

**FACTORS ASSOCIATED WITH SUBSTANCE USE
AMONG YOUTH IN COLLEGES (18-25 YEARS) IN
MLOLONGO, MACHAKOS COUNTY**

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**Factors associated with substance use among youth in colleges (18-25 years) in
Mlolongo, Machakos County**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENT.....	iii
TABLE OF CONTENTS	iv
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
LIST OF APPENDICES	x
ABBREVIATIONS AND ACRONYMS.....	xi
OPERATIONAL DEFINITION OF TERMS	xii
ABSTRACT.....	xiv
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background information	1
1.2 Statement of the problem	2
1.3 Justification of the study	3
1.4 Theoretical Framework.....	3
1.5 Conceptual Framework.....	4
1.6 Research questions.....	5
1.7 Objectives.....	5
1.8 General objective	5
1.9 Specific objectives	6
CHAPTER TWO.....	7

LITERATURE REVIEW	7
2.1 Global epidemiology and prevalence of substance use among youth	7
2.2 Challenges of substance use in Kenyan colleges	8
2.3 Commonly used substances among youth in Kenya	9
2.4 Causes of drug use among college youth.....	11
2.5 Risk factors associated with substance use among the youth	13
2.6 Alcoholism in parents or other siblings	14
2.7 Inconsistent or abusive parenting	15
2.8 Peer factors.....	15
2.9 Achievement, social, and environmental factors.....	15
2.10 Effects of substance and drug use.....	16
2.11 The source of drugs.....	17
CHAPTER THREE.....	19
MATERIALS AND METHODS.....	19
3.1 Study design	19
3.2 Study site.....	19
3.3 Study population.....	19
3.4 Selection criteria	20
3.5 Inclusion criteria	20
3.6 Exclusion criteria	20
3.7 Sample size determination	20
3.8 Sampling procedure	21

3.9	Focus group discussions.....	22
3.10	Key informant interviews.....	23
3.11	Variables of the study	23
3.12	Dependent variable	23
3.13	Independent variable.....	23
3.14	Data collection.....	24
3.15	Data management and analysis	24
3.16	Data storage.....	24
3.17	Data analysis.....	25
3.18	Ethical considerations	25
CHAPTER FOUR		27
RESULTS		27
4.1	Baseline characteristics of the study participants	27
4.1.1	Distribution of study participants by gender.....	27
4.1.2	Distribution of study participants by age	27
4.1.3	Distribution of study participants by marital status	28
4.1.4	Distribution of study participants by religion	29
4.2	Prevalence of substance use among college youth in Mlolongo.....	29
4.3	Characteristics of substance users among college youth in Mlolongo	30
4.4	Commonly used substances	33
4.5	Substance use and its reasons.....	34
4.6	Perceptual factors associated with substance use among youth in Mlolongo	37
4.7	Focus group discussions.....	39

4.7.1	Knowledge and attitude of substance use among youth in colleges in Mlolongo Location	39
4.7.1.1	Common definition of substance by college youth in Mlolongo	39
4.7.1.2	When asked about their perception on substance use	39
4.7.1.3	Types of commonly known substance(s)	39
4.7.2	Substances commonly used in Mlolongo	40
4.7.3	Reasons why youth in Mlolongo indulge in substance use	40
4.8	Key informant opinion on substance use	40
4.8.1	Factors promoting substance use	40
4.8.2	Measures to control substance use	41
4.8.3	Commonly used substances in Mlolongo	41
CHAPTER FIVE		42
DISCUSSION, CONCLUSION AND RECOMMENDATIONS		42
5.1	Discussion	42
5.1.1	Prevalence of substance use	42
5.1.2	Types of used substance	43
5.1.3	Duration of substance use among college youth in Mlolongo	44
5.1.4	Reasons for substance use among college youth in Mlolongo	45
5.1.5	Factors influencing substance use among college youth in Mlolongo	47
5.2	Conclusions	49
5.3	Prevalence of substance use among youth in Mlolongo	49
5.4	Types of substance used among college youth in Mlolongo	49
5.5	Factors for drug use among college youth in Mlolongo	50
5.6	Recommendations	51
REFERENCES		52
APPENDICES		60

