FAMILY, PEER AND COLLEGE DOMAIN FACTORS AND SUBSTANCE USE AMONG FEMALE STUDENTS AT KMTC, NAIROBI AND THIKA CAMPUSES

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN COUNSELLING PSYCHOLOGY IN THE DEPARTMENT OF COUNSELLING PSYCHOLOGY OF AFRICA NAZARENE UNIVERSITY.

AUGUST 2020

DECLARATION

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

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EXAMINERS' SIGNATURES

I have examined this document and the thesis; it has met and exceeded the requirement for the degree sought, in addition,
the candidate has sufficiently defended the material presented
to merit the awarding of the degree of
Master of Arts in Counseling Psychology

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Internal examiner

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External examiner

DEDICATION

This thesis is dedicated to my daughter Cheryl and son Byron for their emotional support during the entire period of study and my father John for his encouragement and prayers through the writing process of this thesis.

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ABSTRACT

World drug report indicates growing accessibility to substances as a major world trend among ages 15 to 65 years. Globally, the use of substances by college students of all genders is a challenge and a public health concern. However, many studies on substance use focus on male students. This study had the purpose of assessing family, peer, and college domain factors and substance use among female students at Thika and Nairobi campuses of Kenya Medical Training College (KMTC). The study's objectives focused on assessing the influences of family domain factors, peer domain factors, and college factors on substance use amongst female students at KMTC. The study adopted the ecological systems theory. Explanatory sequential mixed methods design (two- phase model) was used to collect quantitative data from participants on the subject; this was followed by collection of qualitative data through interview guide to get in-depth insight to help in explaining and elaborating the information gathered from the survey. The study population was 2474 female students. The study used stratified random sampling to select a sample of 344 respondents. Data from female students were gathered using semi-structured questionnaires and interview guides. The data from the questionnaire were analysed using descriptive statistics (frequency distributions, means, and percentages). Additionally, inferential statistics, correlation, and regression analysis were used to test the relationships between the study variables, while data from interviews were subjected to thematic analysis. The emergent findings were used to buttress the findings from questionnaires. The study results show that family domain factors had a significant influence on substance use among the female students at KMTC ($\beta = 0.394$; $p < 0.000$). The values that female students got from their families continued to offer a protective edge against substance use among female students. Further, the findings show that peer domain factors had a significant negative influence on substance use among the female students at KMTC ($\beta = 0.787$; $p = 0.000$). In this regard, the similarity between peers is critical in influencing behaviour. Therefore, having peers who do not use substances and having peers who disapprove of substance use is expected to lead in preventing female students from engaging in substance use. Lastly, the study findings show that college factors had a significant negative influence on substance use among the female students at KMTC ($\beta = 0.312$; $p = 0.007$). In this regard, having access to help services for substance use and having strict guidelines against substance use in college can be a significant protective factor against substance use. The study recommends that KMTC need to implement extensive substance prevention programs targeting female students to reduce risk factors associated with substance use. These should include guidance and counseling, peer counseling and mentorship programs and, advocacy campaigns. The interviews added that there was need to establish and finance advocacy programs backed by social media to enhance the dissemination of information on the negative influence of substance use.

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DEFINITION OF TERMS

College Domain Factors: College factors that can promote resilience to substance use among female students. In this light availability of help services for students, strict norms on substance use as well as rules and regulations in the college can mitigate the level of substance use among female students.

Family Domain Factors: Family-related factors can influence substance use among female students. In this regard, students from families that disapprove of substance use, have no family member who uses substances are more likely to abstain.

Female students: A full-time female student at KMTC and has not engaged in any medical work previously.

Peer Domain Factors: These were the influences, either positive or negative from peers, to use or not use substances. Students who had friends who do not encourage or use substances were expected to be more resilient to substance use and vice versa.

Substance use: Recurring use of substances among female students at KMTC indicated by levels of risk, frequency of use and commonly used substances.

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ASSIST	The Alcohol, Smoking and Substance Involvement Screening Test
EST	Ecological Systems Theory
HIV	Human Immunodeficiency Virus
KMTC	Kenya Medical Training College
NACADA	National Authority for the Campaign against Alcohol and Drug Abuse
NACOSTI	National Commission for Science, Technology, and Innovation
SPSS	Statistical Package for Social Sciences
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study focused on family, peer, and college factors and substance use among female Kenya Medical Training College students. Familial factors, peer factors, and college factors were the independent variables in the study while substance use (frequency of use, levels of risk, and commonly used substances) was the dependent variable. The chapter introduces the study and covers the background of the study, statement of the problem, objectives of the study, and research questions. It also outlines the significance of the study, the study's scope, assumptions, delimitations, and limitations of the research, conceptual, and theoretical framework.

1.2 Background of the Study

The background of any study provides essential data on the subject under study featuring the problem of research locally, regionally, and globally (Cooper & Schindler, 2011). World Health Organization (WHO) indicates that more than 15.3 million people globally have disorders that emanate from substance use (WHO, 2016). DSM-5 states that substance use is the recurring use of substances which lead to health problems, failure to meet major responsibilities or functional impairment (American Psychiatric Association, 2013). Notwithstanding the extensive prevention efforts, there has been an increase in unwarranted substance use currently among young female students which is an indication of risk (Davis & Spillman, 2011).

Further, the World Drug Report of 2017 indicates that an estimated 250 million people aged between 15 to 64 years accessed and consumed at least one substance in 2014. Moreover, the report indicates that over 29 million people globally

suffer from disorders that emerge from substance use (UNODC, 2017). There has been an upward surge in substance use amongst women in general and young girls in particular. Experts observe that up to 3 million young female students indulge in substance use, and 25 percent of the users engage in the use of more than one substance (Blume, 2012).

In addition, evidence-based ecological structure shows that no single factor can explain ones' vulnerability to substance use. Therefore, a student's vulnerability is the result of the influence of many factors at various levels: family, peer, and college. Family domain factors may be a risk or protective factor to an individual, as the first influence on an individual providing values, guidance, and control. The environment where one grows shapes one's behaviour. Blumes' study in Europe examined elements in the social environment from Icelandic female students which contributes to the origin and development of alcohol use and smoking cigarette (Blume, 2012). The study tested the parental relationships, parental use of alcohol and smoking, and their relationship with female's smoking and use of alcohol. Female students who had caring parents and whose parents did not smoke or use alcohol were less likely to smoke or use alcohol. Another study by Catalano, Miller, and Hawkins established that parental assistance was negatively linked to substance use among young female students (Catalano, Miller, & Hawkins, 2012).

Furthermore, peer domain factors play an important part in modelling behaviour and highly influences female substance use, acting as a major influence in the process of decision making and the formation of social relationships. Hodder, Freund, Bowman, Wolfenden, Gillham, Dray, and Wiggers in an Australian study showed an association of peer influence on smoking and alcohol use behaviours amongst young adults (Hodder, et al., 2016). Furthermore, peer similarity, friends'

attitudes in smoking, and alcohol use was among the strongest smoking and alcohol use among female students.

Likewise, college domain factors have a critical role in influencing substance use among female students whether it is encouraged or prohibited. The study by Hodder and others established an inverse association between 'college supports', which was considered to be a protective factor, with multiple substance use measures (Hodder, et al., 2016). The study established that female students who were supported at school by their teachers and the school administration were more resilient than female students who did not get similar support.

Besides, the World Drug Report of 2017 reported that females aged between 18 to 24 years in Africa are increasingly using locally available substances. However, among the overall population, alcohol and pain medications are the most used substances among females (UNODC, 2017). Those aged between 25 to 35 years have the highest past-year use and lifetime use of alcohol and pain medications. Equally, among females' lifetime use of prescription medication, heroin and cocaine are almost three times lower among people aged 36 years old as compared to ages 18 and 24 years.

In addition, the National Campaign against Drug Abuse Authority (NACADA) revealed the use of substances of choice as a public health problem in Kenya (NACADA, 2012). The study showed that for those aged between 15 and 24 years, 1.5 percent used bhang, 4.7 percent khat, 6.2 percent tobacco while a high of 11.7 percent were using alcohol. The use of alcohol among the youth was higher in males compared to females (18.1 percent and 5.6 percent respectively).

Another study focused at KMTC, most study subjects reported low risk for alcohol use (98.1 percent), 1.7 percent reported moderate risk, while 0.25 percent

reported a high risk of alcohol use. The study also found out that females were at a lower risk of alcohol use (99.15 percent) compared to males (97 percent) (Muriungi, Ndetei, Karanja, & Matheka, 2013). However, the study concluded the existence of risk to substance use in KMTC. The use of substances among female students remains a critical scope of study as a result of the consequences of the use of substances of choice to user's health and future. A study on endurance to substance use in urban slums in Kenya showed that females had higher scores on resilience index compared to males (Kabiru, Beguy, Ndugwa, Zulu, & Jessor, 2012). The resilience factors in the study included parental involvement as agents of social control, empowerment programs, and policies to enhance access to education and recreation and opportunities for civic involvement.

Moreover, studies on the influence of family, peer, and college domain factors and substance use were carried out in developed countries like Europe and America. The risks faced by youth and the environmental conditions present in these developed nations may not be similar to our local Kenyan context and hence these findings may not be generalized to the Kenyan context. Generally**,** studies on factors influencing female substance use in medical schools are minimal. Female students' substance use problems remain issues whose impact has been underestimated. Therefore, there was need to carry out this study in KMTC to establish the influence of family, peer, and college factors and substance use among female students.

1.3 Statement of the Problem

Despite the vast knowledge and practical training on health and being agents of change in matters of individual and community health, female medical students still engage in substance use. A study focused on KMTC revealed that students face

the risk of substance use. Though most students had a lower risk to the use of alcohol (98.1 percent), there is a considerable population (1.7 percent) who had moderate risk and another 0.2 percent that had higher risk to the use of alcohol (Muriungi, Ndetei, Karanja, & Matheka, 2013). The risk to alcohol use was lower among females (99.15 percent) compared to the males (97 percent). However, the study does not attempt to examine these differences between substance use among males and females in the context of family domain, peer domain, and college factors.

Although the study by Muriungi et al. indicated that there were a considerable number of female students at risk of substance use, Gathumbi posits that substance use among male students is usually higher than in female students, and hence the various studies on male students (Gathumbi, 2013). This creates an information gap in Kenya regarding the prevalence of substance use among female medical students. This informed the study which focused on the influence of family domain, peer domain, and college factors on substance use among female students at KMTC.

Even though there are several studies undertaken on the influence of the three variables on substance use (Catalano, Miller, & Hawkins, 2012; Brown, Johnston, Patrick, O'Malley, & Jerald, 2010; Blume, 2012, important literature gaps remain. Most existing studies were conducted in developed nations. However, the context in these countries may not be similar to that of Kenya. This means that the study findings may not expressly cast light on the state of affairs among female students in Kenya. In addition, most reviewed studies were conducted amongst secondary school students (Gathumbi, 2013; Blume, 2012; Catalano, Miller, & Hawkins, 2012). These findings may thus not expressly relate to this current study since the secondary school environment and population are distinct from those of tertiary colleges such as KMTC.

Additionally, there is an absence of documented studies on the singular influences of each of the three variables on substance use in Kenya. This means that the level to which these factors influence substance use among female students at KMTC may not be explained by the existing body of literature alone. In this context, the motivation of this current study was to establish the influences of peer domain, family domain, and college factors on substance use among female students at KMTC.

1.4 Purpose of the Study

The study's purpose was to assess the influence of family, peer and college domain factors and substance use among female students at Kenya Medical Training College Nairobi and Thika Campuses.

1.5 Objectives of the Study

The objectives were:

i. To assess the influence of family domain factors on substance use amongst KMTC female students.
ii. To determine the influence of peer domain factors on substance use among KMTC female students.
iii. To establish the influence of college factors on substance use among KMTC female students.

1.6 Research Questions

i. To what extent do family domain factors influence substance use amongst female students at KMTC?

ii. To what extent do peer domain factors influence substance use amongst female students at KMTC?

iii. Do college factors influence substance use amongst female students at KMTC?

1.7 Significance of the Study

The significance of a study indicates; research value to a discipline, contribution to policy, and application of knowledge while emphasizing the beneficiaries of the study findings (Kothari & Garg, 2014). There are unbearable physical, monetary, psychological, and spiritual outcomes of substance use on the user, family, and the goals of the college. The study provides mental health practitioners and lecturers with knowledge on family, peer, and college domain factors influencing substance use among KMTC female students to educate the young females on reducing substance use, hence providing a practical prevention approach amongst female students.

In addition, this study may benefit KMTC students by creating awareness among female students on family, peer, and college domain factors influencing substance use. Additionally, the study findings will assist the Ministry of Health and NACADA in knowing the scope of the problem and hence strengthen existing awareness campaigns on factors influencing substance use among female students.

As a result of the study, the findings may enlighten female students on the extent of substance use and help in building resilience among female students and hence contribute to the achievement of KMTC vision: to produce proficient health practitioners.

1.8 Scope of the Study

The researcher outlines and sets the study limits regarding the period of study, subject, geographical area to enable the researcher to come up with usable outcomes (Mugenda & Mugenda, 2012). The study took place at KMTC Nairobi and Thika campuses. The study's subject scope was 2474 female students in Nairobi and Thika campuses of KMTC as per the enrolment data of the two campuses. In the study, substance use was the dependent variable while college, peer, and familial domain factors were the independent variables of the study. The study was grounded on the ecological systems theory.

1.9 Delimitation(s) of the Study

These are features of a study restricting the scope, that is, the Researcher consciously excludes what was not carried out. Delimitation(s) are the factors that the Researcher controls in the study to make the study manageable (Mugenda & Mugenda, 2012). The Researcher did not study female students in other KMTC colleges except Thika and Nairobi campuses due to logistical constraints. Consequently, data were only collected from female students who had stayed in the college for more than one semester since they were capable of giving information regarding substance use at KMTC. First semester, first year female students were excluded from the study for the reason that they had just reported to college a week before data collection. The study focussed on establishing family, peer, and college domain factors and substance use among KMTC female students.

1.10 Limitations of the Study

Limitations are controls existing in any research that the Researcher cannot regulate (Cooper & Schindler, 2011). They may be related to sampling methods, and the subjects, research design. Female students may have given socially acceptable information regarding family, peer, and college factors and substance use due to fear of exposing themselves. This was mitigated by assuring participants of their informed consent and confidentiality and that the information given was only for purposes of the study. Self-administered questionnaire was used to collect data for purposes of the participants' privacy and an interview guide was administered with participants' informed consent.

Finally, the study focussed on female students in a tertiary educational institution. The findings of the study might therefore not be generalized amongst female students in different institutions such as secondary schools other than tertiary and middle-level colleges. Fieldwork was conducted in March/ April 2018, and the Researcher used simple random sampling technique to select the study sample. The Subjects reported events that had happened before the study. Subjects who were in areas of clinical placements were excluded from the study and hence the study could have missed out on rich information on those study subjects who were excluded.

