THE RELATIONSHIP BETWEEN LEVELS OF DEPRESSION AND SUBSTANCE USE AMONG STUDENTS OF TERTIARY INSTITUTIONS IN TAITA TAVETA COUNTY, KENYA

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A Thesis submitted in partial fulfilment of the requirement for the award of the Degree of Master of Arts in Counseling Psychology in the Counseling Psychology Department, School of Humanities and Social Sciences of Africa Nazarene University

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DECLARATION

I declare that this document and the research that it describes are my original work and they have not been presented in any other university for academic work.

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Signed: Date: 17.09.2020

This research was conducted under our supervision and is submitted with our approval as university supervisors.

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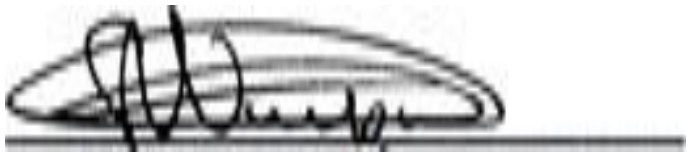
Dr. SUSAN GITAU



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DEDICATION

I dedicate this study to my wife Patience, and my children Brian, Purity, Benedict and Peace.

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First, I thank the Almighty God for His Grace, Providence and Inspiration during this research. I thank my wife Patience for her patience, sacrifice, understanding and encouragement.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Depression and substance use are common co-occurring conditions. Sometimes depression has been found to be the precursor of substance use. The study focused on the relationship between levels of depression and substance use among students of tertiary institutions in Taita Taveta County, Kenya. Wendy Treynor's Depression Theory was used to explain the variables. The study used a correlational research design because of two variables and their statistical relationship. The study was carried out in selected four tertiary institutions namely, C.I.T, S.M.T.C – Bura, K.M.T.C – Voi and T.I.T, all in Taita Taveta County (Kenya). CIT was chosen because it is the only institute of technology in the county, SMTC was selected because it is the only teachers' college in the county and also a private college, managed by the Catholic Church. KMTC is the only other medical college in the county, and TIT is the only private institute of technology in the county, owned by an individual businessman. Each of the institutions has its uniqueness in terms of type of management, the professional training inclination, the students admitted and geographical location within the county. The study used a sample of 281 students from the selected institutions. Data was collected using questionnaires with a BDI depression standardized tool and ASSIST substance use standardized tool. Key Informant Interviews questionnaires for Principals, Deans of Students and tutors in charge of counseling programs were also used for staff. The captured data was analyzed using the Statistical Package of Social Sciences (SPSS version 25) and the R-Studio software. From the results, logistic regression revealed that depression is a statistically significant predictor of substance use among students in tertiary institutions ($z = 4.797$, $p = 0.027 < 0.05$). T-test results indicated that depression influences the usage of tobacco products ($t = 5.089$, $p = .001$); alcoholic beverages ($t = 5.477$, $p < 0.000$); cannabis ($t = 7.440$, $p < 0.001$); cocaine ($t = 3.201$, $p < 0.000$); inhalants ($t = 2.997$, $p = .003$); and hallucinogens ($t = 1.600$, $p = 0.49$). Further, logistic regression revealed that the relationship between depression and substance abuse is influenced by gender ($z = -1.599$, $p = 0.011$), age ($z = -1.285$), and marital status ($z = -0.585$, $p = 0.049$).Chi-square was used to test the null hypothesis led to the alternative hypothesis indicating a statistical relationship between depression and substance use in the respondents, using BDI and ASSIST tools. Data and results analysis showed there is positive and proportional statistical relationship between depression and substance use, the higher the depression level the more the substance use. It was recommended that tertiary institutions should have more mental health professionals to be involved in students' welfare management in tertiary institutions. There is need to improve institutional capacities in terms of counseling rooms and competent staff to run effective mental health and psycho-social support services to students in tertiary institutions. Further studies should be done in the areas of the relationship between depression and other maladaptive behaviors amongst students of post-secondary education.

DEFINITION OF TERMS

Depression level: state of depression as determined using Beck's Depression Inventory (Beck, Steer, & Garbin, 1988) . In this study, this means the level of depression among students of tertiary institutions.

Depression: complex mind and body disorder characterized by persistent feelings of sadness and worthlessness and a lack of desire to engage in formerly pleasurable activities and which interferes with everyday functioning (Segal & Teasdale, 2018). In this study, this is the level to which the depression symptoms highlighted exhibit themselves among students of tertiary institutions.

Drugs: substances which cause intoxication when taken into the human body (Farhat, Simons-Morton, & Luk, 2011). In this study, this means substances such as nicotine (cigarettes and other tobacco products), alcohol, cannabis, opiates and psycho-stimulants among others.

Substance abuse: pattern of harmful use of any substance for mood-altering purposes, in methods and amounts that cause harm to the consumer (Cheloti & Gathumbi, 2016). In this study, substance abuse means the harmful use of nicotine, alcohol, cannabis, opiates and psycho-stimulants among others.

Substance use: This is the use of a legal or illegal drug for intoxication or change body functioning and chemistry (Cheloti & Gathumbi, 2016). In this study, this is the use of drugs such as alcohol, marijuana and nicotine among others for intoxication.

Tertiary Institution: these are middle level colleges or training institutions which offer certificates and diploma qualifications but do not offer degrees (Pescosolido, et al., 2010). In this study, this are the various colleges and training institutions that offer an array of non-degree qualifications in the Kenya.

ABBREVIATIONS AND ACRONYMS

ANU	Africa Nazarene University
ASSIST	Alcohol, Smoking and Substance Involvement Screening Test
BDI	Beck's Depression Inventory
CIT	Coast Institute of Technology
KII	Key Informant Interview
KMTC	Kenya Medical Training College
MDD	Major Depressive Disorder
NACADA	National Authority for the Campaign against Drug and Alcohol Abuse
NACOSTI	National Commission for Science, Technology and Innovation
SMTTC	St Mary's Teachers Training College - Bura
SPSS	Statistical Package for Social Sciences
SUD	Substance Use Disorder
TIT	Tsavo Institute of Technology
TTVTC	Taveta Technical and Vocational Training College
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.1 Introduction

The chapter has sections on the background of the study, statement of the problem, purpose of the study, objectives, hypotheses, and significance of the study, scope of the study, delimitations of the study, limitations of the study, assumptions of the study, theoretical framework, and the conceptual framework.

1.2 Background

The purpose of the study was to examine the relationship between levels of depression and substance use in students of tertiary institutions in Taita Taveta County, Kenya. Depression level an independent variable (a causative factor) in substance use, a dependent variable (which is the resultant factor). The study had the hypothesis that depression leads students in tertiary institutions to engage in substance use. The intervening variables (mitigating factors) of type of institution, residence, marital status, age, gender, and course acted as socio-demographic elements. The other mitigating factors are the institutional capacities particularly in availability of counseling rooms, counseling programs and qualified counseling professionals. The levels of depression were determined by the scores in Beck's Depression Inventory (BDI) (Beck, Steer, & Garbin, 1988). The prevalence of substance abuse was determined using modified Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). These tools also brought out the prevalence of depression and substance abuse in the target population.

Depression, otherwise known as Depressive Disorder, is characterized by persistent feelings of sadness and worthlessness and a lack of desire to engage in

formerly pleasurable activities (Segal & Teasdale, 2018). It is a complicated mental health condition that impairs proper psychological, emotional and physical functioning of the affected person. Substance use disorders are identified with continued pathological use of a psychoactive substances which result in adverse physiological, behavioral and social consequences. The two disorders co-exist most of the time, with depression being the most common and which occurs frequently beginning during adolescence (Hankin, 2006).

A study conducted by Malone (2013) in the University of Nebraska, found that there was a large number of American adolescents who were suffering depression which jeopardized their well-being. After controlling for several demographic variables and previous depressive symptoms a positive relationship between victimization and adolescent depressive symptoms was established. In Canada, another study on comorbidity of Major Depression with Substance use Disorders it was concluded that Substance Use Disorders co-occur with a high frequency in cases of Major Depressive Disorder. It was recommended that clinicians and mental health services should consider routine substance use disorder assessments in depression patients. Clinical implications are that SUDs are more common in persons with current and lifetime MDD than in persons with no history of MDD.

Depression increases the likelihood of adolescents falling in to suicidal attempts and substance use (Grant, 2019). Adolescent depression may continue to affect them negatively in terms of menta and physical health (Gerhard & Robert, 2014). This agrees with Wendy Treynor's Theory on depression as far as various ways of coping with the psychological pain and self-rejection by engaging in substance use to feel accepted and free from the pain or discomfort.

High prevalence of depression and substance use in Africa has been documented in various surveys and research studies. In Nigeria, a study done amongst secondary school students showed that there is a significant relationship between depression and drug use (Njoku & Obogo, 2017). This researcher saw the gap and filled it by trying to investigate if the same applies to students of tertiary institutions in Kenya.

In Kenya, a recent research indicated that 84% of youth aged 16 – 24 years were involved in substance use (Othieno, Okoth, Peltzer, Pengpid, & Malla, 2014). This is the age bracket that the researcher target and confirmed high incidence of both depression and substance use. This study found violence, assault and self-harm as some of the behaviors which were indicative of depression. There were also cases of binge drinking, addiction to substance use and self-medication in this study. This echoes what the researcher found in this study. A study carried out by UNESCO in Lamu County, Kenya revealed that males predominantly abuse drugs as opposed to females, by age and groups and in learning institutions (UNESCO, 2017). A survey on drug abuse among the youth aged 10 and 24 years in Kenya found that majority of them started abusing drugs in secondary schools, colleges and universities. It was recommended that the school population is the best place for early detection, prevention and management of drug abuse (Cheloti & Gathumbi, 2016). This has a bearing to what the researcher found in this study, particularly the age bracket that is most vulnerable to substance abuse in tertiary colleges. The gap that the researcher addressed was the attention of drug abuse in tertiary institutions and the underlying reason for the high number of youths in learning institutions falling in to substance use and abuse.

The youths in learning institutions have a high propensity for depression because of the various challenges facing them, namely academics, social life, family background and issues to do with their physical, emotional and psychological

development stage in which they are. The commonly available escape route has easily been substance abuse. The researcher set out to address depression and substance abuse and establish the relationship between the two. He also established the prevalence of both depression and substance use by using the standardized tools of Beck's Depression Index (BDI) and Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

The NACADA in Kenya has been championing the fight against substance use in Kenya. It has carried a lot of research in schools and universities but few studies have been done on tertiary institutions. The researcher was interested in this bracket of our learners and has found very interesting findings as shall be looked into in chapter four. Again, there are few studies done on schools, colleges and universities in Coast Region yet the Coastal area remains a hot spot for drugs in Kenya (NACADA Report, 2014). Most of the studies done have been showing substance use as the cause of depression. Not many have been keen to investigate if the opposite is true. The researcher confirmed that depression can be and is the cause of substance use. This was a gap that this study succeeded to address as well. The questionnaires to staff and students worked to bring out the depression and substance use prevalence, usage of substances to address the effect of depression, and the comorbid relationship of the two disorders.

1.3 Statement of the Problem

Depression and substance use can occur concurrently thus causing comorbidity (the presence of one or more additional conditions co-occurring with a primary condition), common in tertiary institutions in Kenya. Depending on the level of Depression (as measured by a standardized tool known as Beck's Depression Inventory), the life of any person suffering from depression can be miserable and

painful. This may render the patient psychologically and socially unhealthy. Depression and substance use can occur concurrently thus causing comorbidity (the presence of one or more additional conditions co-occurring with a primary condition), common in tertiary institutions in Kenya. Depending on the level of Depression (as measured by a standardized tool known as Beck's Depression Inventory), the life of any person suffering from depression can be miserable and painful. This may render the patient psychologically and socially unhealthy. Substance Use Disorder is a disease that affects a person's brain and leads to an inability to control the use of a legal or illegal drug or medication, resulting in unhealthy and antisocial behavior at worst. A combination of both can be quite debilitating. The researcher wanted to confirm whether the two disorders are common in the target tertiary institutions. The data indicates presence of the two as will be shared in later chapters of this study.

There are many cases of students in Kenyan tertiary colleges going on strikes, drinking sprees, and engaging in casual sex which may be due to stress and depression that is affecting them. "The drinking is at times to temporarily alleviate the emotional and psychological pain within themselves, thus using drugs for self-medication" (Pescosolido et al., 2010). Dual diagnosis and comorbidity of substance use and depression is evident. This is why the researcher went out to find out the relationship between depression levels and substance use among students of tertiary institutions in Taita Taveta County.

1.4 Purpose of the study

The purpose of this study was to examine the relationship between the levels of depression and substance use among students of tertiary institutions,(in Taita Taveta County, Kenya) by use of BDI (Beck's Depression Inventory) and ASSIST (Alcohol,

Smoking and Substance Involvement Screening Test) respectively, with a view to exploring ways of preventing depression in tertiary institutions.

1.5 The Objectives of the Study

The following objectives guided the study:

(i) To determine the prevalence of depression among students of tertiary institutions in Taita Taveta County, Kenya.

(ii) To explore the prevalence of substance use among students of tertiary institutions in Taita Taveta County, Kenya.

(iii) To examine the relationship between different levels of depression (according to BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

(iv) To explore intervention measures of preventing depression among students of tertiary institutions in Taita Taveta County, Kenya.

1.7 Hypothesis (Null) of the Study

The following was the null hypothesis of the study.

H_0: There is statistically no significant relationship between levels of depression (according to BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

1.8 Significance of the Study

The significance of any study is based on its academic contribution and how relevant it is to addressing the real and current issues in the society. The level of depression and substance use amongst students of tertiary institutions in Kenya,

particularly Taita Taveta County is high, as indicated by the number of students from the same institutions who flock bars and entertainment joints who then indulge in all manner of intoxicative substances and cause commotions; and also by the numbers and incidences of violence, like causing harm to each other in their residences, strikes and damage to property. There also has been a spike in the number of suicide cases and violent attacks based on love gone sour amongst college students.

This study could also benefit the proprietors, administrators, managers and tutors of tertiary institutions, the policy makers and implementers at county and national government levels, parents/guardians, sponsors and donors, and all stakeholders in tertiary education and institutions. The reason for this study was that the number of students in tertiary institutions is on the increase courtesy of the government attempts to revive middle level colleges with the aim of producing more skilled workforce in the areas on technical and technician level of diploma and certificate qualification.

The results of this study shows the need to mitigate the effects of depression and substance use disorders to avoid a lot of property destruction due to violence during strikes and from drunken behavior of violence, more threat to life in colleges in the form of suicides, homicides and assaults and injuries, college drop outs occasioned by both depression and substance use. Poor academic performance at tertiary level in both national and internal examinations and low morale and frustrations in the colleges would be minimized. This would result in negative perception of tertiary institutions in the eyes of the public and potential students.

1.9 Scope of the Study

The study was carried out in four tertiary institutions in Taita Taveta County. The respondents were the multi-level selected students who were ten percent of the total

population. The four tertiary institutions were St Mary's Teachers College Bura, Coast Institute of Technology Voi, Tsavo Institute of Technology Voi, and Kenya Medical Training College Voi. The study was guided by four objectives which focused on the presence of depression among students of tertiary institutions, prevalence of substance use amongst students of tertiary institutions, the relationship between the levels of depression and substance use, and the intervention measures that need to be put in place to address both depression and substance use.