LIST OF TABLES

Table 4.1: Baseline demographic characteristics of the study participants	29
Table 4.2: Characteristics of substance users	32
Table 4.3: Substance use and its reasons	34
Table 4.4: Demographic characteristics associated with substance use	36
Table 4.5: Perceptual factors associated with substance use among college youth in Mlolongo	37

LIST OF FIGURES

Figure 1.1	Conceptual Framework based on Modified Social Stress Model	5
Figure 4.1:	Distribution of study participants by age group	28
Figure 4.2:	Distribution of study participants by marital status	28
Figure 4.3:	Prevalence of substance use in Mlolongo locality	30
Figure 4.4:	Frequently stated used substances	33

LIST OF APPENDICES

Appendix I: Informed consent form for the participants	60
Appendix II: Key informant interview consent form	62
Appendix III: Informed consent form for the focus group discussion.....	65
Appendix IV: Questionnaire	68
Appendix V: Key informant interview guide.....	72
Appendix VI: Focus group discussion thematic guide.....	73

ABBREVIATIONS AND ACRONYMS

AIDS:	Acquired immunodeficiency syndrome
CDC:	Centre for Disease Control
CNS:	Central Nervous System
DSU:	Drug and Substance use
FGD:	Focus Group Discussions
GYTS:	Global Youth Tobacco Survey
HIV:	Human Immunodeficiency Virus
ITROMID:	Institute of tropical medicine and infectious diseases
JKUAT:	Jomo Kenyatta University of Agriculture and Technology
KEMRI:	Kenya Medical Research Institute
KESSHA:	Kenya Secondary School Heads Association
KII:	Key informant interviews
KIPRA:	Kenya institute for public policy research and analysis
NACADA:	National Agency for the Campaign against Drug Abuse
NEC:	National Ethical Review Committee
SU:	Substance use
SPSS:	Statistical Package for Social Studies
SSC:	Scientific Steering Committee
UNODC:	United Nation Office on Drug and Crime
MUC	Machakos University College
SJVTC	ST. Joseph Vocational Training Centre
RCTC	Rhematec Computer Training College

OPERATIONAL DEFINITION OF TERMS

- Drug:** Any product other than food or water that affects the way people feel, think, see, and behave. It is a substance that due to its chemical nature affects physical, mental and emotional functioning. It can enter the body through chewing, inhaling, smoking, drinking, rubbing on the skin or injection.
- Drug policy:** A brief statement outlining an institution's stand or position on procedures for dealing with drug-related issues. It may be reflected in the college rules and guidelines, and is also often a reflection of the laws of Kenya. In Kenya, drug trafficking and abuse is considered a criminal offence under the Narcotic Drugs and Psychotropic Substances Control Act of 1994.
- Drug related problems:** This term is used to describe all negative effects associated with drug abuse such as violence, conflicts with friends or school authorities, destruction of institutional property and academic underperformance.
- Illegal drugs:** In this study illegal drugs refer to the substances that the government regards as harmful to the mental and physical wellbeing of the individual, hence controlling or discouraging their consumption by law.
- Legal drugs:** Legal drugs refer to those such as alcohol and tobacco that are potentially dangerous but whose consumption is allowed by the government.
- Substance abuse:** Refers to the use of any chemicals, drugs and industrial solvents that produce dependence (psychological and physical) in a percentage of individuals who take them. It can also be

used to refer to repeated non-medical use of potentially addictive chemical and organic substances. According to (WHO, 2000), substance abuse includes the use of chemicals in excess of normally prescribed treatment dosage and frequency, even with knowledge that they may cause serious problems.

Youth:

Refers to young people between 15 and 35 years according to the African Youth Charter. The majority of students in Kenyan colleges are between 18 and 25 years. The term youth therefore includes this age bracket of students.