1.11 Assumptions of the Study

Assumptions give the researcher key facts influencing the evaluation of the study findings and making conclusions (Mugenda & Mugenda, 2012). The researcher assumed that there was some level of substance use by female students in KMTC Thika and Nairobi campuses. Moreover, the researcher assumed that social conditions in the study population did not change during and after the collection of data so that

results of data analyses were a true reflection of the conditions within the population under study.

1.12 Theoretical Framework

The study was guided by the ecological systems theory as illustrated subsequently.

1.12.1 Ecological Systems Theory (EST)

The study was guided by Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1977). EST provided a theoretical framework to study individuals in ecological contexts: studying individuals, their environment and how the individual interact with each other and their environment. Abstractly, EST is being used to prompt focus on influence at different levels, informing the advancement of models in different contexts to describe events including protective factors and risk of substance use. EST focuses on identifying factors influencing substance use as per individuals' context and guides strategies within and beyond an individual's control to include the environment and its interaction with the individual. This makes this theory better placed to the study in explaining family, peer, and college domain factors influencing female students' substance use in a medical training college context.

Originally, Bronfenbrenner illustrates ecological systems at various levels as intertwined, thus informing EST's graphical depiction as a set of circles (Bronfenbrenner, 1979). Bronfenbrenner states that discovering persons is a composite process. Later, in 1986, he posits that understanding an individual and their environment needs to be fully examined including the school set up, ones' way of life, community, home among other contexts, stressing that the person and their context are interrelated (Bronfenbrenner, 1986). The complementary relations between a

person and various extrinsic systems are regarded as central procedures that determine individuals' resilience or risk of substance use.

Next, the ecological systems theory (Figure 1.1) depicts the environment of an individual to consist of four levels: the macro system, micro system, exosystem, and mesosystem(Paquette & Ryan, 2011). The immediate environment is the microsystem that the individual lives, which comprise of the immediate family, school, and home environment. This informed the study in that the family and college environment of the targeted KMTC female students could have influenced their substance use behaviour. The mesosystem entails how the different aspects of the microsystem interact with each other to affect the individual. The exosystem comprises places and other people that individuals' may not regularly relate with but has an effect on them such as the neighbourhood, community members, and parents' workplaces among others.

Lastly, the macrosystem comprises aspects such as laws, economic factors, religion, cultural values, and other such aspects in the external environment which may have a negative or positive influence on the individual. This explains that individual factors such as religious beliefs and institutional factors such as policies by KMTC regarding substance use may have influenced substance use among female students. The EST has been applied in many studies across various disciplines including studies on vulnerability to substance use (Hodder, et al., 2016; Pandian & Lakshmana, 2017) and in assessing resilience to substance use (VicHealth, 2015).

This theory relates to this current study in various ways. It identifies the factors that influence substance use among individuals (female students in the case of this study). In this regard, the theory makes it clear that the environment of female students could influence their propensity to use substances. The environment of the

female students such as the influence of family members and peers as well as college factors could influence their propensity to use substance of choice.

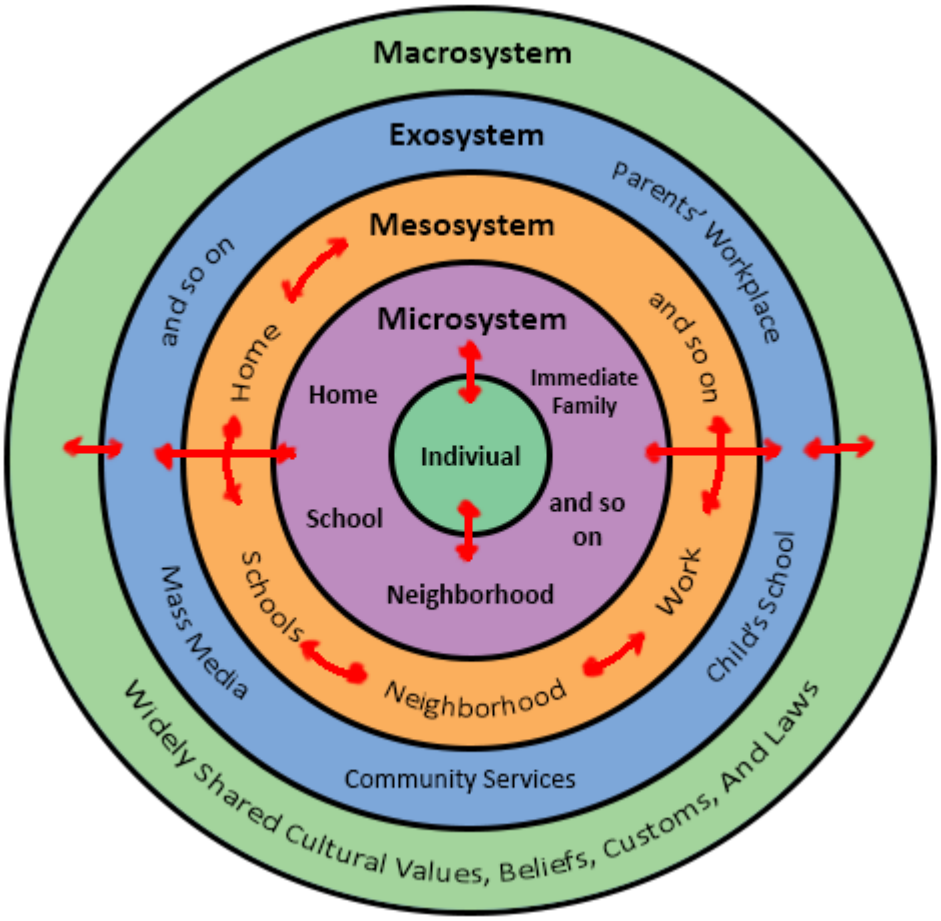


Figure 1.1: Ecological Systems Theory

Source (Paquette & Ryan, 2011).

1.13 Conceptual Framework

A conceptual framework is a brief review of a phenomenon under investigation represented by either visual or graphical illustrations for key study variables (Mugenda & Mugenda, 2012) emphasizing Researcher's position on the association and interactions between independent and dependent variables as shown in Figure 1.2. The dependent variable in the conceptual framework was substance use.

This was assessed with the frequency of use of substances as tobacco, cannabis, and non-prescription medication among others commonly used at KMTC. Past use of these substances by female students was considered resilient while those with current use were considered at risk of substance use.

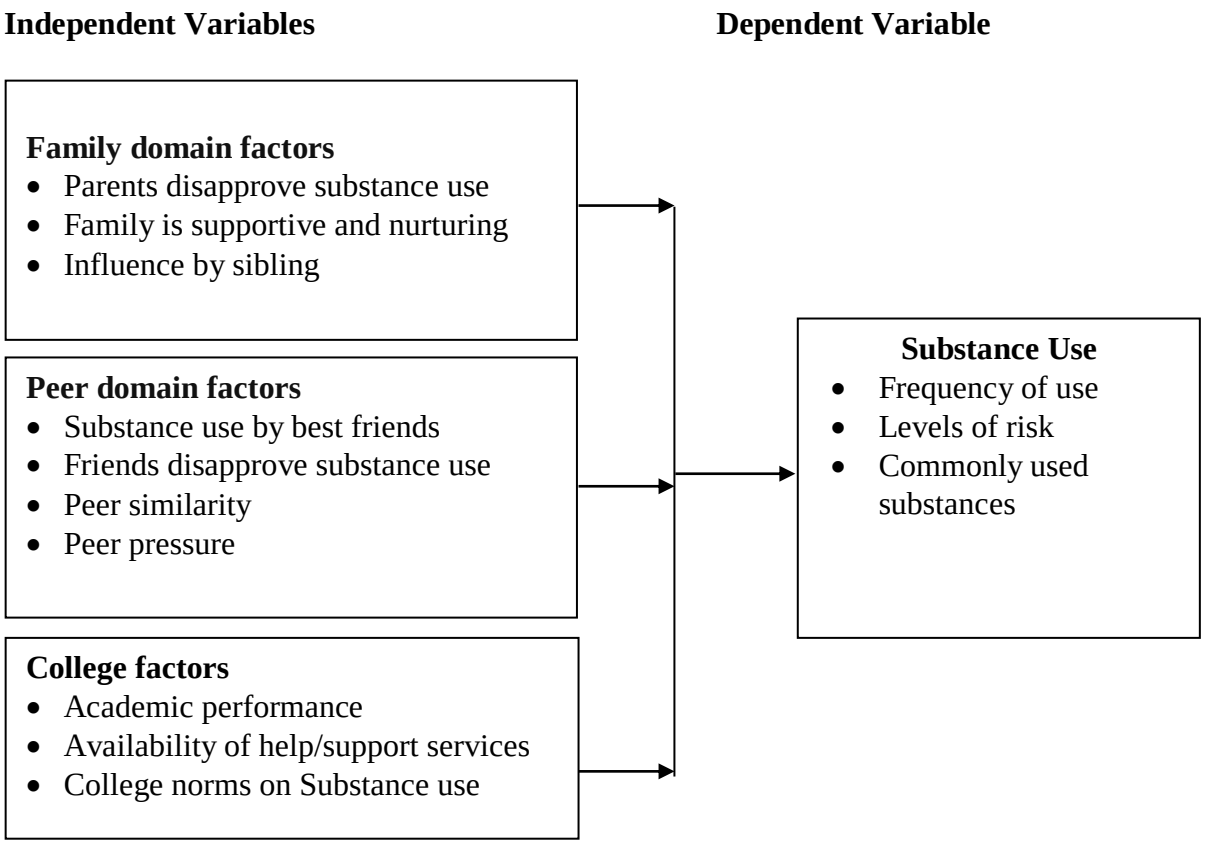


Figure 1.2: Family, Peer and College Domain Factors and Substance Use among Female Students at KMTC, Nairobi and Thika Campuses

Source: Researcher 2018

The dependent variable in the study was substance use which was indicated by the frequency of substance use, levels of risk, and commonly used substances. The independent variables in the study were family domain factors, peer domain factors, and college factors. Measures of family domain factors included; parents disapprove substance use, family is supportive and nurturing, and influence by sibling(s). Female

students from families that disapproved substance use, have no family member who use substances were expected to abstain while female students who were exposed to substance use by their siblings are more likely to be vulnerable to the use of substance of choice.

For instance, the peer domain factors were; substance use by best friends, friends' disapproval of substance use, peer similarity, and peer pressure influenced whether female students engaged in substance use or not. Female students who had friends who did not encourage or use substances were expected to be at minor risk compared to the female students whose friends encouraged and used substances. Moreover, students whose peers used substances were less resilient since some engaged in the use of these substances to be similar to their peers.

Additionally, college factors included students' academic performance, availability of help/support services for female students, and college guidelines on substance use. These factors played a role in promoting abstinence to substance use among female students. Students who performed well academically were likely to abstain from substance use. Access to help services in college increased female students' protection from substance use. Rules and regulations in college could also check the level of substance use among female students.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This study assessed the influence of peer, familial and college factors and substance use among female students at KMTC. This chapter details the empirical review of literature regarding peer, family, and college factors influencing female students' substance use. The chapter presents the critical review of literature at the global, regional, national, and local levels. It also points out the study gaps that the researcher seeks to bridge through the outcome of this study.

2.2 Review of the Literature

The section provides a review of various studies that have been conducted on the study variables. The first section focuses on three factors influencing substance use among female students. The family domain factors, peer domain factors, college factors and substance use among female college students are presented. The empirical studies reviewed have been conducted globally, regionally, and locally.

2.2.1 Family Domain Factors and Substance use

Blume's study in Europe examined elements in the social environment from Icelandic teens which contributes to the commencement and development of alcohol use and smoking cigarette. The study also sought to find out the protective factors that made adolescents desist from substance use even after being subjected to the risk of substance use (Blume, 2012). The population of the study was students aged between 15 and 16 years in all Icelandic high schools. The study tested the parental relationships, parental use of alcohol and smoking, and their relationship with the

adolescent's smoking and use of alcohol. Adolescents who had caring parents and whose parents did not smoke or use alcohol were less likely to smoke or use alcohol. The family forms an essential part of the assessment and practical interventions for individuals engaging in substance use since the family plays a critical role in one's substance use.

Additionally, a study among 666 and 510 American mother-adolescent and father-adolescent dyads in Europe (Brown, Johnston, Patrick, O'Malley, & Jerald, 2010) established a consistency with individuality-association theory, underlining that the reactivity of mothers would likely lessen the adaptation of their adolescents to peers, thus reducing the use of substances amongst adolescents. Maternal values decreased alcohol use among adolescents; adolescent substance use also depended on maternal approval or disapproval to an extent. On fathers, a closer observation was associated directly with reduced substance use amongst adolescents, with more strong effects felt for fathers who held disapproving opinions on adolescent alcohol use. The results further outlined that the association of parent-family and perceived association with schools was protective of substance use as envisaged in this current study.

Furthermore, in the US, parental assistance was found to be negatively linked to the use of substance of choice and hence was considered to promote individuals' resilience factor (Catalano, Miller, & Hawkins, 2012). These findings were supported by Hodder et al. study that established an inverse relationship between 'home support' and substance use, (five of seven), 'support from school' (three of seven), 'knowing thyself' (two of seven), 'effective participation by the community' (two of seven); support from the community' (three of seven), 'caring peer relationships' (five of

seven) and other resilient factors (Hodder, et al., 2016). This current study sets out to find out the veracity of these findings in Kenya.

Likewise in 2013, there was a study by the Health and Ageing Department of Australian Government on understanding the behaviours of the youth on smoking dependence and cessation, and the study emphasized that 'young people recognize how prolonged smoking is injurious to health, but they fail to consider the long-term effects of smoking.' The study highlights that the youth are mostly driven by the counter experiences from how other people (mostly their parents or close relatives) smoke for a life-time without suffering from health consequences. The study proposed the parent's responsibility among others, to a critical protective factor to make adolescents desist from substance use (Suarez, Perez, Martinez, & Rivera, 2017).

2.2.2 Peer Domain Factors and Substance Use

A study focused on Iceland showed association of peer influence on smoking and alcohol use behaviours amongst teenagers. The study also noted that peer similarity in smoking and alcohol use was among the strongest smoking and alcohol use behaviour predictor (Blume, 2012). The study also established that friends' or peers' attitudes towards smoking were vital in influencing an individual to substance use. Peer disapproval of smoking or use of substance of choice was a protective factor to adolescent peers. Results indicated that peer influence and similarity on substance use and perceived peer reactions are vital variables. Friends are crucial to teenagers in their developmental stage and having friends who engage in substance use highly influences substance use behaviour amongst female students. These findings are in

line with this current study that envisages that peers could influence substance use among female students.

