substance use

Correlation	r	df	r ²	$\bar{x}$	SD	P
Depression and Substance use	.217**	333	.047	11.82	4.229	<.05

The PPMC results in Table 8 shows that a significantly positive but weak relationship exists between stress and substance use ($r = .217, p < .05$). Therefore, the alternate hypothesis was accepted, since the results established a positive relationship between the two variables. The respondents reported that when they are stressed, they might likely indulge in substance use. In other words, the more stressed they become, the higher the possibility of indulging in substance use.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1. Discussion

The aim of the study was to investigate the relationship between depressions, anxiety, stress and substance use among the youths at North-West University, Mafikeng Campus. In order to achieve this goal, there hypotheses were postulated for the study. Data generated through the administration of questionnaires were subjected to a test of relationship, which yielded a significant positive association between the variables in the study. The findings are discussed as follows.

5.1.1. Depression and Substance use

The findings from the first hypothesis revealed that there is a positively weak correlation between depression and substance use. That is, substance use will likely increase with the level of depression among youths on Mafikeng Campus. This finding supports previous studies that established a significant positive association between depression and substance use (Plüddemann *et al.*, 2010; Saban *et al.*, 2010; Espada *et al.*, 2011). Specifically, these researchers found that depression had a high association with alcohol, tobacco and cigarette, but is not associated with marijuana. Similarly, Copeland, *et al.* (2013) reported that the use of cannabis and other related substances are higher among youths with depressive symptoms. Other researchers such as Louw (2001), Oshodi, *et al.* (2010), Chesang (2013) and Nkyi (2014) also reported that depression could potentially make youths to consider substance use.

The plausible explanation for the agreement between this finding and previous studies is that youths across the globe face closely related challenges that could possibly lead to

depression. Therefore, they attempt to explore various options to come out of their depressive stage by eventually indulging in substance use. However, the weak relationship that exists could be because of the low level of substance use that was reported by the participants in the current study.

5.1.2. Anxiety and Substance use

The findings from the second hypothesis, which says there will be a significant relationship between depression and substance use, revealed that a significantly medium positive correlation exists between anxiety and substance use.

The finding is in congruent with several previous studies. For instance, Ndegwa, et al. (2017) established a positive relationship between anxiety and drug use among Kenyan students. Similarly, Yunusa, et al. (2017) conducted a study on the determinants of substance use among drivers, and found that among other things, stress and anxiety were important factors that relate to substance use among the sampled population. These studies revealed that there is a connection between anxiety and substance use among youth population. In addition, Kandel *et al.* (1997), Wu et al., (2010) and Cranford *et al.* (2009) posited that the correlation that exists between anxiety disorders and substance use varied according to anxiety disorders, gender and the substance used. Tobacco was found to have relations with anxiety between both genders and no relations with alcohol and illegal drugs.

The theory of planned behaviour further buttresses the direction of the findings in that when youth evaluate the multiple effects of anxiety on cognitive functioning, they may possibly indulge in substance use as a way of temporarily reducing their anxiety. Youths the world over, as evidenced in the reported findings of the empirical reviews of literature, indulge in substance use to treat anxiety. They believe that such substances will make the object of anxiety loose its potential threat.

5.1.3. Stress and Substance use

In the third hypothesis, the researcher postulated that there would be a significant relationship between stress and substance use. This hypothesis was accepted because the study established a significantly positive correlation between stress and substance use.

Previous studies have established that there is a correlation between stress and substance use. For example, Debnam, et al. (2016) conducted a study on the relationship between stress and substance use among adolescents, and reported higher substance use among male students as a coping strategy for stress-related elements in their school activities. In addition, Mohasoa (2010) opined that youths in South Africa opt for substances due to overwhelming challenges in their personal and family lives as well as the society. In another study conducted by Mudavanhu, et al. (2014) to ascertain factors that are responsible for substance use among youth in the Western Cape Province, stress was found as a personal factor that significantly relates to substance use among the respondents. In the same token, a study among youth in another community in South African reported no relationship between high stress levels and alcohol use (Mphele, et al, 2013).

The present study corroborates the findings of previous studies by reporting a positive correlation between stress and substance use. Daily hassles and academic challenges may be a plausible reason why youths would want to indulge in substance use. Thus, as stress increases, substance use may likely increase as well.

5.2. Conclusion

The study following conclusions are made based on the findings of the study:

Depression may have positive relationship with the consumption of various substances among undergraduates at North-West University.

Secondly, anxiety may be responsible for substance use among the sampled population. This is because anxiety was found to positively relate to substance use in the study.

Thirdly, stressful experiences may explain why youths indulge in substance use in order to cope with their daily hassles on campus.

5.3. Recommendations

Considering the quantitative approach adopted in the study, further research is required to explore the qualitative paradigm on the variables of depression, anxiety, stress and substance use. This is believed to validate the findings and to authenticate their applicability.