ABSTRACT

Substance use has been identified among the top problems confronting Kenya today especially among the youth. It affects people's health as well as social-economic and social-cultural welfare. Most young people are exposed or involved in substance use at very early ages and this has become a subject of public concern worldwide partly because of its potential to contribute to unintentional and intentional bodily harm. Incidences of drug and alcohol use and related anti-social behavior have tremendously increased in recent years in Kenya. This has become a matter of concern to the Kenyan government and other sectors. Mlolongo, situated along Nairobi-Mombasa highway is a rapidly developing town with various colleges where majority of the students are the youth. It is an internationally recognized transit point for trucks where sex trade is rampant; Sex trade is known to be influenced by substance use, whose prevalence, and factors associated with the use has not been documented. The study therefore evaluated the prevalence of substance use, types of substances used and factors influencing substance use among youth attending various colleges located in Mlolongo. The cross-sectional study enrolled and consented 152 youth attending Machakos University College, St Joseph Vocational Training Centre and Rhematec Computer Training College. The sample was based on proportion to population, where systematic random and simple random sampling techniques were used in each college. Focus group discussions (FGD) and Key Informant Interviews (KII) were used to gather information about substance use and associated factors. Out of the 152 college students, 53.9% of them were female. The students mean age was 21.26 (SD 2.43) years with median of 21 years (range 18 to 25 years). Majority 46.7% of the youths were aged between 18 to 20 years. Most of them (88.2%) were single. Of the 152 college students in Mlolongo, 42 (27.6%) of them were using different substances. Among the 42 substance users, alcohol was the most commonly used substance (66.7%), followed by Miraa (19%) and Tobacco 14%; 92.9% of them felt high-experienced a unique feeling from their usual normal body functioning after using substances while 70% of them had used these substances for a duration between one and two years. Further, over half (54.8%) of the users had tried cutting down on the frequencies and quantities of consumed substance. Despite the use, majority 75.7% confirmed that substance use was against college regulations. Peer pressure 75%, poor parenting 19.1% and the ease of availability 15.1% were the commonly stated reasons for using substance. Married students (OR 0.12, 95% CI 0.02 to 0.8), students who believed that it was wrong to use substances (OR 0.4, 95% CI 0.12 to 0.7) were less likely to use substances. On the other hand, students who believed that substance boosted their emotion (OR 2.9, 95% CI 1.55 to 5.7) and those who stated that the substance affected their moods (OR 4.5, 95% CI 2.1 to 10.2) were more likely to use substances. From FGDs and KII discussions it emerged that a significant proportion of

youths are using drugs. The trend on the rise of these cases was a big concern both to parents, leaders and the society as a whole. Some of the substances mentioned included; Tobacco found in cigarettes, cigars, bidis, and smokeless tobacco (snuff, spit tobacco, chew); Alcohol found in liquor, beer, and wine. Cannabinoids (marijuana and hashish). Opioids including heroin and opium. Stimulants such as cocaine and amphetamine. Further, factors associated with substance use among college youths in Mlolongo included lack of employment, poverty, easy of availability of these substances, peer pressure, poor upbringing and high cash flow. In conclusion, substance use among Mlolongo college students was high. Youthful factors such as demography, beliefs, and emotional needs greatly influenced substance use. Steps such as enforcement of substance use laws, youth skill empowerment for job creations, developments of rehabilitation facilities, integration of substance use and abuse in the education curriculum, and emphasis on guidance and counseling to control indiscipline in school are paramount in mitigating substance use.