For instance, study focused on Australian assessed the relationship between teen's tobacco, and unwarranted use of substance of choice and a persons' protection from ones environment. The study established an inverse relationship between 'pro-social peers' and substance use (Hodder, et al., 2016). However, the study established that 'peer caring relationships' was related to individuals' use of substance of choice. Furthermore, a South African study posits that young people whose associates engage in the use of substances are at higher risk to use these readily available substances of choice(Parry, 2014), while getting involved in various forms of violence or victimization and are likely to perpetrate violent acts (Collings & Magojo, 2015).

In addition, other studies have established that the youth who experience frequent reports to authorities are potentially likely to be exposed in public drunkenness (Parry, 2014). This current study sets out to investigate how these findings apply to female students in Kenya. In a longitudinal study among young people in Uganda, it was established that the use of various substances of choice by peers significantly predict violence amongst youth (Jason, 2011). However, unplanned communities were also found to be higher predictors of high incidence for the use of available substances among adolescents. In addition, the youth who report greater disorganization in their communities are more at risk of the use of substances as opposed to those who report less disorganization within their communities. This shows that a disorganised society made substance use among the youth rampant and this encouraged those who engage in substance of choice to recruit peers into the vice.

Similarly, conformity of behaviour, interest, values, and attitudes among the youth have been established as major influencing factors in the development of adolescents, this therefore leaves them with minimal resistance against substance use. The more parents are not able to act with authority consistently, the more the adolescents are likely to conform to their peers (Kobasa, 2013). In Uganda, adolescents have an overwhelming experience of stress from deaths, wars, and also substance use, but regardless of the adversities, several of them present resilience to substance use (Eggun & Vaughan, 2014). Peer pressure is regarded as key in adolescents' decision to use substances. Since the study was not focused on Kenya, it is important to test the veracity of these findings among female students in Kenya.

In fact, Bernard underlines that significant achievements of resilience have resulted from various studies as; positive psychology which focuses on strengths that enable people or communities to flourish, the overall health of an individual throughout ones' lifespan, and the investment in the welfare of the youth (Bernard, 2014). Search Institute asserts that young persons with fewer assets are highly likely to perpetuate risky behaviours like substance use and deviant behaviour (Search Institute, 2011). Likewise, scholars hypothesize that to strengthen the underlying protective factors linked with resilience to substance use, some caring and personal relationships have to be formed, to increase the chances of young people making conscious realistic healthy choices which could lead to the success of students (Henderson, 2013). Having supportive friends is one key protective factor that was mentioned in the study.

2.2.3 College Domain Factors and Substance Use

The study by Hodder et al. in Australia established an inverse association between 'school supports', which was considered to be a protective factor, with multiple substance use measures (Hodder, et al., 2016). The study concluded that those adolescents who were supported at school by their teachers and the school administration were more resilient than their counterparts who did not get similar support. Another comparative study of the youth from the United States and South Africa on substance use found that prevalence rates in the usage of cigarettes, occasional drunkenness and marijuana use to be more significant among students who had poor academic performances in both United States and South Africa (Perkins & Maxwell, 2011).

Besides, the United States has a higher pace of hard lifelong use of illicit substances, this was witnessed amongst students who had a poor academic background as opposed to the students who had better academic excellence, on the contrary in South Africa, and the rate of substance use was higher amongst the students who had better academic achievement (Rohde, 2012). Good academic achievement is a protective factor against substance use among students in the United States and inversely a positive relationship with the use of substance of choice in South Africa. Since the former study was not focused on Kenya nor KMTC, Thika and Nairobi, this current study sets out to find out the level to which college factors influence substance use among female students at the college.

Additionally, amongst youth in Michigan, United States, Detroit, Windle asserts that teenagers engaging with extracurricular become more protected against substance use compared to the youth not engaging in after school activities (Windle, 2010). The teachers' support makes the youth less likely to engage in the usage of

substances than the youth who perceived themselves as not having the support of teachers. WHO and the United Nations on Drugs and Crime in a worldwide program initiated an expansive prevention program on substance use in various parts of East and Southern Africa targeting the young people in schools and colleges (UNODC, 2013). The focus on broad-based activities dealing with demand reduction as treatment and research, and supply reduction as advocacy for making the substances less socially tolerated. Improved living conditions for the young people; and ensuring that school authorities are mobilized towards preventive action.

Consequently, the prevention programs target environmental-related approaches and individuals, for example, the United Nations on Drugs and Crime is one amongst various organizations that support the Mathari National Teaching and Referral Hospital, substance rehabilitation unit and this initiative has made a significant contribution in addressing substance use in Kenya and beyond especially among the middle and low-class youth. Most programs for prevention in Colleges in Africa entail those offered by Faith-Based Groups and Government ministries whose main goal is to monitor students to abstain from substances. One of the substance control strategies in West Africa is twofold: to control supply and reducing demand programs (Adelekan, 2010). These programs include awareness of substances, causes of addiction, and effects. These have enabled students to be equipped with basic information for effective prevention strategies.

Next, a study in South African educational institutions outlined that prevention strategies often adopt an educational drug prevention approach forming 91 percent seeking to increase awareness by establishing the knowledge related to substance use and related effects (Burnhams, Myers, & Parry, 2011). It entails extensive surveys on substance use aimed at identifying those with substance dependence problems to

provide treatment and support and creating awareness (McDonald, 2010). Drug awareness programs use educational channels consisting of posters, banners among other channels. The Ministry of Education in Kenya (GoK, 2010) authorized institutions of higher learning in their performance contracting to initiate substance prevention strategies. As a result, tertiary colleges work together with NACADA and the Ministry of Education (Hagembe & Simiyu, 2012). The collaboration has resulted in various studies, awareness campaigns, and staff training on the prevention of substance use. These represent critical collaborative approaches that reveal various subjects to target to improve practical substance use prevention strategies.

For instance, Kenyatta University, Karanja reported peer educators are trained and in exchange, the peer educators seek to decrease unplanned sexual activities, sexually transmitted infections such as HIV/AIDs, and substance use among other activities by enhancing the value of counselling services to students (Karanja, 2010). The study reported that peer prevention programs train students to encourage abstinence. Through peer counselling programs, students acquire information regarding emerging substances and appropriate recommendations for professional help from mental health practitioners. At Africa Nazarene University, peer counsellors give appropriate referrals to fellow students struggling with substance use and academic challenges for counselling and guidance. In Universities and Colleges, advocacy and outreach programmes educate students on the dangers of substance use (Pere, 2018). These have strengthened diverse strategies to mitigate the use of substances of choice amongst female students in colleges.

2.3 Summary of Review of Literature and Research Gap

This chapter presents a review of literature based on the objectives of the study namely the influence of family domain factors; peer domain factors, and college factors and substance use among female students at KMTC, Nairobi and Thika. The linkages between the studies reviewed and the study variables were drawn. The reviewed literature leaves a few gaps that the current study sought to address. First, most reviewed studies were conducted in developed nations (Catalano, Miller, & Hawkins, 2012; Brown, Johnston, Patrick, O'Malley, & Jerald, 2010; Blume, 2012). The context in these countries may not be similar to the local Kenyan context and hence these studies cannot be generalized to the Kenyan context. Additionally, most of the reviewed studies were conducted amongst secondary school students (Gathumbi, 2013; Blume, 2012; Catalano, Miller, & Hawkins, 2012). The secondary school environment and the population is distinct from the population and environment in a tertiary college such as KMTC.

In addition, positive adaptation despite adverse circumstances is a multi-dimensional and dynamic process which evolves and entails the reciprocal exchanges between individuals and their environment. Young female students are increasingly engaging in substance use. However, there is a deficiency of studies that has female medical students as the target population with regards to the family, peer, and college factors and substance use at KMTC. Those that focussed on female such as Good and McKay, did not focus on substance use (Good & McKay, 2012) while the study by Bot had adolescents as the target population (Bot, 2015). This study bridged the empirical gap by assessing the family, peer, college domain factors and substance use among female students in a tertiary college, KMTC.

Further, studies on family, peer, and college factors among college students are few, the capacity and competence of KMTC lecturers on mental health may not enable them to adequately identify these factors among female students. Further, studies analysed shows that substance use are a problem that exists all over the globe. Effects of trying out on historic and newer substances lead to higher substance use and dependence on substance of choice. Experimentation affects young female students to newer complex emerging substances. None of these studies was conducted on family, peer, and college domain factors and substance use among female students at KMTC, a meeting point of diverse cultures. This study, therefore, sought to fill these gaps and establish the factors influencing substance use to inform practical interventions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The study's purpose was to establish family, peer, and college factors and substance use amongst female KMTC students. This section details the study methodology. The chapter entails the research design, site, targeted population, the sampling procedures, sample size, pilot study, methods of data collection procedures, instrument reliability and validity, analysis of data, and finally ethical and legal considerations.

3.2 Research Design

Cooper and Schindler explains a study design to be a master plan of action for data collection, measurement, and analysis, and a framework of obtaining answers to the research questions (Cooper & Schindler, 2011). The researcher adopted explanatory sequential mixed methods design that involved the collection of quantitative data and analysis followed by collection and analysis of qualitative data from respondents regarding family, peer, and college factors and substance use among female KMTC students to gain more insight and to expound quantitative results.

Consequently, explanatory sequential mixed methods design was used to gather quantitative data collection on peer, family and college factors and relate the factors to substance use by the female students at KMTC by using both questionnaire and interview guide.

3.3 Research Site

Kothari and Garg state that the study site is the location of a study where the researcher can gather the information that is relevant to the problem being investigated. The study was conducted at KMTC Thika and Nairobi campuses located in Kiambu and Nairobi counties (Kothari & Garg, 2014). The researcher had the ease of access and developed an immediate rapport with participants. KMTC has been selected as the study site that was informed by the findings of the study by Muriungi et al. stating female students at KMTC, face risk of substance use and hence the need to build students' resilience backed by empirical evidence to mitigate the challenge (Muriungi, Ndetei, Karanja, & Matheka, 2013).

Additionally, KMTC, Nairobi has the largest capacity of students, with a total of 2174 female students. The situation and locality is Ngong road, 3 kilometres off Nairobi central business district within Nairobi city, adjacent to Kenyatta National Hospital. KMTC Thika has a relatively smaller population of female students, having a total of 300 female students. The situation and locality is 50 kilometres off Nairobi in Thika town. The study focused on KMTC due the high incidences of substance use among female students (Muriungi, Ndetei, Karanja, & Matheka, 2013). Thika and Nairobi campuses are selected because of the high levels of substance use in urban areas in Kenya where these campuses are located (Kabiru, Beguy, Ndugwa, Zulu, & Jessor, 2012).

3.4 Target Population

Nicolas defines the population as the cluster of components to arrive at deductions and are of interest in any study (Nicolas, 2011). This study targeted all KMTC female students at all levels at Nairobi and Thika campuses. The population of

female students from KMTC Nairobi and Thika campuses that were targeted was 2474 at the time of the study, March 2018, as per the records from principal Nairobi and Thika campuses. They were recruited using the class placement lists provided by the principals.

3.5 Study Sample

This section presents the sample size and sampling procedure that was employed in the study.

3.5.1 Study Sample Size

A sampling frame is a list that comprises the member from the population (Nicolas, 2011). The study population was 2474 female students. Sampling was aided by the sample size calculation formula by Yamane (Yamane, 1967) as indicated by Cooper (Cooper & Schindler, 2011). The level of statistical significance of 5 percent was used to minimize sampling error.

$$n = \frac{N}{1 + N(e)^2}$$

In the formula;

n = sample size

N = population size

e = margin of error (0.05).

$$\mathbf{n} = \frac{2474}{1+2474e^2} \qquad n = 344$$

The 344 sampled respondents were selected randomly and proportionately from all the female students from the two campuses.

3.5.2 Sampling Procedure

Sampling is conducted in a representative sample of a population to conclude about the entire populace. The final test in sample design is determined by how well population characteristics are represented (Kothari & Garg, 2014). The Researcher adopted proportionate stratified sampling to select the study sample. The strata included the Nairobi and Thika KMTC Campuses. From each campus (stratum), a sample of 86 was selected from Thika and 258 from Nairobi making the sample of 344 female students for the study. The Researcher adopted simple random sampling to pick out the sample for the study by allowing willing participants to pick papers indicating Yes or No.

3.6 Data Collection

3.6.1 Data Collection Instruments

The study used questionnaires and interviews for the collection of data. Cooper and Schindler suggest that the use of questionnaires is cost-effective in collecting data and reaching the study sample is easier while interviews accord the researcher time to freely provide information without the limitation of a predetermined set of questions (Cooper & Schindler, 2011). Paper-and- pen self-administered questionnaires containing structured items were developed as per the study's objectives.

The paper- and- pen questionnaire had various sections: section A; social and demographic characteristics of the respondents, section B; Substance use as guided by the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST v3.0) a modified standardized test adapted from World Health Organization (WHO, 2010), section C; had closed questions rated on a five-point scale seeking information for the

independent variables: family, peer, and college domains. A questionnaire was given to all female students selected in the sample to collect data relating to female student's substance use in Nairobi and Thika campuses. On their part, interviews were conducted among 10 female student leaders drawn from the sampled students. The interview guides contained questions linked to the study questions.

3.6.2 Pilot Testing of research Instruments

Pilot testing was carried out to determine the accuracy, clarity, and suitability of the paper-and-pen questionnaire. Mugenda and Mugenda observe that a pilot study is a try-out of the main study on a small scale to test unexpected problems and to minimize such errors and increase success rate (Mugenda & Mugenda, 2012). Piloting aided to administer the paper-and-pen questionnaire, and to gauge the time limit for the completion of the questionnaire.

Thirty-four female students from KMTC, Karen campus were used in the pilot test. This was 10 percent of the targeted study sample (Mugenda & Mugenda, 2012). The pilot test checked participants' responses and pointed out necessary amendments that were required to make the questionnaire easy to understand. Female students from KMTC Karen campus were used for pre-testing the questionnaire since the researcher held an assumption that behavioural patterns on substance use were corresponding, and that the college faced similar challenges as Nairobi and Thika.

3.6.3 Instrument Reliability

Cronbach's alpha assesses internal consistency through which a research participant responds to the different items and hence applicable as a measure of scale reliability. Cooper indicates that a high value of the Cronbach alpha denotes high

reliability whereas a low value denotes low reliability (Cooper & Schindler, 2011). Alpha value of 0.7 and above is permissible while a value of less than 0.7 will require amendment or removal of some items. Thirty-four female students from KMTC, Karen campus were used in the pilot test which was used to test the reliability and appropriateness of the questionnaire that was used in data collection. However, responses from pilot testing were entered into SPSS and Cronbach alpha reliability statistics computed. Adjustments were made to some parts of the questionnaire until the researcher established that all the questionnaire items were relevant and appropriate with Cronbach alpha of 0.7 and above as shown in Table 3.1.