The independent variables (IV) in this study were levels of depression which were measured using a standardized tool of Beck's Depression Inventory (BDI). The aspects to be examined in the levels of depression are normal ups and downs, mild mood disturbance, borderline depression, moderate depression severe depression and extreme depression. The dependent variable (outcome or result variable) were substance use, and the aspects to be examined were current use, life time use, levels of risk, poly drug use and types of substances. The standardized tool that was used is Alcohol, Smoking and Substance Involvement Screening Tool (ASSIST). The questionnaires and assessment tools were administered to students and staff in the institutions.

1.10 Delimitations of the Study

The delimitations of the study refer to the features that arise from limitations in the scope of the study which define the boundaries of the research (Simon & Goes, 2013). The delimitations of the study are the boundaries set by the researcher by conscious exclusionary and inclusionary decisions in regard to the subject of interest (Simon & Goes, 2014). Delimitations are within the researcher's control. This study was limited in scope on targeting students in four tertiary institutions in Taita- Taveta

County. It was not possible to reach all students in all tertiary institutions located in Taita- Taveta County. The study did not cover other aspects which are not in the Conceptual Framework and which are not in line with the objectives of the study. It was actually targeting 10% of all the registered students in the selected tertiary institutions. Any aspect that may arise outside the objective is not considered because it would divert the focus.

1.11 Limitations of the Study

Limitations are possible short comings or influences that can affect the study and are not under control of the researcher (Thomas, Nelson & Silverman, 2011). They limit the extent to which a study can go and may affect the end results of the study (Simon & Goes, 2013). In this study some of the respondents declined to participate in the interviews. To avoid this, the researcher was keen to assure the respondents that the responses collected would remain confidential, and that they would not be used for the purposes of this research study only.

Not all the respondents were available during the data collection exercise due to the fact that institutions were closed country wide due to COVID-19 pandemic. This forced the researcher to use both telephone interviews (which had challenges due to the fact that the respondent couldn't trust the caller and was not seeing the caller) and also hard copy interviews to the students who reside around the institutions through their leaders and colleagues who were introduced to the researcher by the staff of the respective institutions. The researcher took a lot of time because initially there was hope of colleges opening a few months after the sudden closure in March, 2020. It became apparent that the colleges were not opening any time soon. The researcher had to come up with different and innovative ways of reaching the respondents. There was inability

to verify the accuracy and truthfulness of all the information that was got from the respondents and key informants. To this end the researcher assured the respondents of confidentiality.

1.12 Assumptions of the study

Assumptions are underlying ideologies that the researcher trusts or admits but that are difficult to attest in any actual way (Hissong, Lape, & Bailey, 2014). Assumptions in a study are things that are somewhat out of researcher's control, but if they disappear the study would become irrelevant (Simon, 2011). The researcher assumes that there was some degree of prevalence of depression and substance use among the target population/respondents, that there was some relationship between depression and substance use among the target population/respondents, and that the participating institutions helped in exploring ways to address depression among its students,

1.13 Theoretical Framework

A theoretical framework explains phenomena and tries to clarify why things are the way they are based on certain theories (Kamau, Githii, & Njau, 2014). In this study, Wendy Treynor's Depression Theory (2009) was used. The theory has been reviewed over time. The reason for the theory is that Wendy Treynor's theory explained the source and effect of depressive feelings and how the depressive feelings play in relation to social and self-rejection to the point of an individual getting into substance use to relieve psychological pain and discomfort and link one to a social group of substance users which accepts him/her as long as they are united by the substance use behavior.

1.13.1 Wendy Treynor's Depression Theory (2009)

Wendy Treynor states that depression occurs when an individual is stuck in a social situation that rejects the person's self for a long period of time. The rejection occurs both internally and externally, and with time it becomes self-rejection, where an individual goes through rejection from both the group and the self. The rejection becomes inescapable and depression sets in. In this case depression is understood as a consequence of continued conflict- both external and internal. If such a person doesn't get any social group that accepts him/her, they should create an environment that gives them peace of mind. Because lack of peace of mind also bring about some internal pain and discomfort, they may resort to substance use to relief the pain and discomfort albeit temporarily to begin with. The substance use behavior ends up recruiting them to a peer social group which gives comfort and acceptability. The substance is then both a self-medication to alleviate not only pain and discomfort but also gives them social belonging in fellow substance users.

With time, the acceptance found in such a group will slowly internalize leading to self-acceptance, removing personal conflict, and eradicating an individual's depression state (Hetrick, Parker, Robinson, Hall, & Vance, 2011). Depending on the social environment the social group may act as a substance use agent and initiator into substance use, which ultimately causes addiction which is another mental disorder. In this case depressive disorder becomes a precursor to substance use disorder.

The main tenet of the theory is depression emanating from self and social rejection owing to some internal and external conflict which leads one to find an environment that provides peace of mind. It states that substance use may be the easiest way to find peace of mind, get some comfort and social acceptance. The theory is premised on depression from which the researcher gets his independent variable, the

causative factor of the study. The study is also anchored on depression as a cause of substance use.

The theory holds that the pain and discomfort caused by depression leads one to seek substance use as a relief to the pain and in the process, one gets attached to a social group which gives him a sense of belonging thus reducing internal and external rejection. This acceptance into a group gives him peace of mind but also risks exposing him to addiction to substance use both because of euphoric feelings and also social belonging and acceptance which it brings. Students in tertiary institutions are likely to go through this cycle of psychological and social journey after they experience stress and depressing situations which are common in their college and social environments. The intervening or mitigating variables play a big role in how fast or slowly one slips into substance use, which is my resultant or dependent variable. All the three objectives are anchored on the theory of Wendy Treynor on Depression.

1.14 Conceptual Framework

According to Mugenda (2008), conceptual framework is a schematic presentation which link between the research title, the objectives, the study methodology and the literature review. It is an analytical tool with several variations and contexts used to make conceptual distinctions and organize ideas. In this study the levels of depression will be measured using Beck's Depression Inventory while the substance use will be measured using Alcohol Smoking and Substance Involvement Screening Test. The intervening variables of institutional structures and socio-demographic factors will be assessed through Key Informant Interviews Questionnaire to be developed by the researcher. All the respondents will be screened using both BDI and ASSIST.

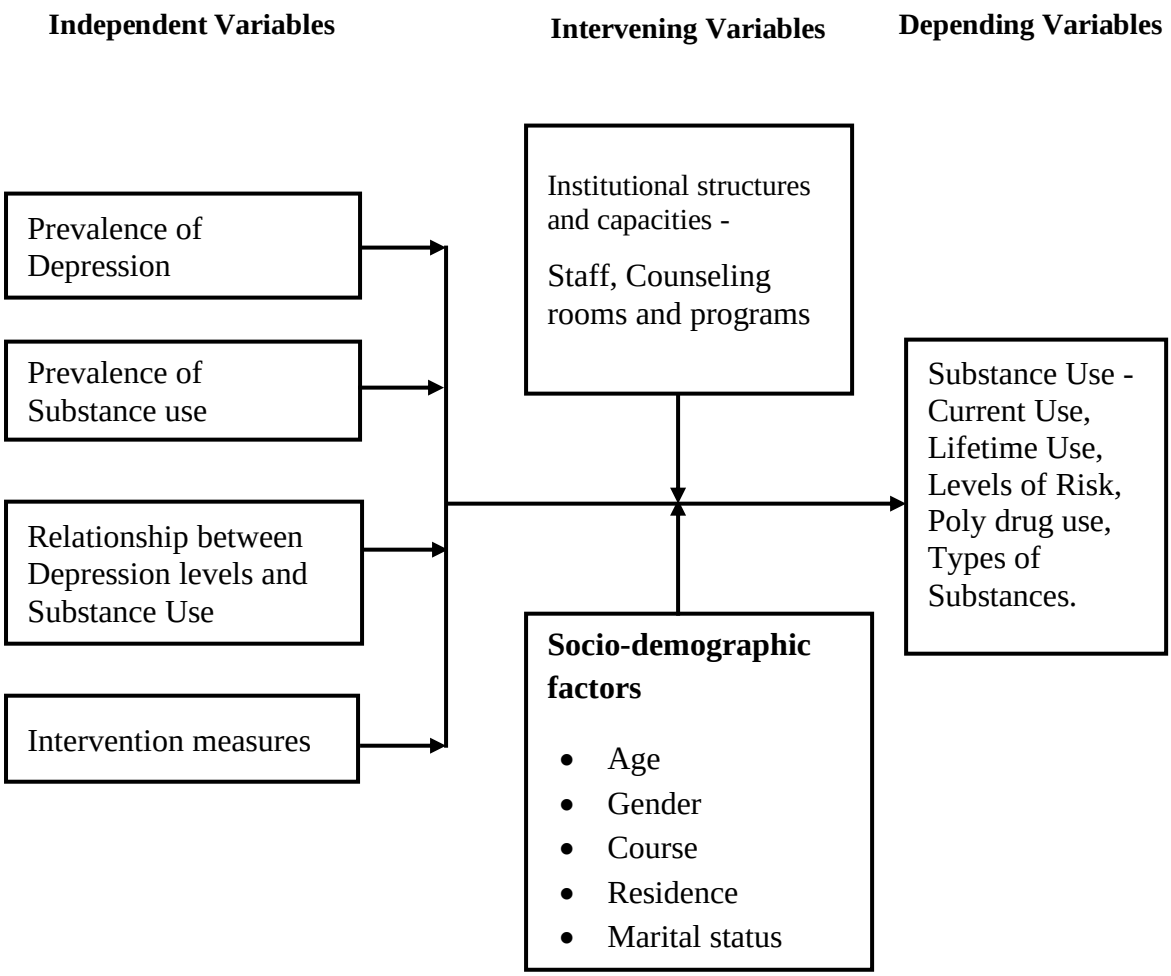

Figure 1.1 Conceptual Framework for Relationship between Levels of Depression and Substance Use among Students of tertiary institutions

Source: Researcher (2020)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on the relationship between depression level and substance use. The purpose of the research is to find out the relationship between depression levels and substance use among students of tertiary institutions. The researcher would like to see the relationship between the different levels of depression and substance use. The independent variable (predictor or cause) is the depression levels. The dependent variable (result or outcome) for this research study is substance use. The literature review will be guided by objectives. For that reason, there will be sections on depression levels and substance use, and also institutional structures to detect depression and substance use.

2.2 Review of Literature

This section presents the empirical review of existing literature on the relationship between levels of depression and substance use. In this case, substance abuse is the dependent variable. The independent variables are depression levels and institutional structures to detect depression among students of tertiary institutions in Taita Taveta County.

2.2.1 Depression Level and Substance Abuse

Most times those who suffer depression suffer substance use disorders as well. This ia known as co-occurring disorders or comorbidity. This may result in high mortality rates among the victims of the duo conditions.

It manifests in the form of low or fluctuating moods, which leads the patient to seek relief from this feeling. The relief is often got from pleasure inducing substances like alcohol, sedatives, hallucinogens and other types of drugs. This is the reason as to why there is a close relationship between anxiety, stress-feeling, depression and substance use. The self-medication becomes habitual and later on tends to be harmful to the user and therefore addiction or substance use disorder as an additional disorder.

The study found the same trend and phenomena amongst students of tertiary institutions in Taita Taveta County, Kenya.

Prevalence of depression and increasing rates of substance use among young people, and particularly those who are in higher institutions of learning, is becoming an issue of concern in Africa and in Kenya. There are quite a growing number who are not able to complete their studies and to graduate because of the effects of both depression and substance use. It sometimes becomes difficult to know which one of the two disorders is riding on the other or which one started. Normally, one of the conditions survives on the other in a symbiotic relationship. This happens without the patient knowing. It is said that one in every three adults with drug or alcohol use problems also suffers from depression, depending on other factors like family and community rates of both depression and substance use disorders. The researcher found this close relationship in this study. In America it was found out that twenty per cent of the people with substance use disorder suffer depression.

2.2.2 Levels of Depression and Substance Abuse Relationship

Globalization and civilization are making the society become more challenging for human beings to live. Students in tertiary institutions have their share of societal challenges, thus increasing the prevalence of depression amongst the students. Notably,

the abuse of substances is also on the rise among students. Even though substance abuse was previously blamed on peer influences and family backgrounds, there is increasing new evidence linking depression and substance abuse.

Depression continues to dominate among the most debilitating conditions in the world today. It occurs on a higher rate among women than in men. As noted earlier, depression has a close relationship with substance use. It also becoming more and more common among youth and particularly those in institutions of higher learning. These factors and rates of depression vary from one geographical region to another and in determined by socio-cultural and economic factors. Different reports from United Nations' agencies and organizations attest to this, going by their annual and other periodic reports based on scientific findings and studies.

A research was carried out to determine whether there is a relationship between depression and drug abuse among students in Calabar, Cross River State in Nigeria (2017), and the target population for the study was 1,002 students, and purposive sampling was used to bring up a sample of 200 students. 190 students among successfully participated in the research study. Data was collected using the Beck's Depression Inventory (BDI), and the Drug Abuse Screening Test (DAST). Data was analyzed using descriptive statistics and correlation analysis. Results revealed that there is an increased prevalence of depression and abuse of drugs among the students. Further analysis revealed that there was a statistically significant relationship between depression and drug abuse. From the findings, the researchers recommended that schools and homes should be made friendlier to students, so that they can comfortably open up about their challenges to parents, guardians, or teachers (Njoku & Obogo, 2017).

Despite the fact that substance use is commonly linked to mental disorders, there is paucity of data on this association from middle- and low -income countries such as South Africa and Kenya. Amina, Flisher, Grimsrud and Stein, (2014) embarked on establishing the association between substance use and common mental disorders in young adults in South Africa. The objectives were to determine the young adults' patterns of substance use, to identify the common psychiatric disorders patterns in relation to use of specific substances, and to determine the association between specific psychiatric disorders and the use of specific substances in the South African population. Among other findings, the study established a significant association between substance use, mood and anxiety disorders, with a particularly strong relationship between mental disorder and cannabis use. The results were found to be consistent with those from previous studies, and which corroborated the argument that comorbid substance use and mental disorders amounted to a major hindrance to public health. Further, the research found a strong correlation between substance use disorder and depression. There is the element of people using substances to sooth the psychological pain due to depression. Behaviorist models of addiction focus on directly observable behavior. The one who uses drugs for the purpose of soothing psychological pain and discomfort unknowingly forms a habit due to repeated use, which occurs because of the rewarding effect of feeling good. Finally, he or she loses control of the habit and becomes a victim of addiction. Depression will have been the ultimate cause of addiction in such a case. Depression is characterized by a long lasting and recurrent depressed mood and/or anhedonia referring to a diminished interest or pleasure in most activities. Substance use disorder, or addiction, on the other hand is characterized by loss of control of the use even when it is causing harm or when it has negative effects to the user and those

who are important to him or her. What seems to matter is the feel-good euphoria which is caused by the change of brain chemistry of the user.

Many studies point to the disease-causing relationship between depression, mental health disorders, and substance use. Those with depression have twice a propensity to substance use disorders as compared to those without depressive disorders. This applies for the users of all types and classes of substances and drugs across the board, it is called reciprocal comorbidity. (Grant, Goldstein, Saha, & Chou, 2016; Huang &, Hasin, 2015).