In addition, studies that will investigate the moderating effects of personal variables like personality, self-esteem, and peer influence on the existing relationships are encouraged.

Much more important is the fact that students should be encouraged during orientation programmes, to always make use of counselling and psychosocial facilities available on campus whenever they are depressed or stressed. Furthermore, these psychosocial facilities should be strengthened and be made attractive to encourage patronage from students experiencing one form of anxiety or the other. It is pertinent to emphasise that the counselling unit needs to be de-stigmatised to make it more fascinating for students to make consultations.

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Appendix A

SECTION A: BIOGRAPHICAL INFORMATION

1. SEX.....
2. AGE.....
3. LEVEL OF STUDY.....
4. RACE.....
5. HOME LANGUAGE.....

SECTION B:

Select from the list of questions about your potential involvement in drugs, excluding alcohol and tobacco, during the past 12 months.

These questions refer to the past 12 months	No	Yes
1. Have you used drugs other than those required for medical reasons?	0	1
2. Do you abuse more than one drug at a time?	0	1
3. Are you always able to stop using drugs when you want to? (If never use drugs, answer "Yes.")	0	1
4. Have you had "blackouts" or "flashbacks" as a result of drug use?	0	1
5. Do you ever feel bad or guilty about your drug use? If never use drugs, choose "No."	0	1
6. Did your spouse (or parents) ever complain about your involvement in drugs?	0	1
7. Have you neglected your family because of your use of drugs?	0	1
8. Have you engaged in illegal activities in order to obtain drugs?	0	1
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	0	1
10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)?	0	1

SECTION C

DASS 21 (Depression, Anxiety & Stress Scale)

Please read each statement and circle the number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all - NEVER

1 Applied to me to some degree, or some of the time - SOMETIMES

2 Applied to me to a considerable degree, or a good part of time - OFTEN

3 Applied to me very much, or most of the time - ALMOST ALWAYS

Questions	N	S	O	AA	D	A	S
1. I found it hard to wind down	0	1	2	3			S
2. I was aware of the dryness of my mouth	0	1	2	3		A	
3. I did not seem to experience any positive feeling at all	0	1	2	3	D		
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3		A	
5. I found it difficult to work up the initiative to do things	0	1	2	3	D		
6. I tended to overreact to situations	0	1	2	3			S
7. I experienced trembling (e.g. in the hands)	0	1	2	3		A	
8. I felt that I was using a lot of nervous energy	0	1	2	3			S
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3		A	
10. I felt that I had nothing to look forward to	0	1	2	3	D		
11. I found myself getting agitated	0	1	2	3			S
12. I found it difficult to relax	0	1	2	3			S
13. I felt down-hearted and blue	0	1	2	3	D		
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			S
15. I felt I was close to panic	0	1	2	3		A	
16. I was unable to become enthusiastic about anything	0	1	2	3	D		
17. I felt I was not worth much as a person	0	1	2	3	D		

18. I felt that I was rather touchy	0	1	2	3			S
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3		A	
20. I felt scared without any good reason	0	1	2	3		A	
21. I felt that life was meaningless	0	1	2	3	D		
TOTAL							

Appendix B

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	125	37.2	37.2	37.2
	Female	211	62.8	62.8	100.0
	Total	336	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-21	170	50.6	50.6	50.6
	22 - 25	166	49.4	49.4	100.0
	Total	336	100.0	100.0	

Academic Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Level 1	107	31.8	31.8	31.8
	Level 2	97	28.9	28.9	60.7
	Level 3	74	22.0	22.0	82.7
	Level 4	58	17.3	17.3	100.0
	Total	336	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	315	93.8	93.8	93.8
	Coloured	17	5.1	5.1	98.8
	White	4	1.2	1.2	100.0
	Total	336	100.0	100.0	

		Language			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	African	8	2.4	2.4	2.4
	English	7	2.1	2.1	4.5
	Ndebele	5	1.5	1.5	6.0
	Sepedi	11	3.3	3.3	9.2
	Sesotho	16	4.8	4.8	14.0
	Setswana	200	59.5	59.5	73.5
	Siswati	16	4.8	4.8	78.3
	Sotro	6	1.8	1.8	80.1
	Xhosa	27	8.0	8.0	88.1
	Xitsonga	4	1.2	1.2	89.3
	Venda	2	.6	.6	89.9
	Zulu	34	10.1	10.1	100.0
	Total	336	100.0	100.0	

Reliability Statistics

Cronbach's Alpha	N of Items
.927	21

Reliability Statistics

Cronbach's Alpha	N of Items
.627	10

		DRUse			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	Low	232	69.0	69.0	69.0
	Moderate	73	21.7	21.7	90.8
	Severe	31	9.2	9.2	100.0
	Total	336	100.0	100.0	