Table 3.1: Reliability Statistics

Items	Number of Items	Cronbach's Alpha
Family Domain Factors	5	0.775
Peer Domain Factors	3	0.739
College Factors	4	0.813
Substance Use	4	0.725

3.6.4 Instrument Validity

The validity of the study instruments was measured in different ways. To begin with, face validity, which is a "subjective assessment of whether the test measures what they were supposed to or not" was measured by assessing the ease with which the study participants respond to the questions contained in the questionnaires. Any ambiguous questions were identified and promptly adjusted.

Additionally, content validity, ensured that the research tools "offered an adequate investigation of the study questions was ensured through expert's opinion by university supervisors. Their input was used to ensure that the research instruments were suitable for use and that the data collected could answer the research questions. Adjustments, corrections, and additions were made to the research instrument.

Consequently, construct validity, “the extent to which a set of measured items reflect the theoretical latent construct that the items were designed to measure” (Cooper & Schindler, 2011). This was ensured by formulating the study questions in line with research objectives. In this regard, the questions in the research instruments were formulated based on the literature reviewed.

3.6.5 Data Collection Procedure

A letter of introduction and clearance from Africa Nazarene University, Board of Post Graduate Studies was obtained. The permit was granted by the National Commission for Science, Technology, and Innovation (NACOSTI), and permission was obtained from county administration offices, in Nairobi and Kiambu counties respectively. The permit from NACOSTI was presented to the Director/Assistant Director in charge of research whereby authority was granted to carry out the study, and the Principal Nairobi campus issued a memo to all departments introducing the Researcher.

Next, the head of each department introduced the Researcher/ Assistant to the lecturers or class/participants. After the introduction, the study’s participants were informed of the research purpose and were assured of their anonymity, confidentiality, and informed consent in participation in the study. Paper-pencil-questionnaires were distributed by the Researcher and/or Assistants to the participants via yes/ no criteria. The Researcher allowed the participants twenty minutes to answer the questionnaires. After the lapse of the time, the Researcher collected the questionnaires followed by a short speech thanking the participants for their participation in the study. Appointments were made with the student leaders for a later

time. Thereafter, the Researcher and the Assistant visited the campuses and conducted the interviews. This took four non-consecutive days.

3.7 Data Processing and Analysis

Data collected from female students was analysed quantitatively and qualitatively. Quantitative data collected was analysed using Statistical Package for Social Sciences (SPSS version 23). Descriptive statistics, frequencies, percentages, and means were used to analyse the quantitative data. Inferential statistics, Pearson correlation, and multiple regression analysis were used to test the relationships between the study variables. Conversely, data from interviews were subjected to thematic analysis. The emergent findings were used to buttress the findings from questionnaires. The conclusions were derived from the analysed data, translating to the recommendations and suggestions for further studies.

3.8 Legal and Ethical Considerations

The legal issues that were considered were; approval of the research proposal by the Africa Nazarene University senate and a letter of introduction was granted. A research permit was obtained from the Ministry of Education National Commission for Science, Technology, and Innovation (NACOSTI). Permission from county administration offices were obtained from Nairobi and Thika counties. The research permit and the authorisation letters were then presented to the Director KMTC to access the students as participants.

Likewise ethical issues were also considered before data collection. In this regard, the participants were introduced to the nature of the study and given time to decide whether to participate in the study or not. To have the respondents' consent,

the Researcher provided potential respondents with adequate information on the study's purpose and how the results will be used. Additionally, the study relied on self-reporting, hence ensuring informed consent and privacy by respondents thus minimizing fears and labelling. The Researcher/Assistant explained to the potential respondents the rights to participation and to withdraw their participation in the process. The Subjects were assured of confidentiality, and that the information that was obtained for the study was private and used for purposes of the study only. Moreover, the data collected was only used for purposes of academic work. The study firmly followed KMTC regulations on research. Finally, after data analysis, thesis defense, and final report writing, the study findings will be shared with the consumers as; KMTC, Nairobi, Thika, and Karen campuses.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

The study's purpose was to assess family, peer and college factors and substance use amongst KMTC female students at Thika and Nairobi campuses. The study's objectives were to; assess the influence of family domain factors on substance use amongst KMTC female students; determine the influence of peer domain factors on substance use among KMTC female students and; assess the influence of college factors on substance use among KMTC female students. The chapter entails analyses of the responses from the interview guide and the questionnaire survey conducted in Thika and Nairobi KMTCs.

4.2 Response Rate

The study targeted 344 female students of Thika and Nairobi KMTC. Out of 344 questionnaires, 315 were filled and collected from the participating female students. This was a return rate of 92 percent. The findings presented in this section relate to the responses provided by the 315 female students from the two campuses of KMTC. A 60 percent and above response rate is adequate for a paper-based questionnaire survey (Cooper & Schindler, 2011). The findings are derived after analysis through SPSS which provided both descriptive and regression statistics.

4.2.1 Social Demographic Characteristics of the Respondents

General information about the participants that were observed in the study included religious affiliation of the respondents, age, type of secondary school they attended, and the type of the family that the respondents were brought up in.

Additionally, information regarding substance use in the past, and whether the respondents had never used, was still using, recovering, or fully recovered was collected. Information on the social demographic characteristics of the participants as presented in Table 4.1.

Table 4.1: Social Demographic Characteristics of Respondents

Religion	**Frequency**	**Percent**
Christian	278	89
Muslim	33	11
Hindu	2	1
Total	**313**	**100**
Age Group		
18 - 20 years	123	39.1
21 - 23 years	157	49.8
24 years and above	29	9.2
Non-response	6	1.9
Total	**315**	**100.0**
Type of School		
Boarding	177	56.2
Day	30	9.5
Mixed	61	19.4
Girls only	47	14.9
Total	**315**	**100.0**
Family Background		
Type of family		
Nuclear family	207	66.8
Extended family	56	18.1
Single parent family	35	11.3
Step/ blended family	12	3.9
Total	**310**	**100.0**

Source: Field data 2018

Regarding religion of respondents, study results presented in Table 4.1. A total of 313 respondents indicated their religion, 89 percent of the respondents were Christians, 11 percent Muslim, and one percent Hindu. All the respondents who were recovering or still using the substances of choice were also Christians. The ages of the

respondents were also determined in the study and a total of 309 respondents indicated their age. Those aged between 21 and 23 years were 49.8 percent while those aged 24 years and above were 9.2 percent. The mean age was 20.98 years.

The study also found out the type of secondary school that the respondents had attended. Study results presented in Table 4.1 demonstrate that most of the participants (56.2 percent) attended boarding secondary schools while only 9.5 percent had attended day schools.

Lastly, the study also established the type of family that the respondents were brought up in. The study findings indicates that 67 percent of the respondents were brought up in nuclear families, 18 percent in extended families, 11 percent in single-parent families while four percent were brought up in step (blended) families.

4.2.2 Substance Use at KMTC

There were five measures for the extent of substance use that included: status of substance use, non-problematic use, harmful use, non-medical use, and polydrug use. Status of substance was measured by a rating scale that classified the participants as follows: recovering, still using, and never used. Non-problematic use was measured by ever used and past three months' use.

As a result, harmful use of substances was measured by the following indicators: female students who had stronger urge to use substance of choice within three months preceding the study; whether female students use of the substances resulted into legal, financial, social issues and health related challenges three months preceding the study; participants failure to do their obligations or duty as expected of them due to substance use in the past three months preceding the study, and participants' attempted and was unsuccessful in controlling, cutting down or stopping

the use ofsubstance of choice in the last three months before the study. Non-medical use was measured by whether participants had ever usedsubstances by injection for non-medical use within and without three months preceding the survey. The study also analysed the poly-drug use (Those who were using more than one substance) among female students. Poly-drug use was measured by ten measures. The substances included tobacco products, alcohol, cannabis, pain medications, and sleeping pills. The findings and their implications are shown in the following section.

Similarly, the status of substance use was measured by a rating scale that classified the participants as follows: recovering, still using, and never used. Female students who participated in the study were requested to indicate their status of substance use. The results are presented in Table 4.2.

Table 4.2: Status of Substance Use

Status	Frequency	Percent
Recovering	29	9.2
Still using	30	9.5
Never used	183	58.1
Non-response	73	23.2
Total	**315**	**100.0**

Source: Field data 2018

The respondents were to indicate whether they were recovering, still using, or had never engaged in substance use. Results presented in Table 4.2 indicate that 58.1 percent indicated that they have never engaged in substance use while 23.2 percent did not respond to the question. The female students who indicated that they were recovering were 9.2 percent while 9.5 percent were still engaged in substance use. This indicated a high prevalence rate of substance use since 9.5 percent were still using various substances of choice.

Furthermore, problematic use of substance of choice was measured by ever used (lifetime use) and past-month use (used within three months preceding the survey). The findings are presented in Table 4.3.

Table 4.3: Female Students who had Ever used Substances

Substances	NO		YES	
	F	%	F	%
Tobacco products (cigarettes, chewing tobacco)	262	94	16	6
Alcohol (wine, spirits, beer)	191	64	105	35
Cannabis (weed, pot, grass)	249	87	36	13
Sleeping pills	228	83	48	17
Pain medications	103	36	183	64

Source: Field data 2018

Regarding 'ever use' of substances, results shown in Table 4.3 illustrate that 64 percent of the participating female students had at one time engaged in illicit use of pain medications, 35 percent had used alcohol, 17 percent used sleeping pills, 13 percent engaged in cannabis use while only six percent had engaged in tobacco use. Results regarding those who had engaged in substance use in the three months before the study were sought. Table 4.4 presents these findings.

Table 4.4: Female Students Engaged in Substance Use in the Preceding Three Months

Substances	**Never (%)**	**Once or twice (%)**	**Monthly (%)**	**Weekly (%)**	**Daily or almost daily (%)**	**Total**
Tobacco products	89	8	0	3	0	100
Alcohol	71	20	4	4	1	100
Cannabis	88	6	2	4	0	100
Sleeping pills	81	12	6	0	1	100
Pain medication	39	43	12	2	4	100
Average (%)	74	18	5	2	1	100
Average (F)	232	56	15	8	4	315

Source: Field data 2018

The findings as shown in table 4.4 demonstrate that female students who had engaged in the use of pain medications once or twice in the three months before the study were 43 percent (Table 4.4). Moreover, results show that 20 percent had engaged in alcohol use, 12 percent had used sleeping pills, 8 percent had used tobacco products while six percent had used cannabis during three months before the study. With 18 percent indicating that they used substances once or twice a day, it is evident that there was moderate use of substances. This emanates from the fact that the 18 percent were close to half of those who were engaging in substance use. These findings indicate that the most used substance in the preceding three months prior to the study was pain medications. All in all, it is evident that various kinds of substances were being used by female students at KMTC.

In addition, harmful use of various substances was measured by the following indicators: female students had a strong urge to indulge in substance use in three months preceding the study; and whether the participants' use of the substances led to legal, financial, social or health problems three months preceding the study; whether participants had failed in their normal duties as expected of them as a result of the use of the substances in the past three months, the study established whether substance use affected the performance and that the female students had attempted tocontrol and failed, or to reduce or abstain from using any of the substances in the last three months. Moreover, the level of harmful use was calculated by summing up 20 items that were measuring the harmful use of the substances. Three levels were established thus; low risk of harmful use (20-46), moderate risk of harmful use (47-73), and high risk of harmful use (74-100). These findings are presented in the following sections.

Moreover, thestudy assessed how often the respondents had a robust urge to use the listed substances three months before the study as shown in Table 4.5

Table 4.5: Female Students with Strong Desire for Substance Use in the Preceding Three Months

Substances	Never (%)	Once or twice (%)	Monthly (%)	Weekly (%)	Daily or almost daily (%)	Total
Tobacco products	93	4	2	0	1	100
Alcohol	76	16	5	2	2	100
Cannabis	87	5	1	4	3	100
Sleeping pills	91	5	1	2	1	100
Pain medication	61	24	7	1	7	100
Average (%)	81	11	3	2	3	100
Average (F)	256	34	10	6	9	315

Source: Field data 2018

Study findings (Table 4.5) revealed that 24 percent had experienced a robust urge or desire to use pain medications, 16 percent had a desire for alcohol, 5 percent had a strong urge for cannabis, and sleeping pills, while 4 percent had a strong urge for tobacco products. The study also enquired from the respondents whether they had in the three months before the study engaged in substance use that led to legal, financial, health, or social problems.

Table 4.6: Female Students who's Substance Use Led to legal, financial, health, or social problems

Substances	Never (%)	Once or twice (%)	Monthly (%)	Weekly (%)	Daily or almost daily (%)	Total
Tobacco products	97	1	1	1	0	100
Alcohol	78	18	2	1	1	100
Cannabis	88	8	1	3	0	100
Sleeping pills	84	12	1	2	1	100
Pain medication	71	21	6	2	0	100
Average (%)	**84**	**12**	**2**	**2**	**0**	**100**
Average (F)	**263**	**38**	**7**	**6**	**1**	**315**

Source: Field data 2018

Findings from the study presented in Table 4.6 established that 12 percent had once or twice engaged in illicit use of sleeping pills which led to legal, social, physical health or financial challenges once or twice. Further, results indicated that 18 percent had once or twice engaged in alcohol, 21 percent in pain medications, 8 percent in cannabis, and one percent in tobacco products which led to legal, financial, health, or social problems.

The study also assessed how substance use affected the everyday roles and responsibilities of female students. Respondents were required to indicate how often substance use in the three months preceding the study had made them fail to do their duties.

Table 4.7: How Often Substance Use Affected Performance

Substances	Never (%)	Once or twice (%)	Monthly (%)	Weekly (%)	Daily or almost daily (%)	Total
Tobacco products	93	2	0	1	4	100
Alcohol	81	12	2	4	1	100
Cannabis	89	2	2	4	3	100
Sleeping pills	93	4	1	1	1	100
Pain medication	83	13	2	1	1	100
Average (%)	**88**	**7**	**1**	**2**	**2**	**100**
Average (F)	**277**	**21**	**4**	**7**	**6**	**315**

Source: Field data 2018

Study findings (Table 4.7) show that 13 percent of the respondents had in the past month failed to do what was normally expected of them due to the misuse of pain medications. Moreover, 12 percent who had used alcohol, 4 percent who had used sleeping pills, and two percent who had used tobacco products and cannabis had once or twice failed to do what was normally expected of them.

Further on substance use, the study sought to establish whether the respondents had ever tried and failed to control, cut down, or stop using any of the substances listed.