In a study done in Spain, Espada, Sussman, Huedo-Medina and Alfonso (2011) investigated the relationship between substance use and depression among the adolescents. The study analyzed the consumption of cannabis, tobacco and alcohol in relation to the existence of depressive symptoms in a sample of school going adolescents. The study findings showed that high scores in depressive symptoms had an association with the consumption of alcohol and tobacco. However, there was no association to the use of cannabis. Additionally, depression is a variable that had a link to all the substances evaluated but not for the frequency of use. According to University of Michigan depression center (2014), depression is a real illness that impacts on the brain. There occurs some change in the brain of the person suffering from depression. These changes in the brain institute a certain behavior or habit, aimed at bringing some pleasurable feeling or avoid pain and discomfort to the patient use. The use of any substance will also have the effect of changing brain chemistry.

In South Africa, a survey “Drug use among youth and adults in a population-based survey in South Africa” and came out with the observation that previous investigations in South Africa and other countries found that specific socio-demographic factors were associated with drug use. Further, certain health risk

behaviors such as common mental disorders (major depression and anxiety disorders), alcohol use disorders, HIV risk behaviors and others, have been found to be associated with drug use. This shows the impact of mediating socio-demographic factors and the relationship between depression and substance use (Peltzer & Phaswana-Mafuya, 2018).

In Kenya, in the Daily Nation Friday July 19, 2019, two girls, in an article, "Dynamic duo seeks to spread awareness on mental health", two girls confess that they got in substance use and consequently addiction, after they went through depression while at the university. The article says in part, "... It was not long before she slumped into depression and turned to alcohol for solace". For the other girl it says, "… she got into a relationship with a young man who was emotionally abusive. To numb her frustrations, she too ended up turning to alcohol" in this case what initiated the substance use was the depression which the girl was suffering from. The substance use habit came as a result. The soothing effect reinforces the substance use behavior and increasing the chance of repeat because of the reward of the good feeling that she or he gets when using the substances.

2.2.3 Intervention measures of preventing depression among students

Research in other parts of the world give a need for institutions to have structures to prevent or detect depression in students in order to be able to assist them mitigate the effects of depression. A nationwide survey conducted by American College Health Association on college students in 2011 at two- and four-year institutions concluded that almost thirty percent of college students were found to be depressed to an extent that they cannot function normally. In America and Europe depression amongst students of universities and colleges is an issue of major concern. This is

because depression harms students psychologically and harms their academic progression. There has been an effort to enable learning institutions to detect and/or treat depression among its learners. The researcher has recommended a similar approach after the findings indicated that tertiary institutions are not well prepared for the handling mental health and psycho-social support issues within the institutions.

The Ministry of Education (MOE) in Kenya has given guidelines on how institutions should set up counselling centers in tertiary institutions. Institutions need guidelines to design and develop and deliver guidance and counselling services as one of the ways to prevent depression among students in tertiary institutions. It is also an intervention measure to stem the rising cases of depression in tertiary institutions**.** In the "The Challenges Facing Effective Implementation of Guidance and Counseling in Institutes of Technology in Nyanza, Kenya", the author recommended that the government should consider employing full time counsellors in the institutes of technology to allow for constant and fulltime access of the students to the counsellors. Special effort should be put up to reach male students so as to correct their negative attitude to guidance and counselling services since the study revealed that they actually have deep problems for which they need assistance (Nyarangi, 2011).

A study entitled "Prevalence of substance use among college students in Eldoret, western Kenya", concluded that there was high prevalence of substance use among university and college students in Eldoret causing high significant psychosocial and physical problems in this population. The proportion of students using alcohol was high with serious adverse effects, raising the need for interventions to reduce the risk of subsequent use addiction and other deleterious consequences (Atwoli, Mungla, Ndung'u, Kinoti, & Ogot, 2011).

A survey by National Authority on Campaign against Drug Abuse established that the guidance and counselling teachers work within a time-constrained environment due to other competing demands and responsibilities such as covering the prescribed syllabus of other subjects that they teach. It was recommended that The Ministry of Education, Science and Technology, Teachers Services Commission (TSC) and KICD should address the issue of overloading guidance and counselling teachers in order to improve the quality of the services that they provide (NACADA, 2014).

This highlights the emphasis of the comorbidity of depression and substance use disorder. There is need to intervene at institutional level on the cases of depression and substance use. It also highlights that depression is the cause of substance use disorder in the circumstances and environment of tertiary institutions, with special reference to students in tertiary institutions. The findings confirmed that indeed depression causes students to use substances.

2.3 Summary and Research Gap

Depression can lead to dysfunction and worsen the affected person's life. Causes of depression are many and variant according to the levels. A lot of research has been done on the consequences of depression. On the relationship between depression and substance use, the gap is that most of the studies focus on substance as the cause of depression and few on the reverse, depression as the cause of substance use. Few studies have been done in the tertiary colleges, most of them are on secondary schools and universities. A look at NACADA website and repository attests to this.

Coast Regions has been earmarked as having an alarming rate of drug abuse in Kenya (NACADA, 2014). Taita Taveta County is in Coast Region and the drug lords of Mombasa may start looking for market further inland, and Voi is the next town

destination. Voi is the commercial hub of Taita Taveta County. According to NACADA (2014), there is high level of awareness of bhang and cigarettes and since the cost is dictated by accessibility, hard drugs such as heroin and cocaine were costly due to the scarcity. For instance, the accessible of Cocaine was mainly found in North Eastern, Coast and Nairobi regions. There are few studies done in Taita Taveta on depression and substance use.

This shows Coast Region is a risky region and thee college environment is also risky because substances can easily be pushed among the students. Minimal research has been done on depression related factors influencing substance abuse among students of tertiary institutions in Coast Region, more so in Taita Taveta County, yet Coast is one of the regions with the highest index of drugs supply, consumption and addiction. Most of the studies done have concentrated on drugs without factoring depression as a condition that can be a predictor and cause of substance use.

The study done in Nigeria shows the gap of the target population in the sense that Njogu and Obogo (2017) targeted secondary or high school students, while the researcher targeted students in tertiary institutions. The gap also exists in the variables. Most studies look at substance use as the independent variable (the causative factor) and depression as the dependent variable (resultant factor) in the studies referred to. The researcher went out to look at depression as the independent variable, meaning that it is the cause of the substance use (the resultant factor). The researcher also went ahead to look at the various levels, and used a standardized tool of BDI to facilitate the findings. The other complimentary tool for this particular study was ASSIST in the case of substance use aspect of the study. The gap in the Kenyan scenario is seen in the NACADA research bank, which most of the time looks at substance use and abuse as the cause of depression, however true it may be.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter is divided in several sections including research design, target population, the study site, the study sample, the sampling techniques, pilot testing, data collecting measures, data management processes, data analysis and presentation and ethical considerations.

3.2 Research Design

Research design is the scheme, outline or plan that is used to generate answers to research problem (Creswell, 2012). It constitutes the blue print for the collection of measurement and analysis of data (Kothari, 2004). The study adopted correlational research design. Correlation research design allows testing of expected relationships between and among variables, making statistical assessments and making of predictions about the relationships before collection and assessment of data. The Independent Variable (IV) is the different levels of Depression as determined by Beck's Depression Inventory (BDI) while the Dependent Variable (DV) is the substance abuse behavior. The intervening variables are age, gender, course, type of institution, marital status, residence, institutional capacities of counseling rooms, counseling programs, and qualifications for counseling staff. The research design will be important in finding out the relationship between depression levels and substance use among students of tertiary institutions in Taita Taveta County.

3.3 Research Site

The importance of research site is to identify where the actual site and data will be collected (Kombo & Tromp, 2006). The study was carried out in Taita Taveta County. Cases of substance abuse have been on the rise among students in tertiary institutions in Taita Taveta County. Additionally, cases of depression have been reported in the institutions' counselling departments, as has been incidents of violence, assault and binge drinking amongst students. In that regard, the researcher decided to find out whether levels of depression have a relationship with substance abuse among the students.

3.4 Target Population

According to Singh (2007), population is a group of individual, objects or items from which samples are taken for measurement. Stangor (2011) considers population as all individuals or items with the characteristics that a researcher wishes to study. The researcher targeted students who are currently enrolled in four tertiary institutions in Taita Taveta County. The institutions are: St. Mary's Bura Teachers College, Coast Institute of Technology, Tsavo Institute of Technology, and Kenya Medical Training College - Voi. The target population is 2,807 while the sample population is 281 respondents. There were staff who deal with students' affairs in these institutions, but the researcher sampled four for Key Informant Interviews. These are Deans of Students, Matrons, Tutors in charge of Guidance and Counseling and/or Principals.

3.5 Study Sample

The sampling procedure and sample size used in this study was as discussed below:

3.5.1 Sampling Procedure

Sampling procedures is a method of selecting the subjects or cases that will be included in the study (Mugenda & Mugenda, 2003). The study employed a two-stage sampling procedure to select study participants. The first stage involved random selection of four tertiary institutions from a list of all institutions in Taita Taveta County. Secondly, students enrolled in each of the selected institutions were randomly picked and included in the sampled population.

3.5.2 Study Sample Size

Respondents of the study will be selected using the Kothari sampling formula (Kothari, 2004). The formula is as given below:

Sample size = N * 10 %. In this case, N is the population size, while n is the sample size. The table below shows a breakdown of the sample size calculation.

Table 3.1 Sample Population before Study

Study site	**Target population (N)**	**Sample size (n = N * 10%)**
Coast Institute of Technology	2,400	240
St Mary's Bura Teachers Training College	177	18
Kenya Medical Training College- Voi	161	16
Tsavo Institute of Technology	69	7
Total	**2,807**	**281**

The study sample size is therefore 281 students who are currently enrolled in the four selected tertiary institutions in Taita Taveta County.

3.6 Data Collection

A semi- structured questionnaire was used to collect data from students enrolled in the four selected tertiary institutions. Additionally, a Key Informant Interview (KII) tool was also used to capture qualitative data from staff handling students' welfare, namely, Deans of Students, Matrons, Tutors in charge of Guidance and Counseling, and/Principals in some cases. Data collection was conducted through physical interviews and phone interviews. The researcher ensured that the research assistants observed health regulations set to combat COVID-19 during when interacting with participants. The section below discusses the various instruments that will be used to capture data, the pilot testing of instruments, reliability of the instruments and validity of the instruments.

3.6.1 Development of Research Instruments

Bhattacherjee (2012) explicates that a questionnaire is a research instrument consisting of a set of items or questions geared to gather responses from respondents in a standardized manner. Questionnaires are preferred due to the ease of administering and being time and cost effective (Babbie, 2014). In addition, questionnaires are have more objectivity and usually free from bias as witnessed in an interview since the collected information is in respondent own words. Questionnaires give respondents ample time to give well thought out answers as well gathering information from a large sample simultaneously and thus saving time.

The semi- structured questionnaire was structured according to the study objectives. The variables which were measured included demographic variables, depression levels, prevalence of substance abuse, and institutional structures put in place to detect depression among students of tertiary institutions. The students'

questionnaire was meant to capture personal bio data like age, gender, course, residence and marital status, which are intervening variables which the researcher assessed in relation to depression and substance use. The Depression levels will be measured using the Beck's Depression Inventory (BDI), while substance abuse will be measured using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

The Key Informant Interview tools were also developed in line with study objectives, particularly to address the intervention measures which the other instruments did not expressly address. The tools aimed at measuring a relationship between depression levels and substance abuse, as well as examine institutional structures that have been put in place to detect depression among students of tertiary institutions. KII questionnaires were given to Deans of Students/Counselors, or their representatives.

3.6.2 Pilot Testing of Research Instruments

Creswell (2012) observes that it is vital for a researcher to test tools before using them to ensure their validity, reliability and practicability. Piloting was done in order to ascertain the credibility of the tools by testing clarity of language, time taken to respond, procedure of administering, length and layout of tools. Gay, Mills and Airasian (2010) maintain that participants in the pilot test should have similar characteristics to the intended participants.

The fundamental purpose of conducting a pilot study was to examine the usability of the instruments and the approach that was intended to ultimately be used in a larger scale study. The feasibility targeted all the instruments and acted to inform the researcher of any logistical challenges and advantages which he could learn from the exercise before engaging in the main study with the target population. Responses from

the interviewees during the test was used to test the instruments' applicability. The pilot testing was conducted at Taveta Technical and Vocational Training College, an institution in Taita Taveta County. The target population was 30 students. The sampled population for this study was three (3) respondents which was 10% of the total population. Two respondents were male and one was female. The institution did not take part in the piloting will not be involved in the final data collection exercise.

3.6.3 Instrument Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results after repeated trials (Orodho, 2012). Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials; it may be influenced by random error which results from deviation of true measurement such as ambiguous instructions to the subjects and errors in coding (Mugenda & Mugenda, 2003).

Reliability of the questionnaire was measured using the Cronbach's alpha. A Cronbach's alpha score of 0.7 is an acceptable reliability for social sciences. The higher the score obtained from the scale, the more an instrument is reliable. The pilot test will also be used to test the reliability of the instruments before they can be used during the study – the test-retest reliability test.

Table 3.2 Cronbach alpha test

	Cronbach's Alpha	No. of Items
Modified BDI tool	.812	21
Modified ASSIST tool	.799	15

Source (Researcher, 2020)

Results in table 3.2 present the Cronbach alpha test coefficients. As indicated, the modified BDI tool had 21 items with a coefficient of 0.812. The modified ASSIST tool had 15 items with a coefficient of 0.799. Therefore, the questionnaire items have Cronbach alpha values greater than 0.7, indicating reliability.

3.6.4 Instrument Validity

Validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested (Kothari, 2004). Content validity shows how well a set of scale items matches with the relevant content domain of the construct or the indicators (Bhattacherjee, 2012). Validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested (Kothari, 2004). Content validity shows how well a set of scale items matches with the relevant content domain of the construct or the indicators (Bhattacherjee, 2012). Content and construct validity were used to determine if the items on the questionnaires and gave the desired data from the respondents. The internal validity was addressed during piloting. Given that the BDI and ASSIST tools have previously been tested and used in research studies, their validity in measuring depression levels and substance abuse is guaranteed. The students' questionnaire was also tested at pilot stage. The KII Tool (Questionnaire for staff) that the researcher has developed was validated by the supervisors once they approve the proposal document. The researcher also asked for expert validation of the research instruments from supervisors from Africa Nazarene University (ANU) and other research experts.

3.7 Data Analysis

The data generated by questionnaires was organized and coded using numbers to specific responses. The techniques employed were mostly theming (drawing together of key responses and issues) and coding (assigning numerical values to responses). The cleaned and coded data was then analysed using R-studio (version 4.0.2).

Demographic characteristics of the respondents were analyzed using descriptive data analysis. Chi-square tests, ANOVA and Linear Regression Model was used in analyzing the Hypothesis, which addresses objective three. By getting the analysis of the hypothesis, all the research questions for first, second and fourth objective were answered. Descriptive data analysis was used to answer the first and third objective. Qualitative data analysis involved the identification, examination, and interpretation of patterns and themes in textual data to determine how these patterns and themes helped to answer the research questions.

3.8 Legal and Ethical Considerations

The researcher obtained a research clearance and ethics clearance from Africa Nazarene University (ANU) and sought permission to carry out data collection from the four selected tertiary institutions in Taita Taveta. The researcher also obtained a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) before undertaking this study. All questionnaires were administered in a private and confidential manner throughout the study. The respondents were assured of their anonymity and confidentiality.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

The chapter presents data analysis, presentation and interpretation of results. The study sought to examine the relationship between the levels of depression and substance use among students in tertiary institutions. This chapter has multiple sections on the respondents' demographic characteristics; depression levels and prevalence of substance abuse; relationship between depression levels and substance abuse; and intervention measures to prevent depression among students. The KII has sections according to the objectives as well.