CHAPTER ONE

INTRODUCTION

1.1 Background information

Substance use refers to the consumption of psychoactive substances, including alcohol and illicit drugs. The NIDA (2017) lists substances of use, including tobacco, alcohol, illicit and prescribed drugs, indicating their common and street names, how they are generally administered, and their potentially harmful health effects. The use of psychoactive substances among adolescents and young adults has become a subject of public concern worldwide partly because of its potential to contribute to unintentional and intentional injury (Atwoli, Mungla, Ndung'u, Kinoti, & Ogot, 2011). US national data indicate that almost one half of adolescents have smoked cigarettes in their lifetime. Among 12th grade students, about 42% have tried marijuana and almost three out of four consumed alcohol in their lifetime (Eaton, et al., 2010). Factor analysis guiding the identification of clusters of behaviors among a large sample of adolescents indicates that adolescents engaging in risk-seeking behaviors, such as tobacco, alcohol and marijuana use have almost twice the odds ratio of unhealthy eating (Oreskovich, et al., 2015). Substance use and poor dietary practices are prevalent among adolescents, (Eaton, et al., 2010).

A study by Krill, Johnson, and Albert (2016), examining substance use, physical activity and diet in a sample of 18-year-old male and female students found clustering of unhealthy behaviors; both males and females who smoked engaged in unsafe drinking and females had low levels of fiber whereas males had high fat intake. It has also been found that across cultures, among the European American, African American, and Chinese adolescents, drug use was highly associated with high sensation seeking and low authoritative parenting (Krill, Johnson, & Albert, 2016).

Research shows that at-risk youth who use substances are more likely to be involved in violent behavior, drop out of school, truancy, and engage in multiple unhealthy behaviors (Atwoli et al, 2011). Previous research suggests that friends are an important source of cigarettes, alcohol, and illicit drugs. The grave consequences of substance use reported were that there was prevalence of substance use disorders (SUDs) among adolescents who received services in public sectors of care in San Diego (Oreskovich et al., 2015).

In Kenya, the most commonly used and even abused drugs are alcohol, tobacco, bhang (marijuana), glue, miraa (khat) and psychotropic drugs. From the foregoing, drug use is a reality among the youth and Kenya is not exceptional (Lai, Cleary, Sitharthan, & Hunt, 2015). According to Lai, Cleary, Sitharthan and Hunt (2015), if the rate at which young people have indulged in drug use is not curbed, then the future of the societies in Kenya is worrisome and a solution must be urgently formulated (Lai, Cleary, Sitharthan, & Hunt, 2015). Currently, there are no data on substance use and associated factors among the youth attending various colleges in Mlolongo. In this regard, this current study was carried out to evaluate the nature and extent of drug use and the factors associated with the use among youths in colleges located in Mlolongo location.

1.2 Statement of the problem

Substance use is one of the major social problems in Kenya with common and easily identifiable manifestations in public health. It is likely to lead to chronic use and abuse which may lead to cardiovascular effects, respiratory effects, significant damage of the liver, and the kidney, especially when heroin, inhalants and steroids are combined with alcohol and other drugs (Wu, et al., 2016). It is increasingly being recognized as one of the major problems affecting development alongside poverty, crime, unemployment and spread of HIV/AIDS. Kenya has received unparalleled media coverage with cases and documentaries on substance trafficking, use and abuse, highlighting what is a deep-rooted problem. Many people are reportedly dying from substance use. The government

has also put effort through the Alcoholic Drinks Control Act, 2010 to curb the vice (Whitesell, Bachand, Peel, & Brown, 2013). Despite all these associated problems and the government`s effort to control it, the vice still seems to be increasingly witnessed in Mlolongo and in the society. This study therefore sought to investigate the factors associated with substance use which were essential in providing benchmarks upon which programmatic interventions can be pegged and evaluated in order to curb the menace in Mlolongo.

1.3 Justification of the study

Substance use affects the youth especially those who are still studying since it may result into poor performance, truancy and drop out of colleges (Rose, Chassin, Presson, & Sherman, 2015). Among the reasons for selecting Mlolongo include; lack of information on substance use since there is no study on substance use that has been done in Mlolongo before. In addition, Mlolongo is an upcoming town and a transit point for trucks and this might increase the probability of substance use and abuse in the area. The study population in this study was the college youth since they could be easily accessed in their institutions. Further they are the future generation of this nation and therefore the information obtained would be used to protect them.