Table 4.8: Ever Tried and Failed to Control, Cut Down or Stop Substance Use

Substances	No, Never (%)	Yes, in the past 6 months (%)	Yes, but not in the past 6 months (%)
Tobacco products	92	4	4
Alcohol	78	11	11
Cannabis	89	6	5
Sleeping pills	92	6	2
Pain medication	84	14	2

Source: Field data 2018

Findings presented in Table 4.8 demonstrate that of those who engaged in substance use, 92 percent who used tobacco and a similar percentage who used sleeping pills, 89 percent who had used cannabis, 84 percent who had used pain medication and 78 percent who had used alcohol had never tried and failed to control, cut down or stop using those substances. This shows that there were low levels of dependence to these substances.

The study used the resultant substance involvement scores to classify the risk level of the female students. Determination of the risk level was done based on the following classifications (0 – 3 = Lower Risk, 4 – 26 = Moderate Risk and 27 and above = High Risk). The study results are presented in Table 4.9.

Table 4.9: Levels of Risk for Harmful Use of Substances

Level	Frequency	Percent
Low	188	59.7
Moderate	105	33.3
High	22	7.0
Total	**315**	**100.0**

Source: Field data 2018

Study findings (Table 4.9) reveal that 59.7 percent of the participants were classified as low risk, 33.3 percent as moderate risk while 7 percent were classified as high risk. These findings imply that though most of the respondents faced moderate to low risk, there was a significant population of female students that had high risk of substance use.

Non-medical use was measured by whether participants had ever used any substanceby injection for non-medical use within and without three months preceding the survey. The study sought to establish whether the participating female students had ever used any substance by injection.

Table 4.10: Have you used any drug by injection?

Response	Frequency	Percent
No, never	259	82
Yes, in the past 3 months	9	3
Yes, but not in the past 3 months	14	4
Non-response	33	11
Total	**315**	**100**

Source: Field data 2018

Findings presented in Table 4.10 indicatethat 82 percent of the participants had not engaged in any substance use through injection while 3 percent had engaged in substance use through injection in the three months before the study. Ten student leaders were interviewed. In this light, they were presented with various questions on substance use. The first question posed to them was, “what is the level of substance use among female students at KMTC?” Numerous responses were obtained. It was made manifest that there were high levels of use of substance of choice among female students. These included sleeping pills and various forms of prescription medication. There were also some groups of female students who were involved in alcohol use in

"girls clubs." These were groups of female students who exhibited high levels of "sisterhood," and had some form of consensus on behavioural choices including substance use and other risk-taking behaviours. Cigarette use was also common though among fewer female students. An example of the words of one of the students who said:

> *"Some girls hang up together and abuse alcohol and other substances together. They also pool resources together to enable them afford the substances."*

The student leaders were also presented with the question, "are there differences in substance use among female students of different age groups?" The findings showed that younger students tend to have higher tendencies to use substances. In this regard, those in the first and second years of study (ages 18 to 21) had higher substance use behaviours.

Although some older students still used substances, a larger proportion seemed to have moved on from substances with the vast majority concentrating on their career choices. This was evidenced in the words of one of the students who said:

> *"The younger students (freshers) have a lot of time and want to explore "life." Some have never had enough time to experiment with various substances. As a result, they are likely to try emerging substances. Others are not still focused on their studies and are at crossroads between being teenagers and adults. They are thus more likely to use drugs."*

The students were asked if "there were differences in substance use among female students from different religions (i.e. Christian, Muslim, Hindu, etc.)?" The

findings show that there were higher numbers of substance-use among female students from Christian background compared to those from other faiths such as Muslims and Hindus. However, this could be attributed to the fact that there were fewer students from the latter faiths. In addition, students from Muslim faiths were more conservative than those from the other faiths. However, some female students from some Christian sects such as Pentecostals and Evangelicals were also equally conservative and did not use substances compared to those from other Christian groups.

Lastly, students were presented with the question, "are there differences in substance use among female students based on the high school they attended (i.e. boarding, mixed day, national, county, sub-county, etc.)?" The findings show that students from mixed day tended to be more resilient to substance use than those from boarding schools. Students from boarding schools tended to use narcotic substances more than those from day schools. This could be attributable to influences in boarding schools by students from various backgrounds.

Moreover, most beginners in substance use came from boarding schools compared to those from mixed-day schools. When asked for the explanation of this trend, the interviewees said that confined and strict boarding schools protected some of the girls from learning about the consequences of substance use early in life. When they joined KMTC, they had all the freedom, independence and time to start exploring and experimenting.

4.3 Presentation of Research Analysis and Findings

This section presents the findings of the study. These findings are presented in line with the study objectives.

4.3.1 Family Domain Factors and Substance Use

The first objective of the study was to assess the influence of family domain factors on substance use amongst KMTC female students. The participating female students were required to indicate the extent to which the listed family domain factors applied to them.

Table 4.11: Family Domain Factors and Substance Use

Statement	Not at all (%)	Small extent (%)	Moderate extent (%)	High extent (%)	Very high extent (%)	Total
Parental use of substances	12	31	43	11	3	100
Sibling use of substances	15	23	37	13	12	100
My family disapproves of substance use	6	1	8	9	76	100
Perceived harm of substance use	4	12	9	54	21	100
I have a supportive and nurturing family	2	2	10	15	71	100
Parental monitoring	3	11	12	41	33	100
My siblings have high influence on me	25	7	18	16	34	100
Average (%)	**10**	**12**	**19**	**23**	**36**	**100**
Average (F)	**32**	**38**	**60**	**72**	**113**	**315**

Source: Field data 2018

Study results presented in Table 4.11 indicate that parental use of substances was moderate 43 percent. In addition, 37 percent of the students, who were the majority of the students studied, indicated that substance use among siblings was moderate. 76 percent of the respondents came from families who very highly

disapproved of substance use. There was high extent of perceived harm of substances due to parental support 54 percent. Further findings indicated that 71 percent of the respondents had families who supported and nurtured female students to a very high extent. In addition, 41 percent pointed out that to a high extent parental monitoring checked their propensity to use substances while 34 percent indicated that they had siblings who had high influence on them to a very high extent. In this regard, families could protect against substance use among female students.

Furthermore, the respondents were presented with the question, "are there differences in substance use among female students based on the families they come from? (family with both parents; single parent family; divorced/ separated parents/ guardians, etc.)" The responses showed that there were differences. In cases where parents were unable to offer a protective edge to the female students, they could fall into negative peer influences. Divorced parents also exposed female students to psychological challenges that influenced substance use. Influence from broken families also meant that female students did not have role models to guide them from negative influences on substance use.

Additionally, families with high levels of tolerance for substance use encouraged substance use at home. Families also had other indirect influences on substance use among female students. In this light, religious values in families guided female students to abstain from substance use in the context of traditional religious values. This reduced substance use among female students from these families. Families with instances of physical and sexual abuse on girls also pushed some female students to substance use as a coping mechanism.

4.3.3 Peer Domain Factors and Substance Use

The study sought to determine the influence of peer domain factors on substance use among KMTC female students. To assess the peer domain factors, several factors were listed and the study participants were asked to indicate the extent to which the statements applied to them.

Table 4.12: Peer Domain FactorsandSubstance Use

Statement	Not at all (%)	Small extent (%)	Moderate extent (%)	High extent (%)	Very high extent (%)	Total
I want to be like my peers	70	12	9	4	5	100
My friends use substances	43	23	14	10	10	100
My friends disapprove substance use	24	14	20	17	25	100
I encounter peer influence to use substances	51	13	18	11	7	100
Average (%)	46	16	14	11	13	100
Average (F)	145	50	44	35	41	315

Source: Field data 2018

Study findings in Table 4.12 demonstrate that 70 percent of the respondents did not copy their peers at all, 43 percent had friends who did not use substances at all, 25 percent had friends who disapproved substance use to a very high extent and 51 percent did not encounter peer influence to use substances at all. The interviewees were asked, "Are there differences in substance use among female students based on the friends they keep (peers)?" Most non-substance using students were initiated into the use of substances at KMTC.

Moreover, mobility to narcotics often depends on the kind of friends that one keeps. This is explained by the fact that access to substances is dependent on the availability among friends. Conversely, some friends discouraged peers from using

substances. In this regard, having friends with conservative religious views militated against substance use among some female students. In this regard, one student leader said:

> *"There are instances in which students had conservative religious roommates in their hostels that discouraged them from using substances. This reduced the level of use of these substances."*

It was thus made manifest that peers could either augment the substance use behaviours of female students and vice versa.

4.3.4 College Factors and Substance Use

The third objective of the study was to assess the influence of college factors on substance use among KMTC female students on substance use. Various college factors were listed, and the participating female students were requested to establish the extent to which the factors applied to them.

Table 4.13: College Factors and Substance Use

Statement	Not at all (%)	Small extent (%)	Moderate extent (%)	High extent (%)	Very high extent (%)	Total
I perform well academically	4	3	24	42	27	100
KMTC has norms on substance use	5	6	13	22	54	100
I have access to support services regarding substance use	44	11	8	25	12	100
Fear of legal, social, and physical consequences of substance use.	2	3	12	24	59	100
Average (%)	14	6	14	28	38	100
Average (F)	44	19	44	88	120	315

Source: Field data 2018

Study results presented in Table 4.13 show that 42 percent of the respondents indicated that to a high extent, they performed well academically. Moreover, 54 percent indicated that to a very high extent, KMTC has strict norms on substance use. However, 44 percent indicated that they had no access at all to support services regarding substance use. Further, 59 percent indicated to a very high extent; the fear of legal, social, and physical consequences of substance use. This could provide psychosocial support to students who were already dependent on substances of choice. Having access to help services for substance use and having strict guidelines against substance use in college can be a significant protective factor against substance use.

The interviewees were asked the question, "Do college-related factors such as rules and regulations as well as guidance and counselling support among others influence substance use among female students?" The findings showed that various college-related factors affected substance use behaviours among female students. Guidance and counselling programs advocated by the college aimed at offering psychosocial support to female students had positive influences on female students.

In addition, peer counselling and mentorship programs were put in place; this also had positive influences on female students. Moreover, strict rules on behaviours in college militated against the use of substances due to the associated consequences for non-compliance with rules. The colleges also encouraged lecturers and mental health professionals to offer psycho education on substance use among students. This also created advocacy against substance use among female students at KMTC. College schedules and academic demands also limited the time that students had to indulge in various behaviours including substance use. In instances when students had a lot of free time, they became prone to negative influences.

The student leaders and administrators were presented with the question, "What are the ways used to mitigate substance use among KMTC female students?" The findings show that KMTC colleges used various methods to mitigate substance use. These included guidance and counselling by lecturers, peer counsellors and mentorship programs as pointed out. There were also advocacy programs undertaken in colleges by student clubs, NACADA, and non-governmental organisations among others. In this light, students were constantly receiving psycho education on the dangers of substance use.

The interviewees were posed with the question, "in which other ways can substance use among KMTC female students be mitigated?" Various methods of mitigating substance use were suggested. These included strengthening guidance and counselling programs, training more peer counsellors and mentors. KMTC need to establish and finance advocacy programs to enhance the dissemination of information on the negative influence of substance use. Additionally, social media can be used to support advocacy campaigns for the youth in Kenya.

4.4 Correlation

Pearson correlation analysis was done for each of the three study variables (represented by selected statements per variable) and substance use (the dependent variable).

4.4.1 Correlation Analysis for Family Domain Factors and Substance Use

The findings obtained show that there was a positive and significant relationship between substance use and family domain factors (parental use of substance, $r=0.492$, $p<0.05$; Sibling use of substance, $r=0.500$, $p<0.05$; family

disapproves of substance use, r=0.337, p<0.05; perceived harm of substance use, r=0.452, p<0.05; I have supportive and nurturing family, r=0. 385, p<0.05; parental monitoring, r=0.481, p<0.05; My siblings have high influence on me, r=0.547, p<0.05). Each of the various family domain factors had positive and significant influences on substance use.

Table 4.14: Table Correlation Analysis for Family Factors

Correlations

		Substance Use	Parental use of substance	Sibling use of substance	My family disapproves of substance use	Perceived harm of substance use	I have a supportive and nurturing family	Parental monitoring	My siblings have high influence on me
Substance Use	Pearson Correlation	1	.492**	.500**	.337**	.452**	.385**	.481**	.547**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N	315	315	315	315	315	315	315	315

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

Source: Field data 2018

4.4.2 Correlation Analysis for Peer Domain Factors and Substance Use

The findings obtained show that there was a positive and significant relationship between substance use and peer domain factors (My siblings have high influence on me, r=0.547, p<0.05; I want to be like my peers, r=0.340, p<0.05; My friends use substances, r=0.500, p<0.05; My friends disapprove substance use, r=0.545, p<0.05; I encounter peer influence to use substances, r=0. 505, p<0.05). This each of the various peer domain factors had positive and significant influences on substance use.

Table 4.15: Table Correlation Analysis for Peer Domain Factors

Correlations							
		Substance Use	My siblings have high influence on me	I want to be like my peers	My friends use substances	My friends disapprove substance use	I encounter peer influence to use substances
Substance Use	Pearson Correlation	1	.547**	.340**	.500**	.545**	.505**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	315	315	315	315	315	315

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

Source: Field data 2018

4.4.3 Correlation Analysis for College Factors and Substance Use

The findings obtained show that there was a positive and significant relationship between substance use and college factors (I perform well academically, $r=0.477$, $p<0.05$; KMTC has strict norms on substance use, $r=0.465$, $p<0.05$; I have access to support services regarding substance use, $r=0.538$, $p<0.05$ and; fear of legal, social, and physical consequences of substance use, $r=0.436$, $p<0.05$. Each of the various college domain factors had positive and significant influences on substance use.

Table 4.16: Table Correlation Analysis for College Domain Factors

Correlations						
		Substance Use	I perform well academically	KMTC has strict norms on substance use	I have access to support services regarding substance use	Fear of legal, social, and physical consequences of substance use.
Substance Use	Pearson Correlation	1	.477**	.465**	.538**	.436**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	315	315	315	315	315

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

Source: Field data 2018

4.5 Regression Analysis

Regression analysis was also utilised to test the study level to which each independent study variable affected the dependent variable. In this regard, the dependent variable, substance use was tested against three domains namely: family factors; peer factors, and college factors.

Model Summary for Family Domain Factors

The findings showed that the family domain factors explained 30.3 percent of change in substance use among the female KMTC students (r squared = 0.303).

Table 4.177: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551[a]	.303	.287	.69115

a. Predictors: (Constant), My siblings have high influence on me, My family disapproves of substance use, Parental use of substance, I have a supportive and nurturing family, Perceived harm of substance use, Parental monitoring, Sibling use of substance

Source: Field data 2018

Analysis of Variance for Family Domain Factors

As shown in Table 4.18, all family domain factors significantly predict substance use as shown by a significantF test (F= 19.083, p <0.05).