4.2 Characteristics of the Respondents/ Demographic Characteristics

Under this section, frequencies on the respondents' gender, age, marital status, category of institution, place of residence during studies, activities undertaken while stressed, using substances to get relief, and frequencies on whether depression leads to usage of substances are presented.

4.2.1 Response Rate

The table below shows the response rates of respondents.

Table 4.1 Response Rates

Category	Target	Returned	Percentage
Teachers	281	281	100.0%
Staff	4	4	100.0%

The study targeted 281 teachers. Of the target, 281 successfully completed the questionnaires, representing a response rate of 100.0%. 4 staff were also targeted. 4 of them returned the KIIs, representing a 100.0%.

Some student respondents did not respond to all the sections of the questionnaires and tools, therefore, the tally of 281 may not be the figure of assessment in some tools. All the staff respondents fully completed their questionnaire.

4.2.2 Gender of Respondents

The pie chart below presents frequencies on the gender of respondents.

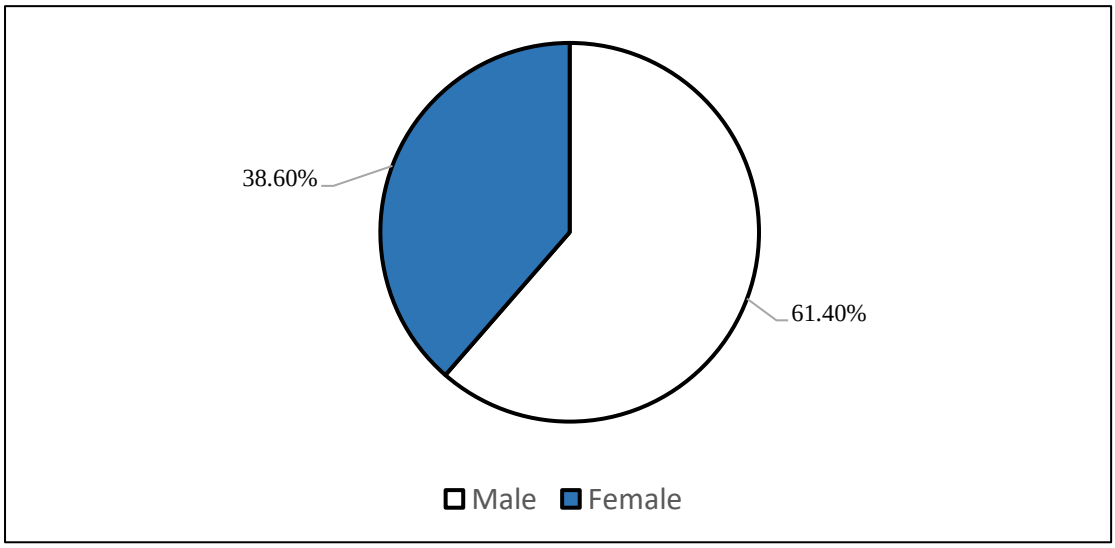

Figure 4.1 Respondents' Gender

From the results, majority of the respondents (61.4%) were male, while 38.6% of them were females. One notable characteristic of Technical and vocational is the low number of female students. This could be because of the perceived “male” and “female” courses in the Technical and Vocational institutions. For instance, dress making, tailoring and design are perceived to be for girls while mechanics, electronics and building construction are perceived to be for boys. So, the population of either gender

will depend on availability of their courses. Taita Taveta tertiary institutions have more courses that are perceived to be for boys.

4.2.3 Age of Respondents

The table below presents the age of respondents.

Table 4.2 Respondents' age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	278	20	34	23.81	3.376

From the results, the youngest respondent was 20 years old, while the oldest was 34 years old. Average age was 24 years, with a standard deviation of 3.376. The mean age is 23.81 years which is 24 years of age.

4.2.4 Marital Status of Respondents

The chart below presents the marital status of respondents.

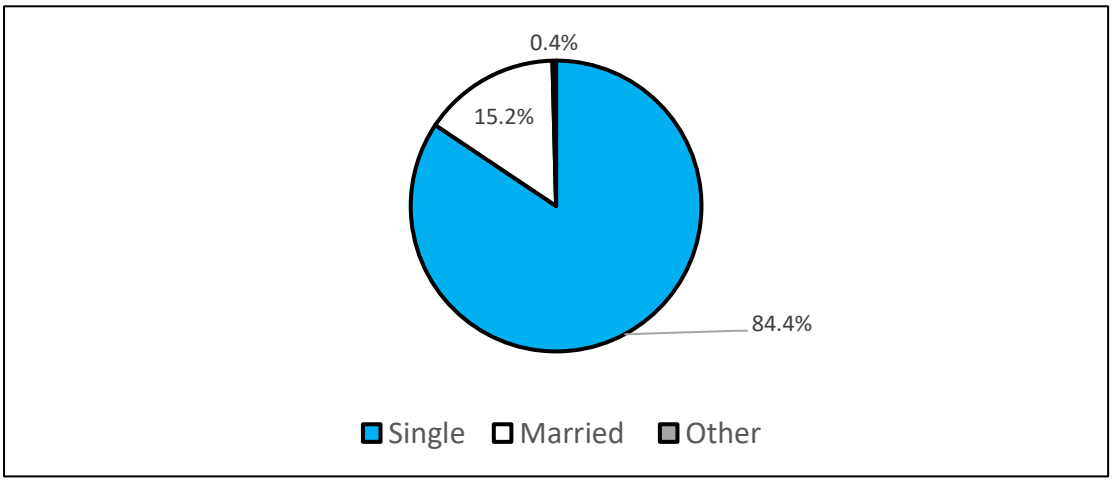

Figure 4.2 Marital status

From the figure above, majority of the respondents were single (84.4%), 15.2% were married, while 0.4% belonged to other undefined forms of marital status. The other undefined forms of marital status are widowed, separated, single parent or divorced. Due to the age bracket of the respondents the single status is justified.

4.2.5 Category of Institution

The reported categories of targeted tertiary institutions are as given below:

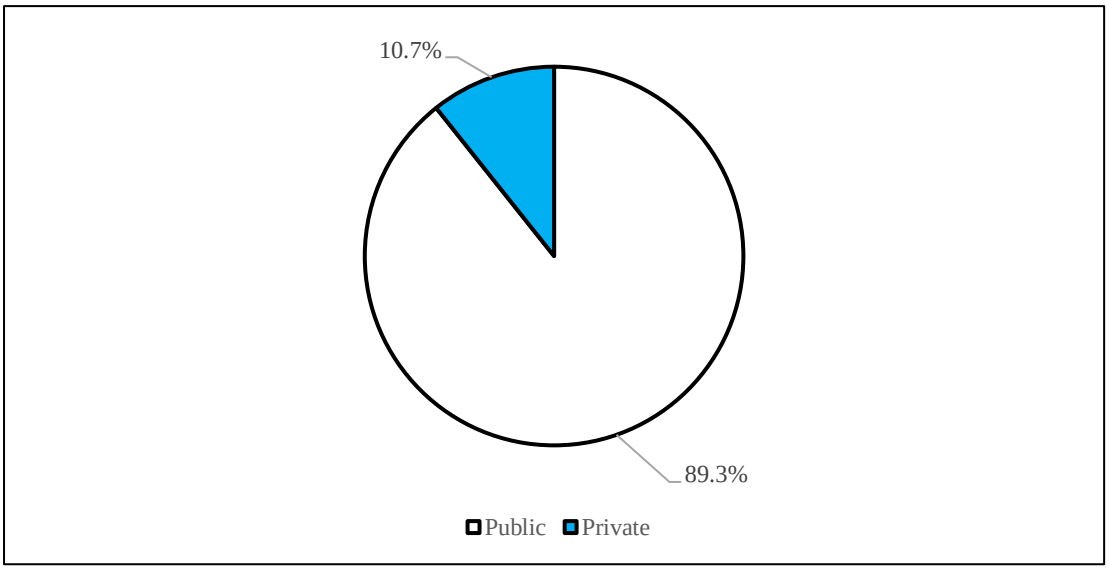

Figure 4.3 Institution category

Most of the interviewed respondents studied in public tertiary institutions (89.3%), while 10.7% of them were enrolled in private institutions. Two of the institutions were public as were the private institutions. The major difference was in their respective institutional enrolments, where Coast Institute of Technology which is a public institution produced the bulk of the respondents as seen in the following table below:

This table shows a breakdown of the sample size by institution, population and sampled size of respondents.

Table 4.3 Sample Population after Study

Study site	**Target population (N)**	**Sample size (n = N * 10%)**
Coast Institute of Technology	2,400	240
St Mary's Bura Teachers Training College	177	18
Kenya Medical Training College- Voi	161	16
Tsavo Institute of Technology	69	7
Total	**2,807**	**281**

The study sampled size is therefore 281 students who are currently enrolled in the four selected tertiary institutions in Taita Taveta County. The public institutions of CIT and KMTC had a total of 266 out of 281.

4.2.6 Place of Residence while Studying

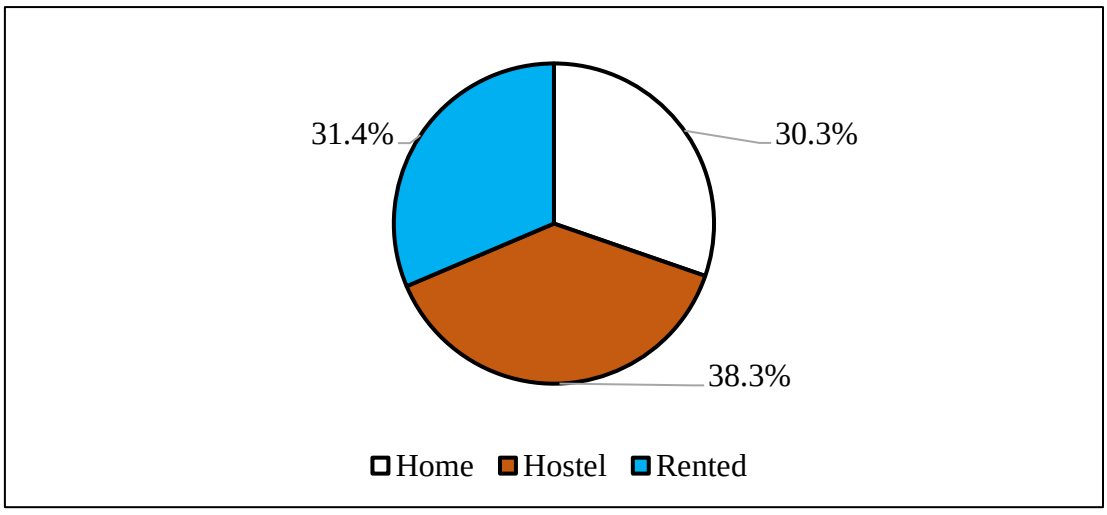

Figure 4.4 Place of residence

According to results on figure 4.4, most of the respondents (38.3%) resided in hostels while studying, 31.4% of them lived in rental houses, while 30.3% of them lived at home. This indicates that most students rely on private residence as they pursue their studies, namely staying at home and rentals accounting for 61.7%, leaving only 38.3% to Hostels in the respective colleges/institutions. These residences can easily be brooding grounds for both depression and substance use because of the type of social environment which may include peer pressure, too much liberties, and availability of the abused substances. Economic pressures and family pressures may also come into play.

4.2.7 Activities Undertaken while Stressed, Anxious or Depressed

The respondents were asked what they do when they feel stressed, anxious or depressed. 20.9% of them indicated taking alcohol, 13.2% sleeping, 12.4% smoking marijuana and cigarettes, 11.6% engaging in games and sports, 9.2% music, 5.2% watching television, 4.8% smoking and taking alcohol, while 4.4% chewing khat. Other activities include visiting friends, going for nature walks, meditation, writing, reading, doing house chores, crying and seeking advice.

4.2.8 Using Substances to get Relief

The respondents were asked whether they have ever consumed substances to get relief from emotional and psychological discomfort.

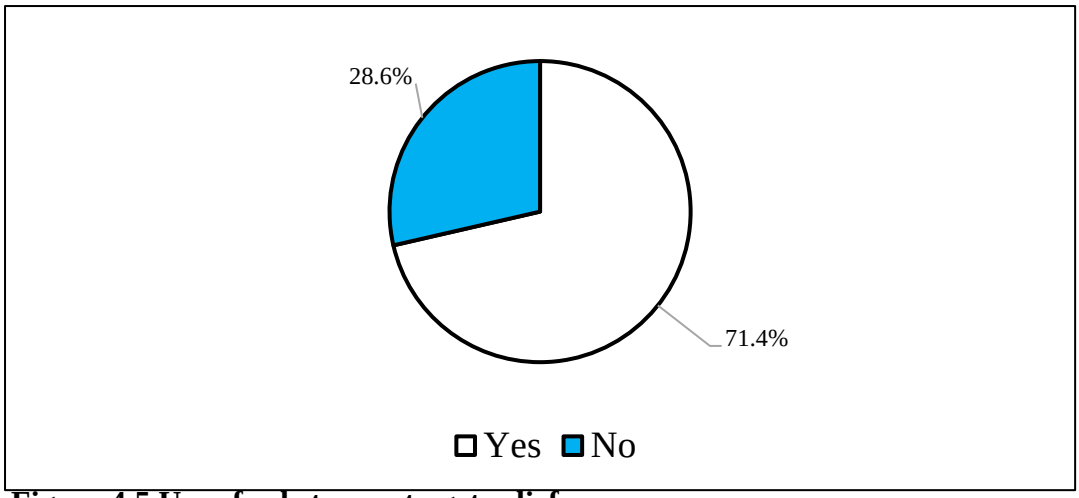

Figure 4.5 Use of substances to get relief

From the results, most of the interviewed students indicated to have used substances to get relief (71.4%), while 28.6% of them indicated that they have not used substances to get relief. Further analysis indicated that majority of those who have used substances (82.2%) use them occasionally, while 17.8% of them use them rarely.

4.2.9 Depression and Substance Use

The students were asked whether depression makes people use substances like alcohol, tobacco, marijuana and other drugs.

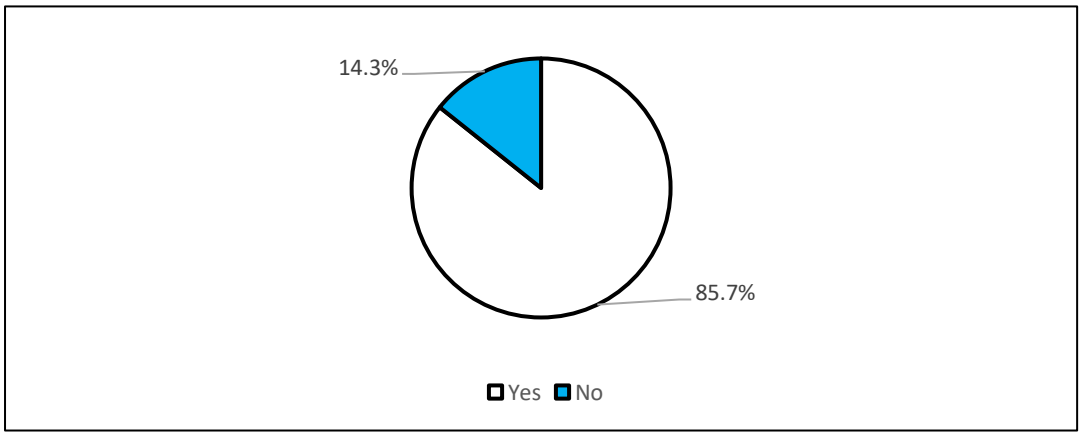

Figure 4.6 Does depression cause substance use?