Correlations

		Sex	Age	Academic Level	DRUse	Anxiety	Depression	Stress
Sex	Pearson Correlation	1	-.151**	-.023	-.062	-.057	-.007	.008
	Sig. (2-tailed)		.006	.668	.256	.298	.897	.880
	N	336	336	336	336	336	336	336
Age	Pearson Correlation	-.151**	1	.039	.037	-.100	-.153**	-.057
	Sig. (2-tailed)	.006		.482	.502	.068	.005	.299
	N	336	336	336	336	336	336	336
Academic Level	Pearson Correlation	-.023	.039	1	-.171**	-.016	-.038	-.014
	Sig. (2-tailed)	.668	.482		.002	.771	.492	.801
	N	336	336	336	336	336	336	336
DRUse	Pearson Correlation	-.062	.037	-.171**	1	.347**	.232**	.217**
	Sig. (2-tailed)	.256	.502	.002		.000	.000	.000
	N	336	336	336	336	336	336	336
Anxiety	Pearson Correlation	-.057	-.100	-.016	.347**	1	.732**	.712**
	Sig. (2-tailed)	.298	.068	.771	.000		.000	.000
	N	336	336	336	336	336	336	336
Depression	Pearson Correlation	-.007	-.153**	-.038	.232**	.732**	1	.727**
	Sig. (2-tailed)	.897	.005	.492	.000	.000		.000
	N	336	336	336	336	336	336	336
Stress	Pearson Correlation	.008	-.057	-.014	.217**	.712**	.727**	1
	Sig. (2-tailed)	.880	.299	.801	.000	.000	.000	
	N	336	336	336	336	336	336	336

** . Correlation is significant at the 0.01 level (2-tailed).



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ETHICS APPROVAL CERTIFICATE OF PROJECT

Based on approval by the Human Resource Research Ethics Committee (HREC) on 03/03/2017, the North-West University Institutional Research Ethics Regulatory Committee (NWU-IRERC) hereby **approves** your project as indicated below. This implies that the NWU-IRERC grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the project may be initiated, using the ethics number below.

Project title: The relationship between depression, anxiety stress and substance abuse among youth at North West University Mafikeng Campus.																												
Project Leader/Supervisor:	Dr C Oduaran																											
Student:	MC Malebana																											
Ethics number:	<table border="1"> <tr> <td>N</td><td>W</td><td>U</td><td>-</td><td>0</td><td>3</td><td>3</td><td>9</td><td>-</td><td>1</td><td>7</td><td>-</td><td>A</td><td>9</td> </tr> <tr> <td colspan="3">Institution</td> <td colspan="4">Project Number</td> <td colspan="2">Year</td> <td colspan="4">Status</td> </tr> </table> Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation	N	W	U	-	0	3	3	9	-	1	7	-	A	9	Institution			Project Number				Year		Status			
N	W	U	-	0	3	3	9	-	1	7	-	A	9															
Institution			Project Number				Year		Status																			
Application Type: Master's																												
Commencement date: 2017-02-13	Expiry date: 2020-02-13																											
Risk:	N/A																											

Special conditions of the approval (if applicable):

- Translation of the informed consent document to the languages applicable to the study participants should be submitted to the HREC (if applicable).
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the HREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The project leader (principle investigator) must report in the prescribed format to the NWU-IRERC via HREC:
 - annually (or as otherwise requested) on the progress of the project, and upon completion of the project
 - without any delay in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
 - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the HREC. Would there be deviation from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the NWU-IRERC via HREC and new approval received before or on the expiry date.
- In the interest of ethical responsibility the NWU-IRERC and HREC retains the right to:
 - request access to any information or data at any time during the course or after completion of the project;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.
 - withdraw or postpone approval if:
 - any unethical principles or practices of the project are revealed or suspected,
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- HREC can be contacted for further information via Estie.Emtch@nwu.ac.za or 018 289 2873.

The IRERC would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the IRERC or HREC for any further enquiries or requests for assistance.

Yours sincerely

Prof LA Du Plessis
Digitally signed by
Prof LA Du Plessis
Date: 2017.03.22
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EDITING AND PROOFREADING OF MINI-DISSERTATION

This serves as proof that the mini-dissertation entitled 'The relationship between depression, anxiety, stress and substance use among youth at North-West University Mafikeng Campus, South Africa' by Malebana Mmakwena Christabel Student No. 27556212 has been edited and proofread, and that unless further tampered with, I am content that all grammatical errors have been eliminated.

Yours faithfully

A handwritten signature in black ink, enclosed within a hand-drawn oval. The signature appears to be 'SJ Kubayi'.

Dr SJ Kubayi (DLitt et Phil)

Senior Lecturer (Department of Translation Studies and Linguistics – UL)