Table 4.188: Analysis of Variance for Family Domain Factors

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.812	7	9.116	19.083	.000[a]
	Residual	146.652	307	.478		
	Total	210.463	314			

a. Predictors: (Constant), My siblings have high influence on me, My family disapproves of substance use, Parental use of substance, I have a supportive and nurturing family, Perceived harm of substance use, Parental monitoring, Sibling use of substance

b. Dependent Variable: Substance Use

Source: Field data 2018

Regression Coefficients for Family Domain Factors

The findings also indicated that substance use had a statistically significant relationship with only one of the family factors (My siblings have high influence on me, B= .529, t=3.880, P<0.05). As such, it can be deduced that most of the predictors of substance use among female students was influence from their siblings.

Table 4.19: Regression Coefficients

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.099	.246		8.544	.000
	Parental use of substance	.002	.144	.003	.013	.990
	Sibling use of substance	.080	.145	.121	.553	.581
	My family disapproves of substance use	-.041	.104	-.056	-.392	.696
	Perceived harm of substance use	.001	.149	.001	.006	.996
	I have a supportive and nurturing family	.031	.140	.033	.218	.828
	Parental monitoring	-.067	.158	-.088	-.422	.674
	My siblings have high influence on me	.269	.069	.529	3.880	.000

a. Dependent Variable: Substance Use

Source: Field data 2018

Model Summary for Peer Domain Factors

The findings showed that the peer domains explained 30.4 percent of change in substance use among the female KMTC students (r squared = 0.304).

Table 4.20: Model Summary for Peer Domain Factors

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551[a]	.304	.295	.68737

a. Predictors: (Constant), I encounter peer influence to use substances, I want to be like my peers , My friends disapprove substance use, My friends use substances

Analysis of Variance for Peer Domain Factors

As shown in Table 4.21, the peer domain factors statistically significantly predict substance use as shown by a significant F test (F= 33.862, p <0.05).

Table 4.21: Analysis of Variance for Peer Domain Factors

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.996	4	15.999	33.862	.000[a]
	Residual	146.468	310	.472		
	Total	210.463	314			

a. Predictors: (Constant), I encounter peer influence to use substances, I want to be like my peers , My friends disapprove substance use, My friends use substances

b. Dependent Variable: Substance Use

Source: Field data 2018

Regression Coefficients for Peer Domain Factors

The findings also indicated that substance use had a statistically significant relationship with only one of the peer domain factors (My friends disapprove substance use, B=0.379, t=2.969, P<0.05). As such, it can be deduced that having friends who disapproved substance use was the most important determinant of substance use among female students.

Table 4.22: Regression Coefficients for Peer Domain Factors

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.066	.095		21.669	.000
	I want to be like my peers	-.081	.072	-.121	-1.125	.261
	My friends use substances	-.011	.124	-.019	-.089	.929
	My friends disapprove substance use	.203	.068	.379	2.969	.003
	I encounter peer influence to use substances	.173	.113	.295	1.529	.127

a. Dependent Variable: Substance Use

Source: Field data 2018

Model Summary for College Domain Factors

The findings showed that the peer domain explained 55 percent of change in substance use among the female KMTC students (r squared = 0.550).

Table 4.23: Model Summary for College Domain Factors

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.550[a]	.302	.293	.68815

a. Predictors: (Constant), Fear of legal, social, and physical consequences of substance use., I have access to support services regarding substance use, I perform well academically KMTC has strict norms on substance use

Source: Field data 2018

Analysis of Variance for College Domain Factors

As shown in Table 4.24, the college domain factors statistically significantly predict substance use as shown by a significantF test (F= 33.608, p <0.05).

Table 4.24: Analysis of Variance for College Domain Factors

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.661	4	15.915	33.608	.000[a]
	Residual	146.803	310	.474		
	Total	210.463	314			

a. Predictors: (Constant), Fear of legal, social, and physical consequences of substance use., I have access to support services regarding substance use, I perform well academically KMTC has strict norms on substance use

b. Dependent Variable: Substance Use

Source: Field data 2018

Regression Coefficients for College Domain Factors

The findings also indicated that substance use had a significant relationship with only one of the college factors (I have access to support services regarding substance use, B=0.407, t=5.360, P<0.05). As such, it can be deduced that college support services were the most important determinant of substance use among female students. If students had support services at college, it was possible for them to shun substance use.

Table 4.25: Regression Coefficients for College Domain Factors

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.883	.225		8.354	.000
	I perform well academically	.043	.095	.051	.449	.654
	KMTC has strict norms on substance use	.121	.115	.170	1.051	.294
	I have access to support services regarding substance use	.211	.039	.407	5.360	.000
	Fear of legal, social, and physical consequences of substance use.	-.041	.133	-.046	-.305	.760

a. Dependent Variable: Substance Use

Source: Field data 2018

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to assess the influence of family, peer, and college domain factors and substance use amongst female students at Kenya Medical Training College (KMTC) Nairobi and Thika Campuses which are situated in Nairobi and Kiambu counties respectively. The study's objectives focused on assessing the influence of family domain factors, peer domain factors, college factors and substance use amongst female students at KMTC. This chapter presents a discussion of the findings, a summary of key findings, conclusion, and recommendations.

5.2 Discussions

The section details a discussion of the study findings as per the study objectives. The researcher compares the study's findings with the findings from other studies.

5.2.1 Family Domain Factors and Substance Use

The first objective of the study was to assess the influence of family domain factors on substance use amongst KMTC female students. Study results show that family domain factors had a significant influence on substance use among female students at KMTC ($\beta = 0.394$; $p < 0.000$). The participating female students were required to indicate the extent to which the listed family domain factors applied to them. Descriptive statistics showed that parental use of substances was moderate 43 percent. This could have positive influence on substance use among female students as pointed out by Blume who posits that female students whose parents did not smoke

or engage in alcoholism were less likely to smoke or use alcohol (Blume, 2012). In addition, 37 percent of the students, who were the majority of the students studied, indicated that substance use among siblings was moderate. This shows that the home environment of the students could exert some influence on the female students (Brown et al., 2010). 76 percent of the respondents came from families who very highly disapproved of substance use. This could check substance use due to such disapproval from parents (Burnhams et al., 2011).

Furthermore, there was also high extent of perceived harm of substances due to parental support 54 percent. Further findings indicated that 71 percent of the respondents had families who supported and nurtured them to a very high extent. These findings further corroborate those of Burnhams et al. (2011) who underlined the role of parental support on substance use among students. In addition, 41 percent pointed out that parental monitoring checked their propensity to use various substances while 34 percent indicated that they had siblings who had high influence on them to a very high extent. In this regard, families are protective against substance use among female students as posited by Adelekan (Adelekan, 2010).

In addition, the respondents were asked if there were differences in substance use among female students based on the families they come from. The responses showed that there were differences. In cases where parents were unable to offer a protective edge to the female students, they could fall into negative peer influences (Hodder, et al., 2016). Parents who were divorced also exposed female students to psychological challenges that influenced substance use. Influence from broken families also meant that female students did not have role models to guide them from negative influences of substance use. These findings are in line with those of Kobasa who pointed out that the more parents are not able to act with authority consistently,

the more the young people are likely to conform to their peers (Kobasa, 2013). These findings also confirm the findings of Burnhams et al. that show that parental support is pivotal in checking substance use among students (Burnhams et al., 2011).

Furthermore families with high levels of tolerance for substance use encouraged substance use at home. This emanates from the fact that high societal tolerance had significant influence on substance use among students (UNODC, 2013). Families also had other indirect influences on substance use among female students. In this light, religious values in families guided female students to abstain from using substances in the context of traditional religious values. This reduced substance use among female students from these families as envisaged by the ecological systems theory (Pandian & Lakshmana, 2017). Families with instances of physical and sexual abuse on girls also pushed some female students to substance use as a coping mechanism. It is thus evident that family domain factors influenced substance use among students.

5.2.2 Peer Domain Factors and Substance Use

The study sought to determine the influence of peer domain factors and substance use among KMTC female students. To assess the peer domain factors, several factors were listed and the study participants were asked to indicate the extent to which the statements applied to them. Results further indicated that peer domain factors had a significant negative influence on substance use among the female students at KMTC ($\beta = 0.787$; $p = 0.000$). Descriptive studies demonstrate that 70 percent of the respondents did not copy their peers at all, 43 percent had friends who did not use substances at all, 25 percent had friends who highly disapproved substance use and 51 percent did not encounter peer influence to use substances at all.This

means that friends were pivotal in mitigating substance use as posited by Blume who found out that peers had a significant influence on substance use among students (Blume, 2012).

The interviewees were also asked to indicate if there were differences in substance use among female students based on the friends they keep (peers). Most non-substance using students were initiated into the use of substances at KMTC. This shows high levels of negative peer influences among the students (Hodder, et al., 2016). Moreover, mobility to narcotics often depends on the kind of friends that one keeps. This is explained by the fact that access to substances is dependent on the availability among friends. These findings are in line with a study in Uganda that showed that peer substance use was a significant predictor of its use by other peers as well as other behavioural problems such as violence (Jason, 2011).Conversely, some friends discouraged peers from using substance of choice. In this regard, having friends with conservative religious views militated against substance use among some female students.

There are instances in which students had conservative religious room-mates in their hostels that discouraged them from using substances. This reduced the level of use of these substances. It was thus made manifest that peers could either augment substance use behaviours of female students and vice versa. These findings align with those of Blume's study that established that friends' or peers' attitudes towards smoking were vital in influencing an individual to substance use. Disapproval of smoking or alcohol use by peers was negatively associated with smoking and alcohol use by their colleagues (Blume, 2012). It is thus evident that peer relationships that female students kept had significant influences on their substance use behaviours at KMTC.

5.2.3 College Factors and Substance Use

The third objective of the study was to assess the influence of college factors on KMTC female students and substance use. Various college factors were listed, and the participating female students were requested to establish the extent to which those factors applied to them. The study findings show that college factors had a significant negative influence on substance use among the female students at KMTC ($\beta = 0.312$; $p = 0.007$). Descriptive statistics show that 42 percent of the respondents indicated that to a high extent, they performed well academically. This could assuage substance use among the female students as shown by a study in both United States and South Africa that established that occasional drunkenness and use of marijuana was more significant among students who had poor academic performances (Perkins & Maxwell, 2011).

Moreover, 54 percent indicated that to a very high extent, KMTC has strict norms on substance use. This could check substance use since school guidelines had mitigating roles on substance use (Hodder, et al., 2016). However, 44 percent indicated that they had no access at all to support services regarding substance use.Further, 59 percent indicated that to a very high extent; they feared legal, social, and physical consequences of substance use. This could provide psychosocial support to students who are dependent to substances of choice (Pere, 2018).

Having access to help services for substance use and having strict guidelines against substance use in college can be a significant protective factor against substance use. These findings also agree with Hodder et al. who posits that female students in colleges as in the case of this study, who were supported at school by their

teachers and the school administration were more resilient than those others who did not get similar support (Hodder, et al., 2016).

The interviewees were asked if college-related factors such as rules and regulations as well as guidance and counselling support among others influenced substance use among female students. The findings showed that various college-related factors influenced substance use behaviours among students. Guidance and counselling programs for example aimed at offering psychosocial support to students who were using substances of choice (Pere, 2018). In other instances, peer counselling and mentorship programs were put in place.

As a result these programs had positive influences on female students. In addition, strict rules on behaviours in college militated against use of substances due to the associated consequences for non-compliance with rules (Hodder, et al., 2016). The colleges also encouraged lecturers and invited mental health professionals to psycho educate on substance use. This also created advocacy against substance use among female students at KMTC. College schedules and academic demands also limited the time that students had to indulge in various behaviours including substance use. Instances when students had a lot of free time, they became prone to negative influences. These findings agree with those of Windle that asserts that young people who are more engaged with extra school activities are less likely to engage in substance use as compared to those who are not engaged in such activities (Windle, 2010).

The student leaders and administrators were asked to point out ways used to mitigate substance use among KMTC female students. The findings show that KMTC colleges used various methods to mitigate substance use. These included guidance and counselling by peers and coaches (Pere, 2018), peer counsellors and mentorship

programs mitigated against substance use. There were also advocacy programs undertaken in colleges by student clubs, NACADA, and non-governmental organisations among others. In this light, students were constantly educated about the dangers of substance use. This is in line with the study by Hagembe and Simiyu who posit that tertiary colleges work together with NACADA and the Ministry of Education to advocate against substance use (Hagembe & Simiyu, 2012).

The interviewees were asked to point out other ways that substance use among KMTC female students can be mitigated. Various methods of mitigating substance use were suggested. These included strengthening guidance and counselling programs (Pere, 2018), training more peer counsellors and mentors. KMTC need to establish and finance advocacy programs to enhance the dissemination of information on the negative influence of substance use (Hagembe & Simiyu, 2012). Besides, social media can be used to support advocacy campaigns for the youth in Kenya.

5.3 Summary of Main Findings

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

5.3.1 Family Domain Factors and Substance Use

The first objective was to establish the influence of family domain factors and substance use amongst KMTC female students.Study results show that family domain factors had a significant influence on substance use among the female students at KMTC ($\beta = 0.394$; $p < 0.000$). Descriptive statistics showed that parental use of substances was moderate 43 percent. In addition, 37 percent of the students, who were the majority of the students studied, indicated that substance use among siblings was moderate. 76 percent of the respondents came from families who very highly

disapproved of substance use. There was high extent of perceived harm of substances due to parental support 54 percent. Further findings indicated that 71 percent of the respondents had families who supported and nurtured them to a very high extent. In addition, 41 percent pointed out that parental monitoring checked their propensity to use substances of choice while 34 percent indicated that they had siblings who had high influence on them to a very high extent. In this regard, families could protect against substance use among female students.

Likewise, the respondents were presented with the question, "are there differences in substance use among female students based on the families they come from? (i.e. family with both parents; single parent family; divorced parents; separated parents; guardians, etc.)". The responses showed that there were differences. In cases where parents were unable to offer a protective edge to the female students, they could fall into negative peer influences. Parents who were divorced also exposed female students to psychological challenges that influenced female students to substance use. Influence from broken families also meant that female students did not have role models to guide them from negative influences on substance use.

Furthermore families with high levels of tolerance for substance use encouraged substance use at home. Families also had other indirect influences on substance use among female students. In this light, religious values in families guided female students to abstain from substances in the context of traditional religious values. This reduced substance use among female students from these families. Families with instances of physical and sexual abuse on girls also propelled some female students to substance use as coping mechanism.