A majority of the students in tertiary institutions (85.7%) tend to agree that depression leads to substance use, while 14.3% of them do not agree.

4.3 Presentation of Research Analysis, Findings and Interpretation

4.3.1 Objective One: Prevalence of Depression

Under this subsection, depression levels according to results from the modified BDI scores have been presented. The table below presents frequencies of depression levels according to results from the BDI.

Table 4.4 Respondents' levels of depression-BDI score

Levels of Depression	Frequency	Percentage
Normal ups and downs	22	8.6
Mild mood disturbance	38	14.8
Borderline clinical depression	39	15.2
Moderate depression	86	33.5
Severe depression	60	23.3
Extreme depression	12	4.7
Total	257	100.0

From the BDI results, majority of the interviewed students, 33.5%, have moderate depression. 23.3% of them have severe depression, 15.2% have borderline clinical depression, 14.8% have mild mood disturbance, and 8.6% have normal ups and downs, while 4.7% of them have severe depression.

When asked about how many cases depression among students they have handled and how they handled them, the key informants had the following to say:

> *"Two cases... counselling and guiding the students, engaging the students' minds through music and use of internet in friendly manner… To some extent, medication where antidepressants are prescribed,"* Principal.
>
> *"10… handled them through counselling and forming groups,"* Guidance and counselling H.O.D.
>
> *"Chronic depression, addiction to substances, hysteria, defense mechanism,"* Matron.

The key informants were also asked about the causes of depression. They stated:

> *"… Financial (fees and upkeep) … relationships (student to student or student to teachers) … alcoholism," Lecturer, deputy HOD.*
>
> *"Abuse of drugs and alcoholism… family issues especially parents' marital issues… social issues… love and relationship issues… financial management and money issues," Matron.*
>
> *"…Family background, relationships, peer pressure, drugs and alcoholism," Principal.*
>
> *"… learning environment, exam related issues, relationships," Guidance and counselling HOD.*

4.3.2 Objective Two: Prevalence of Substance Use

In this sub-section, prevalence of substance use according to the modified ASSIST tool are presented. The table below presents descriptive statistics on prevalence of substance abuse by students in tertiary institutions.

Table 4.5 Which of the following substances have you ever used?

Usage	Mean	Std. Deviation
Tobacco products (cigarettes, rollies, smokes, chewing tobacco, cigars)	.51	.501
Alcoholic beverages (beer, wine, spirits, home brew, RTD's)	.55	.498
Cannabis (marijuana, pot, weed, ganja, mary jay, grass, tinny)	.52	.486
Cocaine (coke, powder, crack)	.27	.444
Inhalants (BP, Shell, solvents, nitrous, glue bag, petrol, thinners)	.29	.457
Sedatives or sleeping pills (Downers, Valium, Serepax)	.39	.489
Hallucinogens (Party Pills, LSD, Acid, mushies, PCP)	.30	.460
Other drugs	.34	.474

The students were asked to indicate which substances they have ever used in their lives. From the results, the students confirmed to have consumed alcoholic beverages (mean = .55, SD = .498); cannabis (.52, SD = 486); and tobacco products (mean = .51, SD = .501).

Table 4.6 Frequency of substance usage

	Mean	Std. Deviation
In the past 3 months, how often have you ever used the substances you mentioned (first drug, second drug, etc.)?	1.88	1.475
During the past 3 months, how often have you had a strong desire or urge to use (first drug, second drug, etc.)?	1.96	1.491
During the past 3 months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial (*money*) problems?	1.67	1.518
During the past 3 months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?	1.54	1.500
Has a friend of relative or anyone else ever expressed concern *(worry*) about your use of (first drug, second drug, etc.)?	.77	.820
Have you ever tried to control, cut down or stop using (first drug, second drug, etc.)?	.76	.808
Have you ever used any drug by injection? (non-medical use only)	.58	.777

When asked how often have they ever used the substances mentioned above, the students indicated that they have consumed them weekly (mean = 1.88, SD = 1.475). On how often they have had a strong desire or urge to use, they indicated that they have had a strong desire weekly (mean = 1.96, SD = 1.491). The use of substances has led to health, social, legal or financial (*money*) problems weekly for the students (mean = 1.67, SD = 1.518); and in each week, they have failed to do what was normally expected of them because of using of substances (mean = 1.54, SD = 1.500).

From the results, friends and relatives have expressed concerns due to the students' substance abuse (mean = .77, SD = .820). The students have ever tried to control, cut down or stop using substances (mean = .76, SD = .808). Lastly, interviewed students indicated that they have used injectable drugs, but not in the past three months (mean = .58, SD = .777).

The key informants were asked to state the commonly used substances by students. They mentioned: Marijuana, Bhang, cigarettes, alcohol, tobacco, Kuber, prescription drugs, hard drugs. The most mentioned substances were Marijuana and alcohol.

4.3.3 Objective Three: Relationship between Depression Levels and Substance Use

The researcher sought to find out whether depression influences substance use among students of tertiary institutions in Taita Taveta County, Kenya. The test was conducted at an alpha = 0.05 level of significance. The Null Hypothesis was:

H_0: There is statistically no significant relationship between levels of depression (according to BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

In this objective I present the estimations and interpretations of both the BDI and ASSIST scores. First, I'll present the descriptive statistics using ordinary least square regression, and this was the output. The following tables present the data.

Table 4.7 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GENDER	270	1	2	1.39	.488
BDI SCORING	281	0	59	24.22	11.082
SUBSTANCE USE	281	0	25	12.25	6.251
COMMENT ON EFFECT S	277	1	2	1.15	.356

Valid N (listwise)	266

Where N is the total number, this shows that the standard deviation of all the variables deviated almost twice the mean. The graph below shows the stem and leaf diagram for relation between BDI scoring and Substance Use

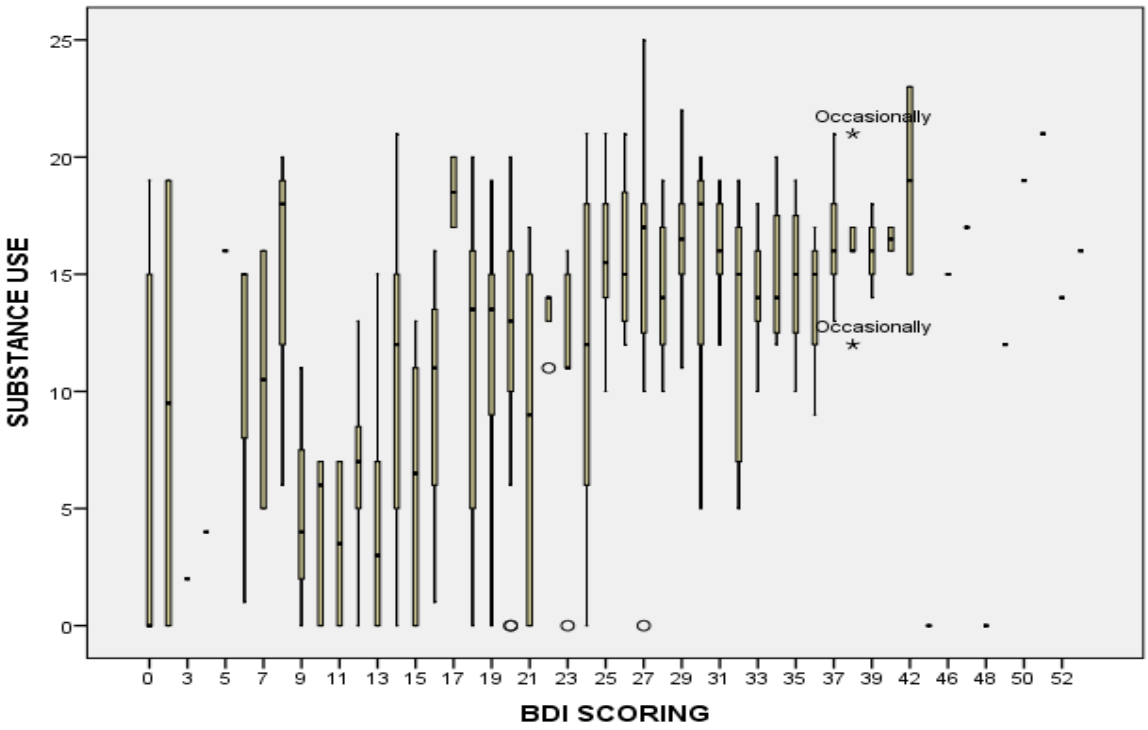

Figure 4.7 BDI vs Substance Use Scoring

From the graph one can note that substance use and BDI scoring are directly proportional.

The null hypothesis is that there is statistically no relationship between different levels of depression (BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

Using the chi-square test of independence such that

H_0: BDI=SUBSTANCE USE against

H_1: BDI≠SUBSTANCE USE

Table 4.8 Chi-Square Tests

df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
1176	.000	.[b]	
1176	1.000	.[b]	
		.[b]	
1	.000	.[b]	.[b]

a. 1250 cells (100.0%) have expected count less than 5. The minimum expected count is .00.

b. Cannot be computed because there is insufficient memory.

From the above results and since the independent variable is Substance abuse is continuous and the dependent variable which is BDI count is also continuous, then the chi-square is not a best way to achieve the objectives of the study.

Table 4.9 Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.	Exact Sig.
Interval by Interval	Pearson's R	.451	.055	8.447	.000[c]	.[d]
Ordinal by Ordinal	Spearman Correlation	.412	.054	7.560	.000[c]	.[d]
N of Valid Cases		281				

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

d. Cannot be computed because there is insufficient memory.

From the above results I settle for correlation model to know the relation between the two and to test then test the z-score.

Table 4.10 Correlations

Control Variables			SUBSTANCE USE	EVER USED SUBSTANCE	BDI SCORING
-none-[a]	SUBSTANCE USE	Correlation	1.000	-.337	.445
		Significance (2-tailed)	.	.000	.000
		Df	0	276	276
	EVER USED SUBSTANCE	Correlation	-.337	1.000	-.065
		Significance (2-tailed)	.000	.	.277
		Df	276	0	276
	BDI SCORING	Correlation	.445	-.065	1.000
		Significance (2-tailed)	.000	.277	.
		Df	276	276	0
BDI SCORING	SUBSTANCE USE	Correlation	1.000	-.345	
		Significance (2-tailed)	.	.000	
		Df	0	275	
	EVER USED SUBSTANCE	Correlation	-.345	1.000	
		Significance (2-tailed)	.000	.	
		Df	275	0	

a. Cells contain zero-order (Pearson) correlations.

From the above diagram one can note that if we have no control variable then we have a positive correlation of 0.445, and when BDI scoring is a control variable then substance use is 0.000 thus there is no correlation, this means that we will reject our null hypothesis and conclude that there is indeed a statistical significance relationship between different levels of depression and substance use among students of tertiary institutions in Taita Taveta County.

The last test that can be used in the linear regression model as shown below

$y=\beta_0 + \beta_1 x + \varepsilon$

Table 4.11 Descriptive statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
SUBSTANCE USE	12.25	6.251	281
BDI SCORING	24.22	11.082	281

Table 4.12 Chi-square test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	171.881[a]	98	.000
Likelihood Ratio	111.242	98	.170
N of Valid Cases	278		

From the chi-square test results, there was a statistically significant relationship between depression and substance abuse among students in tertiary institutions in Taita Taveta County ($\chi = 171.88$, $p = 0.000$). An additional test was conducted to check the strength of this relationship. Results are as given below.

Table 4.13 Strength of relationship

		Value	Approx. Sig.
Nominal by Nominal	Phi	.786	.000
	Cramer's V	.556	.000
N of Valid Cases		278	

Phi and Cramer's V are both tests of the strength of association between two variables. A value of more than 0.25 is considered to mean a very strong relationship between variables. From the results, Phi = 0.786, p = 0.000 and Cramer's V = 0.556, p = 0.000. Therefore, depression and substance abuse have a very strong association.

Table 4.14 Correlations

		SUBSTANCE USE	BDI SCORING
Pearson Correlation	SUBSTANCE USE	1.000	.451
	BDI SCORING	.451	1.000
Sig. (1-tailed)	SUBSTANCE USE	.	.000
	BDI SCORING	.000	.
N	SUBSTANCE USE	281	281
	BDI SCORING	281	281

Table 4.15 ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2227.970	1	2227.970	71.345	.000[b]
	Residual	8712.593	279	31.228		
	Total	10940.562	280			

a. Dependent Variable: SUBSTANCE USE

b. Predictors: (Constant), BDI SCORING

Table 4.16 Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	BDI SCORING
1	1	1.910	1.000	.05	.05
	2	.090	4.597	.95	.95

a. Dependent Variable: SUBSTANCE USE

Table 4.17 Collinearity Statistics

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	6.084	.802		7.581	.000	4.504	7.663					
BDI SCORING	.255	.030	.451	8.447	.000	.195	.314	.451	.451	.451	1.000	1.000

a. Dependent Variable: SUBSTANCE USE

This means that the regression equation is

Y=6.084 + 0.255x.

Table 4.18 Residuals Statistics

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	6.08	21.10	12.25	2.821	281
Residual	-18.302	12.916	.000	5.578	281
Std. Predicted Value	-2.186	3.138	.000	1.000	281
Std. Residual	-3.275	2.311	.000	.998	281

a. Dependent Variable: SUBSTANCE USE

The above shows that in deed there is a positive relation of 0.255 between Depression level and Substance use, thus the more the Depression level the more the substance use.

4.3.2.1 Interaction of Intervening Variables

A logistic regression analysis was further conducted to check whether the intervening variables of gender, age, marital status, category of institution, and place of

residence have an impact on the relationship between depression and substance abuse. Results from the logistic regression returned different values of the Akaike Information Criterion (AIC) between the first model without intervening variables and the second model with intervening variables. The first model had an AIC = 298.19, while the second model had an AIC = 285.78. This means that the second model is better in explaining the relationship between depression and substance abuse among students in tertiary institutions.

Model summary results for the second model are as given in table 4.19

Table 4.19 Interaction of demographic variables

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	-0.372	0.759	-2.101	0.033
Depression	0.030	0.015	2.040	0.041
Gender	-0.516	0.323	-1.599	0.011
Age	-0.0507	0.044	-1.285	0.019
Marital status	-0.254	0.433	-0.585	0.049
Institution category	0.092	0.481	0.191	0.848

The results in indicate that the relationship between depression and substance abuse is influenced by gender (z = -1.599, p = 0.011), age (z = -1.285), and marital status (z = -0.585, p = 0.049). In this case, findings indicated that females are more prone to substance abuse due to depression than males, substance abuse as a result of depression decreases with increase in age, while married individuals are less likely to engage in substance abuse as a result of depression.

Results under this section confirm that there is a significant relationship between depression and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The key informants were also asked about the relationship between depression and substance abuse, as stated in the following table:

Table 4.20 Relationship Between Depression and Substance Use

RESPONDENT	POSITION	REMARKS
K1	MATRON	Most of them use substances to escape family issues… use drugs to escape love frustrations… pressure of academic work or fee problems,"
K2	PRINCIPAL	There is a high level of relationship between substance abuse and depression… depression cases are traced back to the abuse of drugs most times
K3	TUTOR IN CHARGE OF COUNSELING	Drug related conditions cause depression then withdrawal… college programs are not sufficient to handle depression…," Guidance and counselling HOD.
K4	DEAN OF STUDENTS	The cases of riots, assault, extreme drunkenness and use of bangi [bhang] is caused by factors such as love relationships, exams, family issues, finances and other stresses which they cannot handle.