This study is therefore essential in providing information on the extent of substance use with the view of prompting authorities to take appropriate action to combat the problem. The study also provides the baseline indicators that will be tracked over time, as well as identifying new trends and patterns of substance use. Thus, in order to develop comprehensive health education programs and to achieve improved health and longevity, this study is essential.

1.4 Theoretical Framework

This study was guided by the Modified Social Stress Model (MSSM) which was used to understand drug use and abuse. The model developed by Rodes and Jason (1988) and modified by World Health Organization/Programme deals with Substance Abuse

(WHO/PSA) to include the effects of drugs or substances, the personal response of the individual to drugs and additional environmental, social and cultural variables (Sampson, 2011). Research has shown that in order to prevent substance use and abuse, two things must be taken into consideration: factors that increase the risk of developing the problem must be identified, and ways to reduce the impact of these factors must be developed (Bashirian, Hidarnia, Allahverdipour, & Hajizadeh, 2012). The theory maintains that there are factors that encourage drug use and finally abuse called risk factors. Factors that make people less likely to use drugs are called protective factors. The key to health and healthy families is increasing the protective factors while decreasing the risk factors. According to this model, if many risk factors are present in a person's life, that person is more likely to begin, intensify and continue the use of drugs, which could lead to drug abuse. The model identifies risk factors as stress (which could be due to the school or home environment, and adolescent developmental changes) and normalization of substance use which could be seen in terms of legality and law enforcement; availability and cost of drugs; advertising, sponsorship and promotion through media, as well as the cultural value attached to various drugs.

1.5 Conceptual Framework

According to Modified Social Stress Model (Rodes and Jason, 1988; Sampson, 2017) factors associated with substance abuse include stress, school or home environment, developmental changes, normalization of substance use, availability, cost, cultural value attached to various drugs. This definition has led to the design and development of various social models aimed at understanding the level and drivers of substance use. This study therefore adopted this model into a conceptual framework categorized as follows: (i) independent variables such as demographic related factors (age, gender, marital status, education level), socio-economic factors (income, employment, availability and drug costs), socio-cultural factors (cultural values and practices, peer pressure, household relationships) and legal framework (legality and law enforcement);

(ii) intervening variables which included awareness, stress levels and decision making capacity. These two variables work in tandem to substance use as shown in figure 1.1.