5.3.2 Peer Domain Factors and Substance Use

The second objective of the study was to determine the influence of peer domain factors and substance use among KMTC female students.Results further indicated that peer domain factors had a significant negative influence on substance use among the female students at KMTC (β= 0.787; p = 0.000). Descriptive studies demonstrate that 70 percent of the respondents did not copy their peers at all, 43 percent had friends who did not use substances at all, 25 percent had friends who highly disapproved substance use and 51 percent did not encounter peer influence to use substances at all.The interviewees were asked if there were differences in substance use among female students based on the friends they keep (peers). Most non-substance using students were initiated into the use of substances at KMTC.

Moreover, mobility to hard narcotics often depends on the kind of friends that one keeps. This is explained by the fact that access to substances is dependent on the availability among friends. Conversely, some friends discouraged peers from using substances. In this regard, having friends with conservative religious views militated against substance use among some female students. It was thus made manifest that peers could either augment the substance use behaviours of female students and vice versa.

5.3.3 College Factors and Substance Use

Lastly, the study sought to assess the influence of college factors on KMTC female students' substance use. Study findings show that college factors had a significant negative influence on substance use among the female students at KMTC (β =0.312; p = 0.007). Descriptive statistics show that 42 percent of the respondents indicated that to a high extent, they performed well academically. Moreover, 54

percent indicated that to a very high extent, KMTC has strict norms on substance use. However, 44 percent indicated that they had no access at all to support services regarding substance use.Further, 59 percent indicated that to a very high extent; they feared legal, social, and physical consequences of substance use. This could provide psychosocial support to students who were already dependent on substances. Having access to help services for substance use and having strict guidelines against substance use in college can be a significant protective factor against substance use.

The interviewees were asked the question, "Do college-related factors such as rules and regulations as well as guidance and counselling support among others influence substance use among female students?" The findings showed that various college-related factors influenced substance use behaviours among students. Guidance and counselling units for example had programs aimed at offering psychosocial support to female students who were engaging in substances of choice. In other instances, peer counselling and mentorship programs were put in place.

As a result these contributions had positive influences on female students. In addition, strict rules on behaviours in college militated against use of substances due to the associated consequences for non-compliance with rules. The colleges also encouraged lecturers and invited professionals to give talks on substance use. This also created advocacy against substance use among female students at KMTC. College schedules and academic demands also limited the time that students had to indulge in various behaviours including substance use. Instances where students had a lot of free time, they became prone to negative influences.

The student leaders and administrators were presented with the question, "What are the ways used to mitigate substance use among KMTC female students?" The findings show that KMTC colleges used various methods to mitigate substance

use. These included guidance and counselling, peer counsellors and mentorship programs were pointed out. There were also advocacy programs undertaken in colleges by student clubs, NACADA, and non-governmental organisations among others. In this light, students were constantly being psycho educated about the dangers of substance use.

Finally, the interviewees were asked to point out the other ways in which substance use among KMTC female students could be mitigated. Various methods of mitigating substance use were suggested. These included strengthening guidance and counselling programs, training more peer counsellors and mentors. KMTC need to establish and finance advocacy programs to enhance the dissemination of information on the negative influence of substance use. Also, social media can be used to support advocacy campaigns for the youth in Kenya.

5.4 Conclusions

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

5.4.1 Family Domain Factors and Substance Use

Family domain factors had a significant influence on substance use among female students at KMTC. The values that female students got from their families continued to offer a protective edge against substance use among female students. Students with families who shunned substance use thus had stronger resilience to substance use than students from families that tolerated the use of various substances of choice.

5.4.2 Peer Domain Factors and Substance Use

Peer domain factors also had a significant influence on substance use among female students at KMTC. In this regard, the similarity between peers is critical in influencing behaviour. Therefore, having peers who do not use substances and having peers who disapprove of substance use is expected to lead in preventing female students from engaging in substance use. Conversely, having friends who use substances could lead to the use of the substances of choice among female students.

5.4.3 College Factors and Substance Use

College factors also had significant influence on female substance use. In this regard, having access to help services for substance use and having strict guidelines against substance use in college can be a significant protective factor against substance use. Guidance and counselling, peer counselling programs as well as mentorship programs also played pivotal roles in checking substance use among female students.

5.5 Recommendations

Based on the findings of the study, the following recommendations were made.

5.5.1 Family Domain Factors and Substance Use

Parents and siblings need to educate female students against substance use. This can be achieved through strong family values and creating environments where substances are not used at home. Strong social bonds are recommended to protect female students from negative peer influences.

5.5.2 Peer Domain Factors and Substance Use

The study recommends that KMTC need to implement peer-support prevention and advocacy programs against substance use. There is need to put in place advocacy programs aimed at encouraging female students to keep good company.

5.5.3 College Factors and Substance Use

Prevention programs targeting female students to reduce risk factors associated with substance use are recommended. KMTC need to implement peer-led substance awareness campaigns that integrate life skills to enable students to resist substance use. KMTC need to engage the students in having peer support groups that create awareness and discourage substance use.

Access to help services was also recognised as key in protecting against substance use. The study recommends to the government and its agencies such as NACADA to step up their efforts in creating awareness on available support services for students engaging in substance use so that female students who engage in substance use can get help.

5.6 Areas of Further Research

The study focused on female students and the peer, family, and college factors that were used to explain substance use. The Researcher recommends a future study to be conducted on both male and female students and compare the resilience and prevalence of substance use so that an all-inclusive preventive measure is instituted by KMTC.

REFERENCES

Adelekan, O. (2010). Substance use among secondary school students in an urban setting in Nigeria: Prevalence and associated factors. *African Journal of Psychiatry, 13*(1), 52-57.

Ahmadi, R., & Mirshekari, S. (2012). Motives for drinking, alcohol consumption, and alcohol-related problems among British secondary-school and university students. *Addictive Behaviors, 31*(12), 2147-2157.

Ahmadi, R., & White, T. (2013). Health behaviors of students attending historically Black colleges and universities: results from the National College Health Risk Behavior Survey. *Journal of American College Health, 46*(3), 109-117.

Akers, R. (1998). *Social learning and social structure: A general theory of crime and deviance.* Boston: Northeastern University Press.

Akindele, O. M. (2016). Medical students' Knowledge and Views about Drug Abuse in Ogun State, Nigeria a Pilot Survey. *Journal of Drug Education, 46*(2), 163-173.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorder* (5th ed.). Washington: American Psychiatric Association.

Arevalo, F., Guillermo, P., & Hortensid, A. (2013). Resilient offspring of alcoholics: a longitudinal study from birth to age 18. *Journal of Studies on Alcohol and Drugs, 47*(1), 34-40.

Atwoli, L., Mungla, P., Ndung'u, M. N., Kinoti, K. C., & Ogot, E. M. (2011). Prevalence of substance use among college students in Eldoret, Western Kenya. *BMC Psychiatry*, 11-34.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice Hall.

Bernard, A. (2014). Personal characteristics and resilience and its consequences: conceptual issues and empirical illustrations. *Journal of Personality, 77*(6), 1645-1676.

Blume, S. (2012). Understanding addiction disorders in women. In A. Graham, T. Schultz, & V. Wilford (Eds.), *Principles of Addiction Medicine* (Vol. 2, pp. 1173- 1190). American Society of Addiction Medicine: Chevy Chase, MD.

Boitt, R. (2016). *The prevalence of alcohol abuse among Edgerton University students in Njoro-Kenya.* Master's Thesis. University of Nairobi.

Bot, A. (2015). A feminist approach to substance abuse treatment and service delivery. *Social Work in Health Care, 19*(3-4), 67-83.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(1), 513-531.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge: Harvard University Press.

Bronfenbrenner, U. (1986). Recent advances in research on the ecology of human development. In R. Silbereisen, K. Eyferth, & G. Rudinger (Eds.), *Development as action in context: Problem behaviour and normal youth development* (p. 1). New York: Springer.

Brown, G., Johnston, L., Patrick, M., O'Malley, & Jerald, G. (2010). *Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings.* Available from http://www.monitoringthefuture.org; on line.

Burnhams, N., Myers, B., & Parry, C. (2011). To what extent do prevention programmes reflect evidenced-based practices? Findings from an audit of

alcohol and other drug prevention programmes in Cape Town, South Africa. *African Journal of Drug and Alcohol Studies, 8*(1), 1-8.

Catalano, M., Miller, V., & Hawkins, D. (2012). Ambiguity in black drinking norms: An ethnohistorical interpretation. In a. A. In Bennett L. (Ed.). New York: Plenum Press.

Collings, P., & Magojo, S. (2015). Risk and resilience factors for substance use among street adolescents: Assessment and development of an integrative model. *Asian Social Work and Policy Review, 11*(3), 216-233.

Cooper, D. (2006). Educational Research: An Introduction, (5th ed).

Cooper, D., & Schindler, P. (2011). *Business Research Methods* (11th ed.). New York: McGraw-Hill Education.

Davis, S., & Spillman, S. (2011). Reasons for Drug Abstention: A Study of Drug Use and Resilience. *Journal of psychoactive drugs, 43*(1), 14-19.

Eggun, H., & Vaughan, L. (2014). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology, 75*(5), 671-682.

Garmezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. *Pediatric Annals, 20*(1), 459-460.

Gathumbi, D. (2013). Prevalence of substance use among students in a Kenyan University: a preliminary report. *East African Medical Journal, 76*(1), 301-306.

Gfroerer, B. (2011). The natural history of Drug use from adolescents to mid-thirties in a general population sample. *America Journal of the Public Health, 85*(1), 41-47.

GoK. (2010). *Preventing Drug Abuse in learning institutions.* Nairobi: Ministry of Education.

Good, p., & McKay, B. (2012). Interventions to reduce harm associated with adolescent substance use. *An international review. Lancet, 369*(1), 1391-1401.

Hagembe, O. N., & Simiyu, S. (2012). *Programme Coordinator of Public Awareness.* Nairobi: NACADA.

Henderson, S. (2013). A review of 25 long-term adolescent tobacco and other drug use prevention program evaluations. *Preventive Medicine, 37*(1), 451-474.

Hodder, R. K., Freund, M., Bowman, J., Wolfenden, L., Gillham, K., Dray, J., & Wiggers, J. (2016). Association between adolescent tobacco, alcohol and illicit drug use and individual and environmental resilience protective factors. *Disease in Childhood, 6*(11), 54-67.

Homa, R. (2011). Pattern of Drug alcohol and Tobacco use among high scl students in Santiago. *Pattern of Drug alcohol and Substance abuse, 5*(3), 39-44.

Jason, T. (2011). *Adolescent Drug Abuse in Kenya: Impact on Reproductive Health.* Nairobi: New World Printers.

Kabiru, C. W., Beguy, D., Ndugwa, R. P., Zulu, F. M., & Jessor, R. (2012). Making it": Understanding adolescent resilience in two informal settlements (slums) in Nairobi, Kenya. *Child and Youth Services, 33*(1), 12-32.

Karanja, S. M. (2010). Transitional challenges facing first year students in Kenyan Public Universities: A case of Kenyatta University. *Interdisciplinary Review and Management, 2*(1), 41-50.

Kiess, M. (2007). *Data collection in surveys.* London: Wiley.

Kobasa, P. (2013). Cannabis use before age 15 and subsequent executive functioning. *British Journal of Psychiatry, 198*(6), 442-447.

Kothari, C., & Garg, G. (2014). *Research Methodology. Methods and Techniques (3rd ed.).* New Delhi: New Age International.

Matin, N., & Taylor, R. (2015). Emergence of human resilience in coastal ecosystems under environmental change. *Ecology and Society, 20*(2), 1.

McDonald, S. (2010). Predictors of drug use among South African adolescents. *Journal of Adolescent Health, 38*(1), 26-34.

Mugenda, A. G. (2008). *Social Science Research: Theory and Principles.* Nairobi: Acts Press.

Mugenda, A. G., & Mugenda, O. M. (2012). *Research methods: Qualitative and qualitative approaches.* Nairobi: ACTS Press.

Muriungi, S. K., Ndetei, D. M., Karanja, J., & Matheka, C. W. (2013). Alcohol and substance abuse risk among students at the Kenya Medical Training College. *Mental Health and Substance Use, 7*(2), 125-133.

Mwendwa, B. (2012). *Role of religion in compating drugs and substance abuse in secondary schools in Kenya: A case study of Nairobi East District.* Master's Thesis. Mount Kenya University, Kenya.

NACADA. (2012). *Rapid situation assessment of the status of drug and substance abuse in Kenya.* Nairobi: NACADA.

Ndetei, D. M. (2001). *Drug abuse in Kenya: Information, Needs, Resources and Analysis (INRA) project for Kenya.* Nairobi: Africa Mental Health Foundation.

Nicolas, J. (2011). *Research Design: Qualitative, Quantitative and Mixed Approaches (2nd ed.).* Thousand Oaks: Sage.

Oakes, J., Maier, A., & Daniel, J. (2017). *Community schools: An evidence-based strategy for equitable school improvement.* Palo Alto, CA: Learning Policy Institute.

Okari, J. O. (2018). Effects of drug abuse on academic performance among secondary school students in Masaba North Sub County, Nyamira County. Kenya: University of Nairobi.

Pandian, R. D., & Lakshmana, G. (2017). Risk and resilience factors for substance use among street adolescents: Assessment and development of an integrative model. *Asian Social Work and Policy Review, 11*(3), 216-233.

Paquette, D., & Ryan, J. (2011). Bronfenbrenner's Ecological Systems Theory. *Human Ecology, 39*(2), 16-20.

Parry, S. (2014). *Drug use prevention among young people: A review of reviews.* London: National Institute for Health and Clinical Excellence.

Pere, J. (2018). Examining Drug Prevention Strategies among Undergraduate Students in Public Campuses in Kenya. *Journal of Education in Developing Economies, 1*(2), 7.

Perkins, C., & Maxwell, D. (2011). Alcohol, Tobacco and Cannabis use among Nova Scotia adolescents: Implications for prevention and harm reduction. *Canadian Medical Association Journal*, *156*(10), 387-393.

Rohde, J. (2012). Clinical relevance of heavy drinking during the college years: Cross-sectional and prospective perspectives. *Psychology of Addictive Behaviors, 15*(1), 350-359.

Search Institute. (2011). *The prevention of substance use, risk and harm in Australia: A review of the evidence.* Perth: Search Institute.

Seligman, G. (2012). *International Institute for Prevention of Drug Abuse: A Handbook for Primary and Secondary Teachers' Guidelines in Drug Dependence Preventive Education.* Nairobi: Lama Limited Printers.

Suarez, E., Perez, C., Martinez, M., & Rivera, R. (2017). *Applications of Regression Models in Epidemiology.* USA: John Wiley & Sons.

Sutherland, E. (1947). *Principles of Criminology 4th Edition.* Philadelphia: Lippincott.