4.3.4 Intervention Measures to Prevent Depression among Students

Responses form key informant interviews were used to inform intervention measures that should be put in place to prevent depression among students. Several interventions were proposed. To begin with, the tertiary institutions should hire fulltime

counsellors to offer continuous guidance and counselling services to students. Furthermore, tertiary institutions should invest in guidance and counseling clubs to support students in a bid to fight depression and substance abuse. It was also suggested that lecturers and other institutions' staff should offer constant emotional and mental support to students to avoid cases of substance abuse and depression.

Staff working in tertiary institutions should be sufficiently trained on how to handle depression and substance abuse. Students should also be continually engaged in support programs during their stay in institutions. Institutions should be keen on instilling strict rules and regulations to monitor the students' stay during study. The findings also show that staff in tertiary institutions should have regular meetings with students to address illicit behaviors such as the use of substances.

The KII also indicated that there is a big capacity and infrastructure gap in the staff and the institutions where the students are handled. To begin with Tutors in charge of Counseling had not undergone professional counseling course except one who has done educational psychology. There were also no induction courses done before they assume those positions of counseling students or handling personal affairs of students. They were also overburdened with the teaching load, which is what the employer, Technical and Vocational Education and Training Authority (TVETA), pays them for. There are no counseling rooms and students are counselled in the offices or in open spaces. This discourages them from seeking counseling services.

4.3.5 Pilot Testing Results

Here is the data and findings from the Pilot exercise.

Taveta Technical and Vocational Training College Data Analysis

In this chapter, I presented the estimations and interpretations of the same. First, I'll present the descriptive statistics using ordinary least square regression, and this was the output:

Table 4.21 Pilot Testing Results

	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
BDI SCORING	3	11	3	14	9.67	3.383	5.859
SUBSTANCE USE	3	13	2	15	7.67	3.844	6.658
Valid N (listwise)	3						

Table 4.22 Case Processing Summary

Case Processing Summary							
	BDI SCORING	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
SUBSTANCE USE	3	1	100.0%	0	0.0%	1	100.0%
	12	1	100.0%	0	0.0%	1	100.0%
	14	1	100.0%	0	0.0%	1	100.0%

The graph below shows the stem and leaf diagram for relation between BDI scoring and substance abuse.

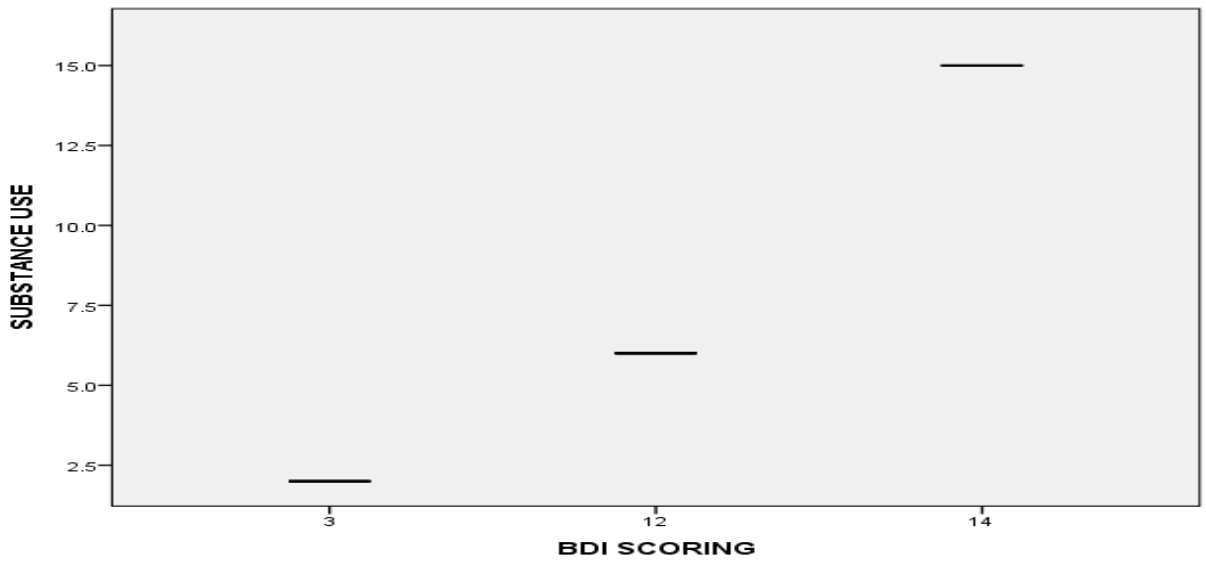

Figure 4.8 Relation between BDI scoring and substance abuse

From the graph one can note that substance use and BDI scoring are directly proportional. The null hypothesis is that there is statistically no relationship between different levels of depression (BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

Using the chi-square test of independence such that:

H_0: BDI=SUBSTANCE USE against

H_1: BDI≠SUBSTANCE USE

Table 4.23 BDI Scoring and substance use

BDI Scoring * Substance Use Cross-tabulation					
Count					
		SUBSTANCE USE			Total
		2	6	15	
BDI SCORING	3	1	0	0	1
	12	0	1	0	1
	14	0	0	1	1
Total		1	1	1	3

Table 4.24 Chi-square tests

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.000[a]	4	.199
Likelihood Ratio	6.592	4	.159
Linear-by-Linear Association	1.416	1	.234
N of Valid Cases	3		

a. 9 cells (100.0%) have expected count less than 5. The minimum expected count is .33.

From the above results and since the independent variable is Substance abuse is continuous and the dependent variable which is BDI count is also continuous, then the chi-square is not a best way to achieve the objectives of the study. One can look at the 2-sided significance of the chi-square test and note that both the tests are significant since at 95% level of confidence since they are greater than 0.05, however, more tests can be done to ascertain the relationship.

Table 4.25 Correlations

Correlations			
		BDI SCORING	SUBSTANCE USE
BDI SCORING	Pearson Correlation	1	.842
	Sig. (2-tailed)		.363
	Sum of Squares and Cross-products	68.667	65.667
	Covariance	34.333	32.833
	N	3	3
SUBSTANCE USE	Pearson Correlation	.842	1
	Sig. (2-tailed)	.363	
	Sum of Squares and Cross-products	65.667	88.667
	Covariance	32.833	44.333
	N	3	3

From the above diagram one can note a positive correlation of 0.842, and 0.363 significance at 95%, which is greater than 0.05 this means that we will reject our null hypothesis and conclude that there is indeed a statistical significance relationship between different levels of depression and substance use among students of tertiary institutions in Taita Taveta County, Kenya.

The last test that can be used is linear regression model as shown below:

$$y=\beta_0 + \beta_1 x + \varepsilon$$

Table 4.26 Values Entered/Removed

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	SUBSTANCE USE[b]	.	Enter

a. Dependent Variable: BDI SCORING

b. All requested variables entered.

Table 4.27 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.708	.416	4.476

a. Predictors: (Constant), SUBSTANCE USE

Table 4.28 Analysis of Variance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.633	1	48.633	2.428	.363[b]
	Residual	20.034	1	20.034		
	Total	68.667	2			

a. Dependent Variable: BDI SCORING

b. Predictors: (Constant), SUBSTANCE USE

Table 4.29 Coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.989	4.467		.893	.536
	SUBSTANCE USE	.741	.475	.842	1.558	.363

Dependent Variable: BDI SCORING

It is worth noting that all analysis and calculations have been generated in SPSS. The findings show that there was a positive relationship between depression levels and substance abuse, such that the more the depression the more the substance abuse.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of the results as per the title, research objectives, summary of the findings and conclusions derived from the findings and discussion. The chapter closes with the recommendations as per the objectives and suggestions of areas of further study. The purpose of this study was to examine the relationship between levels of depression and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The main tools were BDI (Beck's Depression Inventory) and ASSIST (Alcohol, Smoking and Substance Involvement Screening Test). There was a questionnaire for students and a questionnaire for staff in charge of students' welfare in the tertiary institutions targeted.

5.2 Discussions

This section presents the discussions of the study's findings in the results and analysis of data as presented in Chapter Four of this study and according to the objectives which were to determine the prevalence of depression among students of tertiary institutions, to explore the prevalence of substance use among students of tertiary institutions, to examine the relationship between the different levels of depression and substance use among students of tertiary institutions, in Taita Taveta County. This was the main objective which was examined using a hypothesis. The hypothesis findings answered all the research questions for the first two objectives.

5.2.1 To Determine the Prevalence of Depression Among Students of Tertiary Institutions

From the findings of the study, majority students in tertiary institutions have moderate depression, while some of them have severe depression. The reasons for depression have been given as love relationships, exams, family issues, financial, and peer pressure demands among others, by the staff who responded to Key Informant Interview questionnaire.

Th researchers' personal opinion, and from the other findings about the residence of these students, is that the social environment in which they reside is also conducive for stress and depression. The social environment includes their neighbors in their rented or family premises, their roommates, their classmates and teachers/ tutors, and all the people with whom they interact with closely in the course of their studies. The findings are line with Malone (2013) who found out that a large number of young people suffer from depression and the consequences have been shown to be detrimental to their well-being. Additionally, Chinawa et al., (2015) found out that majority of adolescents attending schools are diagnosed with depressive symptoms. The gap here was that Chinawa et al, carried out a study among secondary school students. The researcher in this study carried out a study among tertiary institution students. Surprisingly and as expected the results are the same, that adolescents are suffering from depression. Njogu and Obogo (2017) used BDI and DAST (Drug Abuse Screening Test while the researcher used BDI and ASSIST. The results show close similarities despite the differences in the demographic characteristics of the target populations. In both case the target is in the youth bracket and in both cases there is a statistical relationship between depression and substance use.

From a logistic regression analysis, it was found out that depression is a statistically significant predictor of substance use among students in tertiary institutions**.** This finding was seconded by a study conducted by Njoku & Obogo (2017) which concluded that there was a statistically significant relationship between depression and drug abuse. This was further confirmed by Grant (2016), who found out that prevalence rates of substance use are almost twice as high among individuals with severe depression compared to the general population. This is proven true by the statistics from the respondents which showed that the more the depression level the higher the substance use.

The comorbidity of depression and substance use was established among students of tertiary institutions in Taita Taveta County.

The data in Table 4.5; above shows that there is prevalence of depression as brought out by the BDI tool. From the BDI results, majority of the interviewed students, 33.5%, have moderate depression. 23.3% of them have severe depression, 15.2% have borderline clinical depression, 14.8% have mild mood disturbance, and 8.6% have normal ups and downs, while 4.7% of them have severe depression. This is proof of prevalence of Depression amongst students of tertiary institutions in Taita Taveta County, Kenya.

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It is worth noting that Borderline Depression, Moderate Depression and Severe Depression levels are pathological. This is indicative of the fact that majority of these students are at the dangerous level of depression which will physiologically affect their lives above the psychosocial negative impact in their lives.

The reasons for depression have been given as love relationships, exams, family issues, financial, and peer pressure demands among others, by the staff who responded to Key Informant Interview questionnaire. The researcher's personal opinion as a researcher, and from the other findings about the residence of these students is that the social environment in which they reside is also conducive for stress and depression. The residences of students should be devoid of stress, anxiety and depression for it not to attract substance use behaviors.

5.2.2 Prevalence of Substance Use

The study findings revealed that students in tertiary institutions consume alcoholic beverages, cannabis, and tobacco products. Othieno et al., (2014) confirmed this in a study that found out that majority of youths are involved in substance use. Further, Cheloti & Gathumbi (2016) found out that majority of the young people started abusing drugs in tertiary institutions.

The students were asked to indicate which substances they have ever used in their lives. From the results, the students confirmed to have consumed alcoholic beverages (mean = .55, SD = .498); cannabis (.52, SD = 486); and tobacco products (mean = .51, SD = .501). Alcohol, marijuana, and tobacco products top the list of the most commonly used substances according to the results generated after applying ASSIST Tool to the respondents. This statistically shows that substance use is prevalent amongst students of tertiary institutions in Taita Taveta County. Another study in

Nigeria (2017) showed the relationship between depression and drug abuse among students, only that it was among school students and this one is in tertiary institutions. The trend is however the same and the target population is in the same or similar age group. The researcher in Nigeria used BDI and DAST (Drug Abuse Screening Test) while this researcher used BDI and ASSIST (Smoking, substance Involvement Screening Test). The difference is the second tool used and the target population, but the results are similar in that they focus on depression as the cause of drug abuse or use. In another similar study in South Africa, Amina, et al; studied the association between substance use and common mental disorders in young adults. The results were similar to these in the sense that the young people are getting involved in substance use because of mental disorders, among them is depression.

5.2.3 Relationship between Depression Levels and Substance Abuse

Insights from chi-square tests results revealed that depression influences the usage of alcoholic beverages, cannabis, tobacco products, cocaine, inhalants and hallucinogens. Johnston et al (2014) found out that rates of cigarette use, binge drinking, and marijuana use are relatively high as a result of depression among today's youth. Substance abuse as a result of depression decreases with increase in age, while married individuals are less likely to engage in substance abuse as a result of depression. This explains the trend and phenomena of the interaction between depression, self-medication, and substance use. The initial reaction is for an individual to use substance to alter the bad, low or oscillating moods. Thereafter it becomes a habit which results in substance use disorder, no wonder the comorbidity and the proportional relationship between the levels of depression and the substance use. Just as Johnston et al stated, the

substances of use by the respondents follow that trend of alcohol, tobacco and marijuana as the most used.

From the graph one can note that substance use and BDI scoring are directly proportional. The null hypothesis is that there is statistically no relationship between different levels of depression (BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The depression levels are proportional to substance use, the higher the depression BDI scores the higher the substance use ASSIST scores. The BDI scores are concurrent to the Substance use scores.

5.2.4 Intervention Measures to Prevent Depression among Students

Several intervention measures were proposed in a bid to curb substance abuse among students. They include: offering continuous guidance and counselling services to students through fulltime counsellors, offering constant emotional and mental support to students, trained staff in tertiary institutions on how to handle depression and substance abuse, continually engaging in support programs, instilling strict rules and regulations to monitor students' activities, and holding regular meetings with students to address illicit behaviors such as the use of substances.

Nyarangi (2011), recommended that the government should consider employing full time counsellors in the institutes of technology to allow for constant and fulltime access of the students to the counsellors. In Kenya, the Ministry of Education (MOE) in has laid out guidelines on how institutions should set up counselling centers in tertiary institutions. Therefore, tertiary institutions should fully accommodate the changes, to reduce depression and substance abuse. The researcher is of the opinion, based on the findings from staff who responded to the KII questionnaire, that the management

boards, administration, and MOE are not giving mental health in institutions of learning the priority and attention it deserves. Mental health professionals should be hired, on full time basis where possible, to manage the psycho-social issues of students in the students' welfare dockets.

5.3 Summary of Main Findings

This section presents a summary of the main study findings. This is presented in line with the objectives of the study.

5.3.1 Objective One: Prevalence of Depression

From the BDI results, majority of the interviewed students, 33.5%, have moderate depression. 23.3% of them have severe depression, 15.2% have borderline clinical depression, 14.8% have mild mood disturbance, and 8.6% have normal ups and downs, while 4.7% of them have severe depression. Similar results were obtained from the pilot study which was done at Taveta Technical and Vocational Training College.