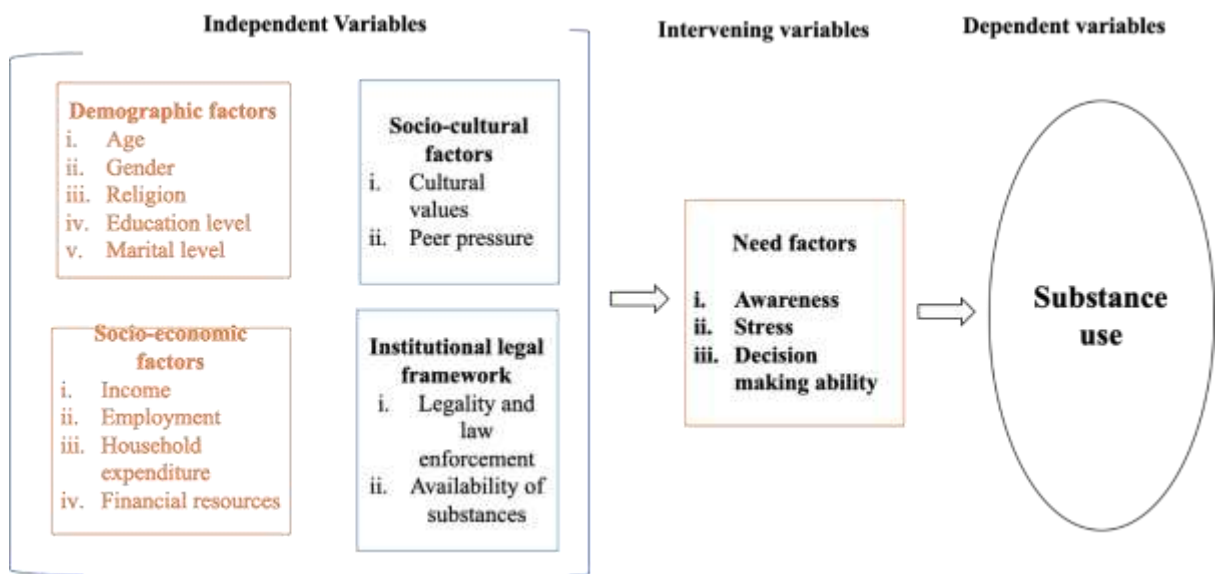


Figure 1.1 Conceptual Framework based on Modified Social Stress Model

Source (Sampson, 2017)

1.6 Research questions

1. What is the prevalence of substance use among youth in colleges in Mlolongo?
2. What are the commonly used substances by the youth in colleges in Mlolongo?
3. What are demographic and perceptual factors associated with substance use among college youth in Mlolongo?

1.7 Objectives

1.8 General objective

To determine factors associated with substance use among college youth aged 18-25 in Mlolongo Location.

1.9 Specific objectives

1. To determine the prevalence of substance use among college youth in Mlolongo Location
2. To determine the commonly used substances by the college youth in Mlolongo Location
3. To determine the demographic and perceptual factors associated with substance use among college youth in Mlolongo Location.

CHAPTER TWO

LITERATURE REVIEW

2.0

2

2.1 Global epidemiology and prevalence of substance use among youth

Research demonstrates that men's substance use starts early. Adolescent boys are more likely to use substances than their female counterparts (Eaton, et al., 2010). Among American high school seniors, marijuana is the most widely used illicit drug, followed by stimulants, inhalants, hallucinogens, and cocaine. A study in a Texas district found 77% of males in an alternative school compared to 20% in a traditional school to have smoked at least one cigarette in the past month. The same study found 85% and 88% of alternative school males and females, respectively reported having five drinks at one time on at least one occasion in the past month, compared to 55% and 34% of males and females in traditional schools (Harzke, et al., 2012).

Half of drug users in Kenya are aged between 10-19 years with over 60% residing in urban areas and 21% in rural areas (UNODC, 2004). The most commonly abused drugs in Kenya are alcohol, tobacco, bhang (marijuana), glue, miraa (khat) and psychotropic drugs. A national survey of alcohol and substance use among young people aged 10 to 24 in Kenya revealed that most young people use drugs and alcohol in their varieties e.g. alcohol, tobacco, marijuana etc.(Chesang, 2013). This is a point for concern, as studies

have shown substance use to be casually related to unplanned sex and intercourse, with the latter increasing sexually transmitted infections, and HIV/AIDS. This would partly explain the high prevalence rate in urban areas, which are home to slums in Kenya as most youth in the urban areas use or are exposed to drugs at very early ages (WHO, 2012).

2.2 Challenges of substance use in Kenyan colleges

Kenya has not been spared the pestilence of drugs by nature of its transit point for hard drugs from Columbia to European capitals. This drug trafficking has led to drug consumption and dependence among secondary and college students. While opening the Narcotics Drugs and Psychotropic Substances Control Seminar, it was noted that 60 percent of drug users are youth less than 18 years of age and recommended that drug users should be made to realize the dangers of drug use and abuse (Vallath, et al., 2017). A pilot survey carried out found that in most school compounds, there is a ready and wide variety of drugs. For instance in Lugari District, it was confirmed from the school records that in the last five years, over 20 students were either suspended or expelled from Lumakanda Secondary School for having taken drugs in the same year (King'ori, Kithuka, & Maina, 2014). Between 2001 and 2002, NACADA commissioned the first ever national baseline survey on the abuse of alcohol and drugs in Kenya which targeted Kenyan youth aged between 10 and 24 years. This revealed that substances of use, both illicit and licit were forming a sub-culture amongst Kenyan youth. Contrary to common assumptions, the survey demonstrated that substance use was widespread and that it

affected the youth mostly and cut across all social groups. The report concluded that substance use often begins at a very young age: for example, for students and non-students, it starts when they are in primary or secondary school (Changalwa, Ndurumo, Barasa, & Poipoi, 2012).