UNODC. (2013, June 23). Drug Control Strategies at the National and International levels. pp. 1-8.

UNODC. (2017). *World Drug Report 2017.* Vienna: UNODC.

VicHealth. (2015). *Current theories relating to resilience and young people: a literature review.* Melbourne: Victorian Health Promotion Foundation.

Werner, E. (1989). High-risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry, 59*(1), 72-81.

WHO. (2010). *WHO-ASSIST V3.0.* Geneva: WHO.

WHO. (2011). Fetal alcohol syndrome: dashed hopes, damaged lives. *Bulletin of the World Health Organization, 89*(6), 393-468.

WHO. (2016). *The health and social effects of nonmedical cannabis use.* Geneva: World Health Organization.

Windle, J. (2010). Gender differences in attitudes toward alcohol, tobacco, and other drugs. *Social Work, 42*(3), 231-241.

World Drug Report. (2016). *United Nations Office on Drugs and Crime (UNODC): Executive Summary.* United Nations Publication.

Yamane, T. (1967). *Statistics: An Introductory Analysis (2nd ed.).* New York: Harper and Row.

APPENDICES

Appendix I: Questionnaire to female Students at KMTC

The questionnaire is aimed at seeking information about substance use at KMTC. Please answer the questions by ticking or fillingin thespacesprovided. Your participation is on voluntary basis, and all information provided will be held confidentially and only used for purposes of this study.

Thank you for agreeing to take part in this study about family, peer and college factors influencing substance use among KMTC female students. The questions are about your experience of lifetime use of substances or use in the past three months. Substances can be swallowed, inhaled, smoked, snorted, injected or taken in the form of pills. Some of the substances listed may be by prescription. For this study, we will exclude prescription medications. However, if you have taken such medications for reasons other than prescription or taken them more frequently or at higher doses than prescribed, please indicate. Please be assured that information on illicit use will be treated with strict confidentiality.

SECTION A: GENERAL INFORMATION

1. What is your religion?

Christian	[ ]
Muslim	[ ]
Hindu	[ ]
Other/specify	[ ]

2. Kindly indicate your age _____years.

3. What type of secondary school did you attend? Tick all that apply.

Boarding	[ ]
Day	[ ]
Mixed	[ ]
Girls only	[ ]

4. Please indicate the type of the family that you were brought up in?

Nuclear	[ ]
Extended	[ ]
Single parent	[ ]
Step Family	[ ]

5. What is your position towards substance use now?

Recovering [ ]

Still using [ ]

Never used [ ]

SECTION B: HISTORY OF SUBSTANCE USE AT KMTC

6. In your life, which of the following substances have you **ever** used? (Non-medical use)

Substances	NO	YES
Tobacco products (cigarettes, chewing tobacco)		
Alcohol (wine, spirits, beer)		
Cannabis (weed, pot, grass)		
Sleeping pills		
Pain medications		

7. In the **past three months**, how often have you used the substances listed below?

Substances	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco)					
Alcohol (wine, spirits, beer)					
Cannabis (weed, pot, grass)					
Sleeping pills					
Pain medications					

8. During the **past three months**, how often have you had a strong desire or urge to use the substances listed below?

Substances	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco)					
Alcohol (wine, spirits, beer)					
Cannabis (weed, pot, grass)					
Sleeping pills					
Pain medications					

9. (Skip if you have never used any of the substances listed)
During the past three months, how often has your use of the substances listed below led to legal, financial, health, or social problems?

Substances	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco)					
Alcohol (wine, spirits, beer)					
Cannabis (weed, pot, grass)					
Sleeping pills					
Pain medications					

10. (Skip if you have never used any of the substances listed)

During the **past three months**, how often have you failed to do what was normally expected of you because of use of the substances listed below?

Substances	Never	Once or twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco)					
Alcohol (wine, spirits, beer)					
Cannabis (weed, pot, grass)					
Sleeping pills					
Pain medications					

11. (Skip if you have never used any of the substances listed)
Have you ever tried and failed to control, cut down or stop using any of the substances listed below?

Substances	No, Never	Yes in the past 6 months	Yes, but not in the past 6 months
Tobacco products (cigarettes, chewing tobacco)			
Alcohol (wine, spirits, beer)			
Cannabis (weed, pot, grass)			
Sleeping pills			
Pain medications			

12. Have you ever used any drug by injection? **(Non-medical use only)**

No, Never [ ]
Yes in the past 3 months [ ]
Yes, but not in the past 3 months [ ]

SECTION C: FAMILY FACTORS

13. For the factors listed in the table below, please indicate the extent that they apply to you. Indicate the appropriate rating.

Statement	Not at all	Small extent	Moderate extent	High extent	Very high extent
Parental Use of Substance					
Sibling use of substance					
My family disapproves of substance use					
Perceived harm of substance use					
I have a supportive and nurturing family					
Parental monitoring					
My siblings have high influence on me					

SECTION D: PEER FACTORS

Statement	Not at all	Small extent	Moderate extent	High extent	Very high extent
I want to be like my peers					
My friends use substances					
My friends disapprove substance use					
I encounter peer pressure to use substances					

SECTION E: COLLEGE FACTORS

Statement	Not at all	Small extent	Moderate extent	High extent	Very high extent
I perform well academically					
KMTC has strict norms on substance use					
I have access to support services regarding substance use					

'Thank you for your participation and input'

Appendix II: Interview Protocol

1) What is the level of substance use among female students at KMTC? Please explain.
2) Are there differences in substance use among female students of different age groups? Please explain.
3) Are there differences in substance use among female students from different religions (i.e. Christian, Muslim, Hindu etc.)? Please explain.
4) Are there differences in substance use among female students based on the high school they attended (i.e. boarding, mixed day, national, county, sub-county etc.)? Please explain.
5) Are there differences in substance use among female students based on the families they come from? (I.e. family with both parent; single parents; divorced parents; separated parents; guards etc.) Please explain.
6) Are there differences in substance use among female students based on the friends they keep (peers)? Please explain.
7) Do college related factors such as rules and regulations as well as guidance and counselling support among others affect influence substance use among female students? Please explain.
8) What are the ways used to mitigate substance use among KMTC female students? Please explain.
9) In which other ways can substance use among KMTC female students be mitigated? Please explain.

Appendix III: Research AuthorizationFrom AfricaNazareneUniversity

AFRICA NAZARENE
UNIVERSITY

2nd February, 2018

RE: TO WHOM IT MAY CONCERN

Cerina Atieno Ouma (15J03 EMCP003) is a bonafide student at Africa Nazarene University. He/She has finished his/her course work and has defended his/her thesis proposal *entitled* ***"Resilience Predictors for Substance Use Among Female Students at Kenya Medical Training College, Nairobi and Thika Campuses.***

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

Prof. Rodney Reed
Deputy Vice Chancellor, Academic Affairs

Appendix IV: Research Authorization From KMTC

Telegrams: "MEDTRAIN" Nairobi
TELEPHONE: NAIROBI 2725191, 2725711/14
020-2081822, 020-2181823,
0772 592 059, 0706 541 869
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.1V/

Date 16th March, 2018

Cerina Atieno Ouma,
Africa Nazarene University,
P.O. Box 53067-00200
NAIROBI

RE: PERMISSION TO COLLECT DATA AT KENYA MEDICAL TRAINING COLLEGE

Reference is made to your letter dated 2nd February, 2018 requesting for permission to conduct research at KMTC for your Masters Thesis.

Your proposal titled "*Resilience predictors for substance use among female students at Kenya Medical Training College Nairobi and Thika Campuses*" has been reviewed and we are satisfied that no ethical issues will be violated among 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 KIPLAGAT
FOR: DIRECTOR/CEO

Appendix V: Research Authorization from Ministry of Education

Republic of Kenya
MINISTY OF EDUCATION
STATE DEPARTMENT OF BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: **RCE/NRB/1/14/ (39)**

DATE: **14TH March, 2018**

CERINA ATIENO OUMA
AFRICA NAZARENE UNIVERSITY
P.O Box 53067-00200
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization on **"Resilience predictors for substance use among female students at Kenya Medical Training College Nairobi and Thika campuses".**

This office has no objection and authority is hereby granted for a period ending **12th March, 2019** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

14 MAR 2018

JAMES KIMOTHO
FOR: REGIONAL COORDINATOR OF EDUCATION
NAIROBI

Cc:
Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

Appendix VI: Research Authorization from Kiambu County Commissioner

OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
COUNTY COMMISSIONER, KIAMBU

Telephone: 066-2022709
Fax: 066-2022644
E-mail: countycommkiambu@yahoo.com
When replying please quote

County Commissioner
Kiambu County
P.O. Box 32-00900
KIAMBU

Ref.No: **ED.12 (A) /1/VOL.I/77**

16th March, 2018

Cerina Atieno Ouma
Africa Nazarene University
P. O. Box 53067 - 00200
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to National Commission for Science, Technology and Innovation letter Ref No. **NACOSTI/P/18/62601/21731** dated **12th March, 2018.**

You have been authorized to conduct research on ***"Resilience predictors' for substance use among female students at Kenya Medical Training College in Thika Campuses in Kiambu County".*** The data collection will be carried out in ***Kiambu County*** *for a period ending* ***12th March, 2019.***

You are requested to share your findings with the County Education Office upon completion of your research.

ALICE M. NYATHOKO
FOR: COUNTY COMMISSIONER
KIAMBU COUNTY

Cc County Director of Education
KIAMBU COUNTY

National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
NAIROBI

Deputy County Commissioner (***For information and record purposes***)
THIKA WEST SUB-COUNTY

"Our Youth our Future. Join us for a Drug and Substance free County".

Appendix VII: Research Authorization from NACOSTI

INTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P. O. Box 2300-00900
KIAMBU

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/62601/21731** Date: **12th March, 2018**

Cerina Atieno Ouma
Africa Nazarene University
P.O. Box 53067-00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Resilience predictors for substance use among female students at Kenya Medical Training College Nairobi and Thika Campuses"*** I am pleased to inform you that you have been authorized to undertake research in **Kiambu & Nairobi Counties** for the period ending **12th March, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, selected Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GP Kalerwa
GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

The County Commissioners
Selected Counties.

The County Directors of Education
Selected Counties.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

Appendix VIII: NACOSTI Research Permit

THIS IS TO CERTIFY THAT:
MISS. CERINA ATIENO OUMA
of AFRICA NAZARENE UNIVERSITY,
0-100 NAIROBI,has been permitted to
conduct research in *Kiambu , Nairobi Counties*

on the topic: *RESILIENCE PREDICTORS FOR SUBSTANCE USE AMONG FEMALE STUDENTS AT KENYA MEDICAL TRAINING COLLEGE NAIROBI AND THIKA CAMPUSES*

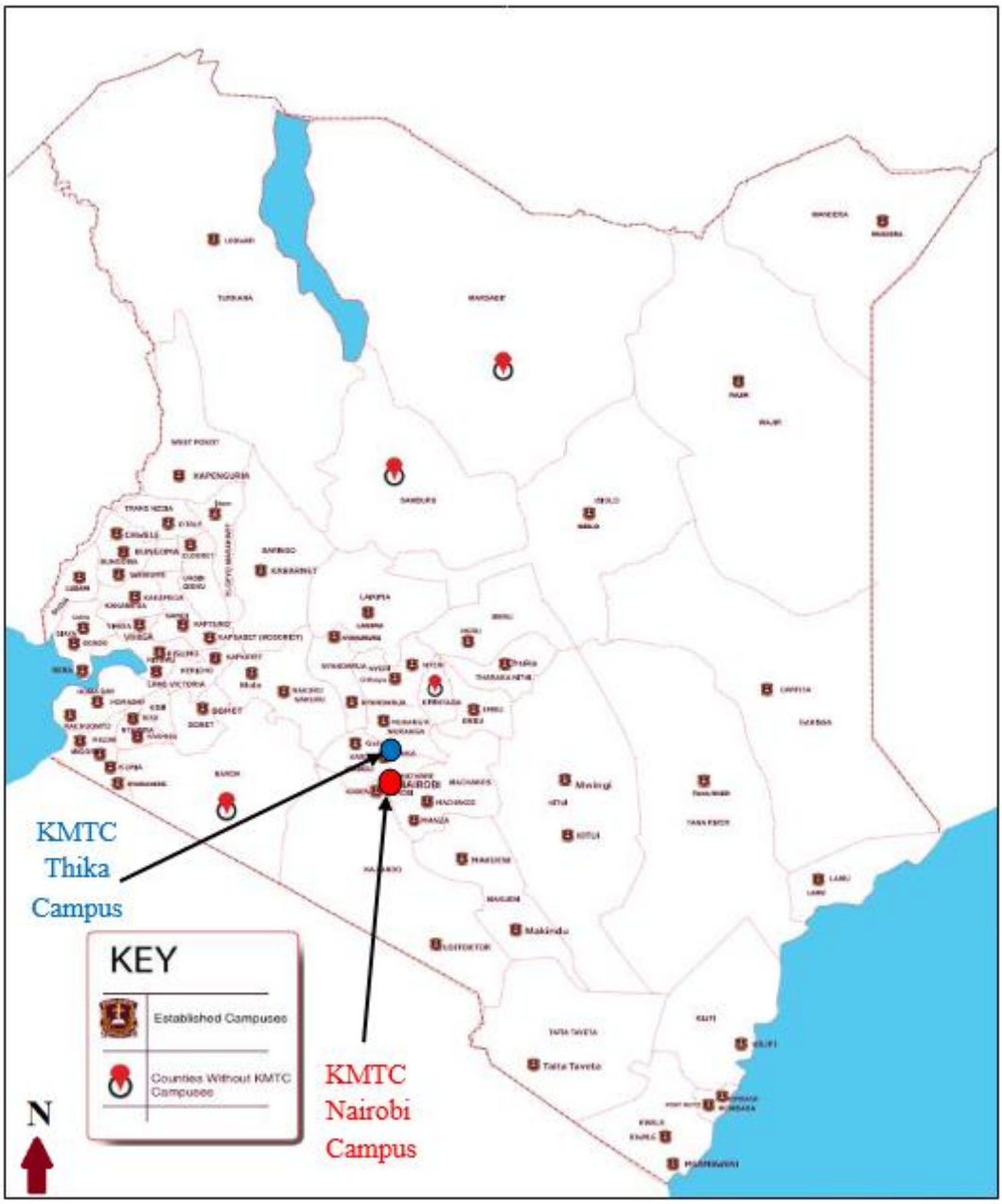
for the period ending:
12th March,2019

Permit No : NACOSTI/P/18/62601/21731
Date Of Issue : 12th March,2018
Fee Recieved :Ksh 1000

Ouma
.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

Appendix IX: Map of Study Area



Source: Adapted from KMTC Satellite Campuses Map (2020).