When asked about how many cases depression among students they have handled and how they handled them, the key informants said that there only few cases, between two and 10. They did so by counselling and guiding the students, engaging the students' minds through music and use of internet in friendly manner and in some cases medication where antidepressants were prescribed. They also did so by forming groups. Some of the issues they handled were chronic depression, addiction to substances, hysteria and, defense mechanism.

The key informants when asked about the causes of depression pointed out that the main causes of depression were financial, lack of fees and upkeep, poor relationships between student to student or student to teachers, alcoholism, abuse of

drugs, family issues especially parents' marital issues, social issues, love and relationship issues, financial management and money issues. Other important factors were: family background, relationships, peer pressure, drugs and alcoholism, learning environment and exam related issues among issues.

5.3.2 Objective Two: Prevalence of Substance Use

In this sub-section, prevalence of substance use according to the modified ASSIST tool were assessed. To begin with, the students were asked to indicate which substances they have ever used in their lives. From the results, the students confirmed to have consumed alcoholic beverages (mean = .55, SD = .498); cannabis (.52, SD = 486); and tobacco products (mean = .51, SD = .501).

When asked how often have they ever used the substances mentioned above, the students indicated that they have consumed them weekly (mean = 1.88, SD = 1.475). On how often they have had a strong desire or urge to use, they indicated that they have had a strong desire weekly (mean = 1.96, SD = 1.491). The use of substances has led to health, social, legal or financial (*money*) problems weekly for the students (mean = 1.67, SD = 1.518); and in each week, they have failed to do what was normally expected of them because of using of substances (mean = 1.54, SD = 1.500).

From the results, friends and relatives have expressed concerns due to the students' substance abuse (mean = .77, SD = .820). The students have ever tried to control, cut down or stop using substances (mean = .76, SD = .808). Lastly, interviewed students indicated that they have used injectable drugs, but not in the past three months (mean = .58, SD = .777).

The key informants were asked to state the commonly used substances by students. They mentioned: Marijuana, Bhang, cigarettes, alcohol, tobacco, Kuber,

prescription drugs, hard drugs. The most mentioned substances were Marijuana and alcohol.

5.3.3 Objective Three: Relationship between Depression Levels and Substance Abuse

The researcher sought to find out whether depression influences substance use among students of tertiary institutions in Taita Taveta County, Kenya. The test was conducted at an alpha = 0.05 level of significance. The Null Hypothesis was: H_0: There is statistically no significant relationship between levels of depression (according to BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The same tests were done on the pilot target population (Taveta Technical and Vocational Training College) which indicated the same outcomes in terms of the relationship between depression and substance use.

In this objective, the estimations and interpretations of both the BDI and ASSIST scores were presented. Descriptive statistics using ordinary least square regression were used. The findings show that substance use and BDI scoring are directly proportional. The null hypothesis is that there is statistically no relationship between different levels of depression (BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya. Correlation analysis shows that if the researcher did not have control variable then we have a positive correlation of 0.445, and when BDI scoring is a control variable then substance use is 0.000 thus there is no correlation, this means that we will reject our null hypothesis and conclude that there is indeed a statistical significance relationship between different levels of depression and substance use among students of tertiary institutions in Taita Taveta County.

From the chi-square test results, there was a statistically significant relationship between depression and substance abuse among students in tertiary institutions in Taita Taveta County ($\chi = 171.88$, $p = 0.000$). An additional test was conducted to check the strength of this relationship.

Phi and Cramer's V are both tests of the strength of association between two variables. A value of more than 0.25 is considered to mean a very strong relationship between variables. From the results, Phi = 0.786, p = 0.000 and Cramer's V = 0.556, p = 0.000. Therefore, depression and substance abuse have a very strong association.

A logistic regression analysis was further conducted to check whether the intervening variables of gender, age, marital status, category of institution, and place of residence have an impact on the relationship between depression and substance abuse. Results from the logistic regression returned different values of the Akaike Information Criterion (AIC) between the first model without intervening variables and the second model with intervening variables. The first model had an AIC = 298.19, while the second model had an AIC = 285.78. This means that the second model is better in explaining the relationship between depression and substance abuse among students in tertiary institutions.

Model summary results for the second model shows indicate that the relationship between depression and substance abuse is influenced by gender (z = -1.599, p = 0.011), age (z = -1.285), and marital status (z = -0.585, p = 0.049). In this case, findings indicated that females are more prone to substance abuse due to depression than males, substance abuse as a result of depression decreases with increase in age, while married individuals are less likely to engage in substance abuse as a result of depression.

Results under this section confirm that there is a significant relationship between depression and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The key informants were also asked about the relationship between depression and substance abuse. The findings show that most of the students use substances to escape family issues, to escape love frustrations and to escape pressure of academic work or fee problems. The findings show that there was a high level of relationship between substance abuse and depression. In this regard, depression cases could be traced back to the abuse of drugs most times. Drug related conditions also caused depression then withdrawal. However, college programs were not sufficient to handle depression.

5.3.4 Intervention Measures to Prevent Depression among Students

Responses form key informant interviews were used to inform intervention measures that should be put in place to prevent depression among students. Several interventions were proposed. To begin with, the tertiary institutions should hire fulltime counsellors to offer continuous guidance and counselling services to students. Furthermore, tertiary institutions should invest in guidance and counseling clubs to support students in a bid to fight depression and substance abuse. It was also suggested that lecturers and other institutions' staff should offer constant emotional and mental support to students to avoid cases of substance abuse and depression.

Staff working in tertiary institutions should be sufficiently trained on how to handle depression and substance abuse. Students should also be continually engaged in support programs during their stay in institutions. Institutions should be keen on instilling strict rules and regulations to monitor the students' stay during study. The

findings also show that staff in tertiary institutions should have regular meetings with students to address illicit behaviors such as the use of substances.

The KII also indicated that there is a big capacity and infrastructure gap in the staff and the institutions where the students are handled. To begin with Tutors in charge of Counseling had not undergone professional counseling course except one who has done educational psychology. There were also no induction courses done before they assume those positions of counseling students or handling personal affairs of students. They were also overburdened with the teaching load, which is what the employer, Technical and Vocational Education and Training Authority (TVETA), pays them for. There are no counseling rooms and students are counselled in the offices or in open spaces. This discourages them from seeking counseling services. The researcher is certain that the same recommendations would apply for the target population of the pilot study.

5.4 Conclusion

This section presents the conclusions of the study findings which are based on the objectives of the study.

5.4.1 Prevalence of Depression

There was high prevalence of depression among the students interviewed. With results from BDI showing that majority of the interviewed students, 33.5%, have moderate depression. 23.3% of them have severe depression, 15.2% have borderline clinical depression, 14.8% have mild mood disturbance, and 8.6% have normal ups and downs, while 4.7% of them have severe depression. The main causes of depression were financial, lack of fees and upkeep, poor relationships between student to student

or student to teachers, alcoholism, abuse of drugs, family issues especially parents' marital issues, social issues, love and relationship issues, financial management and money issues. Depression also stemmed from family background, relationships, peer pressure, drugs and alcoholism, learning environment and exam related issues among issues.

5.4.2 Prevalence of Substance Use

According to the modified ASSIST tool, the students indicated that the main substances that the students had consumed were alcoholic beverages (mean = .55, SD = .498); cannabis (.52, SD = 486); and tobacco products (mean = .51, SD = .501). The commonly used substances by students according to key informants were Marijuana, Bhang, cigarettes, alcohol, tobacco, kuberr, prescription drugs, hard drugs. Most of the students were consuming substances on a weekly basis (mean = 1.88, SD = 1.475). Most of them also had a strong desire weekly to use substances (mean = 1.96, SD = 1.491). The use of substances has led to health, social, legal or financial (*money*) problems weekly for the students (mean = 1.67, SD = 1.518); and in each week, they have failed to do what was normally expected of them because of using of substances (mean = 1.54, SD = 1.500). This had led to expression of concern among friends and relatives due to the students' substance abuse (mean = .77, SD = .820). The students had tried to control, cut down or stop using substances (mean = .76, SD = .808). They also indicated that they had used injectable drugs, but not in the past three months (mean = .58, SD = .777).

5.4.3 Relationship between Depression Levels and Substance Abuse

The researcher sought to find out whether depression influences substance use among students of tertiary institutions in Taita Taveta County, Kenya. The test was

conducted at an alpha = 0.05 level of significance. The Null Hypothesis was: H_0: There is statistically no significant relationship between levels of depression (according to BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya. The findings show that substance use and BDI scoring are directly proportional. The null hypothesis is that there is statistically no relationship between different levels of depression (BDI scoring) and substance use among students of tertiary institutions in Taita Taveta County, Kenya. Correlation analysis shows that if the researcher did not have control variable then we have a positive correlation of 0.445, and when BDI scoring is a control variable then substance use is 0.000 thus there is no correlation, this means that we will reject our null hypothesis and conclude that there is indeed a statistical significance relationship between different levels of depression and substance use among students of tertiary institutions in Taita Taveta County.

5.4.4 Intervention Measures to Prevent Depression among Students

Several interventions were proposed by the key informants. These include hiring fulltime counsellors, investing in guidance and counseling clubs, encouraging lecturers and other institutions' staff to offer constant emotional and mental support to students to avoid cases of substance abuse and depression, sufficient training of staff working in tertiary institutions on how to handle depression and substance abuse, encouraging students to continually engaged in support programs during their stay in institutions. There should be strict rules and regulations to guide the students' stay during study.

5.5 Recommendations

From the research, there are several recommendations that can be made:

5.5.1 Prevalence of Depression

There should be specific interventions aimed at handling different types of depression among students. The causes of depression should be promptly identified and mitigated.

5.5.2 Prevalence of Substance Use

Availability of drugs and peddling of drugs in tertiary institutions should be checked. Tertiary institutions should invest heavily in support programs and make them mandatory. This is especially important in engaging students during their free time and building their capacities in life skills, proper leisure activities that reduce stress and depression, the hazards of substance use and addictions.

5.5.3 Relationship between Depression Levels and Substance Abuse

Staff in tertiary institutions should be trained on how to handle depression and substance abuse among students. This is key since the staff interact with students for long time during their stay in institutions, and might therefore prevent cases of depression and substance abuse through effective counselling techniques.

There should be regular streamlined talks and presentations from mental health and psycho-social support experts to educate students from recognized government agencies and bodies like Kenya Counseling and Psychological Association (KCPA), NACADA, Ministry of Youth and Social Services, and the like. These will give counseling, awareness, and sensitization on issues that the students face, but by an outsider whom they can easily take seriously and may confide in more than their regular staff.

5.5.4 Intervention Measures to Prevent Depression among Students

The government, through the county government administrations, should employ full time mental health professionals like, counsellors and psychologists, in tertiary institutions to allow for constant and fulltime access to counselling programs and attention to mental health issues and challenges that the students face in tertiary institutions. Enforcement of college rules should be enhanced with the participatory approach where students are sensitized about the need to be careful and responsible in their lives instead of fighting the college authority on issues to do with their welfare and wellbeing. Staff in institutions, parents and guardians should work on getting close relationships with the students. This way, students can share their struggles, fears and interests clearly which would make them be guided into the right directions.

Parents, guardians, Faith Based Organizations and Non-Governmental Organizations should work with other stake holders and engage mental health practitioners like counseling psychologists, clinical psychologists and psychiatrists to address the issue of depression and substance use in tertiary institutions.

Tertiary institutions should endeavor to adopt a variety of ways and innovative tactics to address the issue of substance abuse, including offering after-college programs, life-skills training and drug education in the curricula. Helping parents become better informed by providing with counseling skills and ability to identify problem behaviors for early intervention, and promptly referring students (adult children) to mental health care professionals for assessment and intervention. Institution-based mental health centers should have the capacity to counsel students who are in need of such treatment.

5.6 Further Research

Further studies should be done in the areas of the relationship between depression and other maladaptive behaviors amongst students of post-secondary education, and also other factors that enhance substance use among tertiary institutions' students, apart from depression levels.

There is need for a study to be conducted to bring out the interaction between the current Covid-19 situation and depression, to check whether this increases substance abuse among students, particularly during this unprecedented and unexpected break to education for almost one year.

Several interventions have been proposed in this study. In order to confirm their significance in reducing depression and substance abuse, several studies should be conducted with the aim to test the interventions related to the relationship between depression and substance use in youth and similar populations.

Proposals for funding of research-based projects in different counties to be carried out with an aim of reducing depression and substance abuse among students in tertiary institutions and if possible, universities in Kenya.

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Appendix I: Students' Questionnaire

Dear respondent, I am a student of Master of Arts in Counselling Psychology Degree. I am required to carry out a research on "**The relationship between depression levels and substance use among students of tertiary institutions in Taita Taveta County".**

Please fill in without indicating your name.

Section 1: Demographic Information

1. Fill the following

a) Gender: Male [ ] Female [ ] √*Please tick in the bracket*

b) Age ……………………………………………………….……………

c) Course …………………………………………………………………...

d) Marital status: Married [ ] Single [ ] Other (*state*) --------------------

2. What category of institutions does your institution lie? Public [ ] or Private [ ]

3. Where do you stay while studying? State ,,

4. What do you normally do when you feel stressed, anxious or depressed while in college or at home? Please state. ,,

5. Have you ever used a substance to get relief from emotional/psychological discomfort or stress/depression? Yes [ ] No [ ] √ *Please tick.*

If yes, how many times in a week or month? (*Please state*.)

6. Do you think depression can make a person use substances like alcohol, tobacco/cigarettes, marijuana or other drugs? Yes [ ] No [ ] √ *Please tick*

7. Any other information you consider relevant and important about yourself for the purpose of this study? **____**

Appendix III: Modified Beck's Depression Inventory

The following statements assess feelings about yourself. Carefully read the statements and **tick** either **0, 1, 2 or 3** before your selected statement**.**

Question 1

0 I do not feel sad
1 I feel sad
2 I am sad all the time and I can't snap out of it
3 I am so sad and unhappy that I can't stand it

Question 2

0 I am not particularly discouraged about the future
1 I feel discouraged about the future
2 I feel I have nothing to look forward to
3 I feel the future is hopeless and that things cannot improve

Question 3

0 I do not feel like failure
1 I feel I have failed more than the average person

2 As I look back on, my life, all I can see is a lot of failures
3 I feel I am a complete failure as a person

Question 4

0 I get as much satisfaction out of things as I used to
1 I don't enjoy things the way I used to
2 I don't get real satisfaction out of anything anymore
3 I am dissatisfied or bored with everything

Question 5

0 I don't feel particularly guilty
1 I feel guilty a good part of the time
2 I feel quite guilty most of the time
3 I feel guilty all of the time

Question 6

0 I don't feel I am being punished
1 I feel I may be punished
2 I expect to be punished
3 I feel I am being punished

Question 7

0 I don't feel disappointed in myself
1 I am disappointed in myself
2 I am disgusted with myself
3 I hate myself

Question 8

0 I don't feel I am any worse than anybody else
1 I am critical of myself for my weaknesses or mistakes
2 I blame myself all the time for my faults
3 I blame myself for anything bad that happens

Question 9

0 I don't have any thoughts of killing myself
1 I have thoughts of killing myself but I would not carry them out
2 I would like to kill myself
3 I would kill myself if I had the chance

Question 10

0 I don't cry any more than usual
1 I cry more now than I used to
2 I cry all the time now
3 I used to be able to cry, but now I can't cry even though I want to

Question 11

0 I am no more irritated by things than I ever was
1 I am slightly more irritated now than usual
2 I am quite annoyed or irritated a good deal of the time
3 I feel irritated all the time

Question 12

0 I have not lost interest in other people
1 I am less interested in other people than I used to be
2 I have lost most of my interest in other people

3 I have lost all of my interest in other people

Question 13

0 I make decisions about as well as I ever could
1 I put off making decisions more than I used to
2 I have greater difficulty in making decisions more than I used to
3 I can't make decisions at all anymore

Question 14

0 I don't feel that I look any worse than I used to
1 I am worried that I am looking old or unattractive
2 I feel there are permanent changes in my appearance that make me look unattractive
3 I believe that I look ugly

Question 15

0 I can work about as well as before
1 It takes an extra effort to get started at doing something
2 I have to push myself very hard to do anything
3 I can't do any work at all

Question 16

0 I can sleep as well as usual
1 I don't sleep as well as I used to
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
3 I wake up several hours earlier than I used to and cannot get back to sleep

Question 17

0 I don't get more tired than usual
1 I get tired more easily than I used to
2 I get tired from doing almost anything
3 I am too tired to do anything

Question 18

0 My appetite is no worse than usual
1 My appetite is not as good as it used to be
2 My appetite is much worse now
3 I have no appetite at all anymore

Question 19

0 I haven't lost much wait, if any, lately
1 I have lost more than five pounds
2 I have lost more than ten pounds
3 I have lost more than fifteen pounds

Question 20

0 I am no more worried about my health than usual
1 I am worried about physical problems like aches, pains, upset stomach, constipation
2 I am very worried about physical problems and it's hard to think of much else
3 I am so worried about my physical problems that I cannot think of anything else

Question 21

0 I have not noticed any recent change in my interest in sex
1 I am less interested in sex than I used to be
2 I have almost no interest in sex
3 I have lost interest in sex completely

App. II: Modified Alcohol, Smoking and Substance Involvement Screening Test

Kindly read the statements carefully and **tick** your selected response		**Responses**
Q1	In your life, which of the following substances have you ever used?	
	a) Tobacco products (cigarettes, rollies, smokes, chewing tobacco, cigars)	**0** =no, **1** =yes
	b) Alcoholic beverages (beer, wine, spirits, home brew, RTD's)	**0** =no, **1** =yes
	c) Cannabis (marijuana, pot, weed, ganja, mary jay, grass, tinny)	**0** =no, **1** =yes
	d) Cocaine (coke, powder, crack)	**0** =no, **1** =yes
	e) Inhalants (BP, Shell, solvents, nitrous, glue bag, petrol, thinners)	**0** =no, **1** =yes
	f) Sedatives or sleeping pills (Downers, Valium, Serepax)	**0** =no, **1** =yes
	g) Hallucinogens (Party Pills, LSD, Acid, mushies, PCP)	**0** =no, **1** =yes
	h) Other drugs	**0** =no, **1** =yes
Q2	In the past 3 months, how often have you ever used the substances you mentioned (first drug, second drug, etc.)?	**0** =Never **1** =Once or twice **2** =Weekly **3** =Monthly **4** =Daily or almost daily
Q3	During the past 3 months, how often have you had a strong desire or urge to use (first drug, second drug, etc.)?	**0** =Never **1** =Once or twice **2** =Weekly **3** =Monthly **4** =Daily or almost daily
Q4	During the past 3 months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial (*money*) problems?	**0** =Never **1** =Once or twice **2** =Weekly **3** =Monthly **4** =Daily or almost daily
Q5	During the past 3 months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?	**0** =Never **1** =Once or twice **2** =Weekly **3** =Monthly **4** =Daily or almost daily
Q6	Has a friend or relative or anyone else ever expressed concern *(worry*) about your use of (first drug, second drug, etc.)?	**0** =No, never **1** =Yes, but not in the past 3 months **2** =Yes, in the past 3 months
Q7	Have you ever tried to control, cut down or stop using (first drug, second drug, etc.)?	**0** =No, never **1** =Yes, but not in the past 3 months **2** =Yes, in the past 3 months
Q8	Have you ever used any drug by injection? (non-medical use only)	**0** =No, never **1** =Yes, but not in the past 3 months **2** =Yes, in the past 3 months

Appendix III: Key Informant Interview (KII) Questionnaire

(FOR IN CHARGE OF STUDENTS' WELFARE AND COUNSELING OF STUDENTS)

Dear participants, I am a student at Africa Nazarene University, Master of Arts in Counselling Psychology degree. As a partial fulfillment for award of the degree, I am required to carry out a research on '**The Relationship between Depression Levels and Substance Use among Students of Tertiary Institutions in Taita-Taveta County'.**

You have been selected because of your position in this institution. We are not looking for answers regarding any particular student.

All comments and responses are confidential, and will only be used for the purposes of this research study. If you have any questions before we start, please ask.

Consent

I have discussed this study with the respondent, and answered all his/her questions in a language that he/she understands. I believe the respondent has understood this explanation and has voluntarily agreed to participate in the study.

_____ _____

Signature of respondent Date

A. Fill in the following

a) Position …… Gender ……

b) Responsibilities……

Objective 1: Prevalence of Depression and Substance Use.

i. What is the main cause of stress, anxiety and depression among your students? -------

ii. How many cases of depression among students have you had in the past one year, and how did you handle them?.....

iii. How common are cases of substance use among students in this institution in the past one year? ……

Objective 2: The Relationship between Different Levels of Depression and Substance Use

iv. Relationship between depression and substance abuse based on cases handled in this institution in the past one year, if any. ……

v. Have ever referred a student for further attention because of substance use or related mental conditions? ……..…

vi. Any other comment or information that you consider relevant or important for this study? ……

Objective 3: Intervention measures of Preventing Depression among Students

Please comment on the availability, condition and function of the following: (attach relevant documents, if any?)

vii. Counseling Room ……

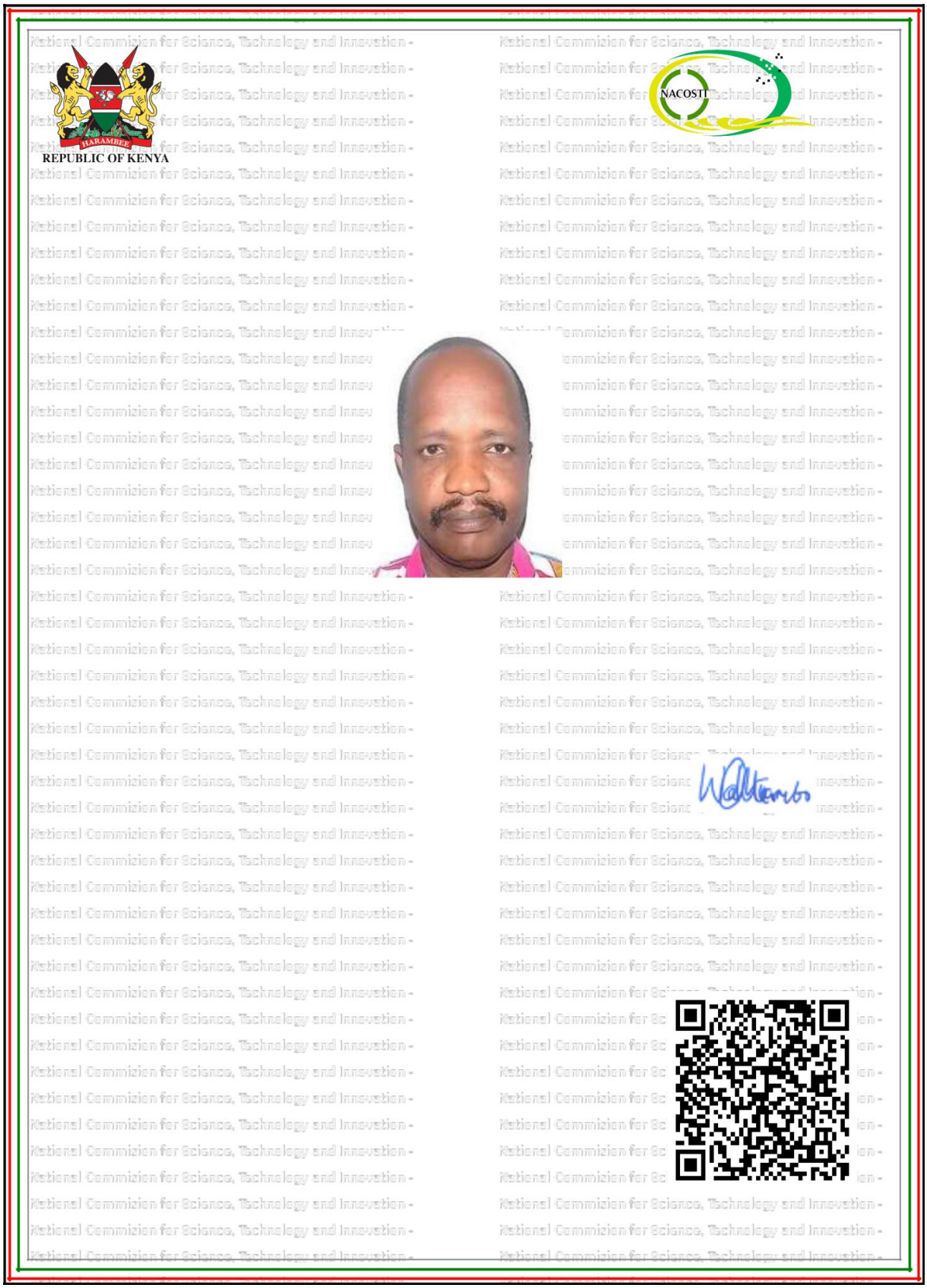
viii. Staff qualification, number and capacity to handle depression and substance use issues ……..

ix. Counseling programs and activities to address depression and substance use among students in the institution. ……

x. Intervention measures that should be put in place to prevent depression and substance use among students ……

Thank you for your time

Appendix IV: Research Permits



AFRICA NAZARENE
UNIVERSITY

10th March 2020

RE: TO WHOM IT MAY CONCERN

Mseri Lawman Lucas Mwanyika (**ISSO3EMCP001**) is a bonafide student at Africa Nazarene University. He has finished his course work in Master of Arts in Counseling Psychology and has defended his thesis proposal entitled: - ***"Relationship Between Levels of Depression and Substance Use among Students of Tertiary Institutions in Taita Taveta County, Kenya."***.

Any assistance accorded to him to facilitate data collection and finish his thesis is highly welcomed.

Prof. Rodney Reed
DVC, Academic & Student Affairs.

Appendix V: Research Approval Letters

Telegrams: "MEDTRAIN" Nairobi
TELEPHONE: NAIROBI 2725191, 2725711/14
Fax:2722907 Email: info@kmtc.ac.ke
Please address all correspondence to:
The Director
When replying please quote

KENYA MEDICAL TRAINING COLLEGE
P.O. BOX 30195-00100
NAIROBI

Ref: No. KMTC/ADM/74/VOL.V

Date 4th June, 2020

Mseri Lawrian L. Mwanyika,
Taita Taveta University
P.O Box 635 – 80300,
VOI
TEL: 0722684733

Dear Sir,

RE: PERMISSION TO COLLECT DATA AT KENYA MEDICAL TRAINING COLLEGE

Reference is made to your letter dated 30th May, 2020 requesting for permission to conduct research in KMTC Voi campus for your Masters Degree thesis.

The data collection tool for your proposal titled ***"The Relationship between Levels of Depression and Substance use among Students in Tertiary Institutions in Taita Taveta County, Kenya"*** has been reviewed and we are satisfied that no ethical issues will be violated among the respondents during the data collection process.

However should any unanticipated issues arise, you are requested to contact the research office.

Permission is therefore granted and upon completion of the study, you are requested to submit one (1) hard copy and soft copy of the research report to the Director's office.

Thank you.

EGLAH J. KIPLAGAT
For: CHIEF EXECUTIVE OFFICER

MINISTRY OF EDUCATION
STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL TRAINING

COAST INSTITUTE OF TECHNOLOGY

VOI CAMPUS
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Email: voicampuscit@yahoo.com/principal@cit.ac.ke
www.cit.ac.ke.

ISO 9001:2015 Certified

Our Vision: To Be A Centre Of Excellence For Education & Training In Science and Technology

Date: 17TH AUGUST, 2020

Mseri Lawrian L. Mwanyika
Taita/Taveta University
P.O Box 635-80300
Voi
Tel.:0722 684 733

Dear Sir,

RE: PERMISSION TO COLLECT DATA AT COAST INSTITUTE OF TECHNOLOGY

Reference is made to your request for permission to conduct research in Coast Institute of Technology.

The data collection tool for your proposal titled ***"The Relationship between levels of Depression and Substance use among Students in Tertiary institutions in Taita Taveta County, Kenya"*** has been reviewed and we are satisfied that no ethical issues will be contravened among the respondents during the data collection process.

Permission is hereby granted and upon completion of your study, you are requested to submit both soft and hard copies of the research to the Registrar's office.

Thank you.

MONIKOMBO G.W
REGISTRAR

TSAVO INSTITUTE OF TECHNOLOGY
P.O. BOX 244-80300, VOI – KENYA
CELL: 0721328576 / 0735371776
EMAIL: tsavoinstitute@gmail.com, www.tsavoinstitute.co.ke

MINISTRY OF HIGHER EDUCATION REG. NO.MOHEST/PC/1442/011

10/06/2020

Mseri Lawrian L. Mwanyika,
PO BOX 635-80300
Voi.
Tel. 0722684733

Dear Sir,

RE: PERMISSION TO COLLECT DATA IN OUR INSTITUTION

We refer to your letter dated 28th May 2020 in which you requested for permission to collect data at Tsavo Institute of Technology as part of your Masters Degree Thesis.

Your request has been assessed and approved. Should there be matters arising in the process, you are advised to contact the undersigned for further guidance.

Upon completion of the study, you are requested to avail a copy of the same to the institute for reference.

Yours faithfully,

SAMUEL MURIITHI
PRINCIPAL

PRINCIPAL
TSAVO INSTITUTE OF TECHNOLOGY
P. O. Box 244 -VOI, KENYA
10 JUN 2020
Tel: 0721 328576 / 0735 371776
Email: tsavoinstitute@gmail.com
Website: www.tsavoinstitute.co.ke

CATHOLIC ARCHDIOCESE OF MOMBASA

When replying please

Quote our ref:

And Date

Thy Kingdom come through teaching
ST. MARY'S TTC—BURA/TAITA
P.O BOX 130—80311, Ng'ambwa, Tel: **0720931118**
E-mail:stmaryburataita@yahoo.com

20/3/2020

To

MSERI LAWRIAN L. MWANYIKA

TAITA TAVETA UNIVERSITY

P.O.BOX 635-80300

VOI

Dear Sir,

REF: PERMISSION TO COLLECT DATA AT ST. MARY'S TEACHERS TRAINING COLLEGE

Greetings. I wish to refer to the above.

We received your request concerning permission to conduct research in our institution for your Masters Degree for a proposal titled ***"The relationship between levels of depression and substance use among students in tertiary institutions in Taita Taveta County, Kenya"***. Your target group are the students and you wish to interview a sample of them.

The institution has granted your request hoping that you will carry out this exercise with all ethical aspects observed. The administration will assist you with whatever you may need to accomplish your aim. We wish you all the best.

Yours Faithfully

E. Odumbe

Principal

Appendix VI: Taita Taveta County Map