Another country wide survey conducted among students and school-leavers found that hard drugs like heroin, ecstasy, cocaine and mandrax were widely used in schools by children as young as ten years. The survey revealed that some legal substances such as alcohol, tobacco and khat were commonly abused leading to high incidence of violence in schools. Forty-three percent of students from Western Kenya confessed to alcohol abuse 41 percent in Nairobi, 27 percent in Nyanza, 26 percent in Central Province and 17 percent in Eastern province. Nairobi students led in cigarette smoking followed by Central, Coast, Eastern and Rift Valley provinces (Masese, Joseph, & Ngesu, 2012).

2.3 Commonly used substances among youth in Kenya

By 2006 the Kenyan Ministry health statistics indicated that smoking prevalence rates among children below 15 years old was slightly over 15 percent. The prevalence of smoking increased by age; among those aged 18 and 29, the rate was 44.8 percent, and 52 percent among college and university students (De Souza, Hunt, Asirwa, Adebamowo, & Lopes, 2016). In Kisumu District, a study showed in 2009 that 58% of the secondary school students in this District had consumed alcohol at some point in their lives. The study interviewed 458 students from nine secondary schools in Kisumu and found that use of drugs including alcohol, tobacco, khat, cannabis and cocaine had

risen drastically in the previous decade. By age 15, according to the study, some students were found to have already started using drugs and by the time they were 19 (33%) males and females had already become drug abusers (Otieno & Ofulla, 2009).

A study by NACADA, (2010) carried out in Nairobi, Nyanza, Coast, Eastern and Western Provinces indicated that tobacco cigarettes and alcohol which are termed as legal drugs had uniform distribution in those provinces. However, Miraa and Bhang consumption was prevalent in Nyanza and Western provinces. The study concluded that young people use drugs and there was need for prevention through drug education (Maithya, 2009).

United Nations Drug Control Programme (UNDCP) and the government of Kenya (GOK) carried out a research in 22 districts and all the divisions of Nairobi in 1994/1995. The study reported upward trend in the use of social drugs such as alcohol, tobacco, khat (Miraa) and illicit drugs such as Cannabis sativa. Narcotics such as heroin and cocaine were increasingly being used in Nairobi and Mombasa (Chege, Mungai, & Oresi, 2019). A study among university students at Kenyatta University found that all identified drugs were readily available and sources were known to those involved in the habit. The drugs were available in the surrounding slums including among the students themselves (Tumuti, Wang'eri, Waweru, & Ronoh, 2014).

2.4 Causes of drug use among college youth

Young people use drugs out of mixed motives, many of which are unclear to them. The issue of drug use has generated great interest among researchers as to why the youth get into drug use. There is consensus among most researchers that the following are the reasons why adolescents use drugs: The social reasons which influence youth to use drugs is because they want to feel more comfortable and to enjoy the company of peers. Association with people who glorify drugs also makes the adolescents try. Poor impulsive control and tendency to seek sensations rather than avoid harm since they provide pleasure by giving inner peace, joy, relaxation and exhilaration (Kimeli, Boyo, Munene, & Khasakhala, 2016). Lack of self-esteem which may result from academic failure and lack of commitment to educational goals also causes substance use. Drugs enable the youth to escape anxiety, emotional problems and to cope better in their world, e.g. amphetamines and khat help them to stay awake and study for exams. Some students believe that drugs help them to adapt to the ever changing environment- adolescence is a period of transition, many changes occur and adolescents try to adapt but the changes take place so fast, making identity difficult (Atkinson, Clair, Small, & Musau, 2016). Drugs also help the adolescents to avoid life demands and problems as a defense mechanism. In some cases, drugs are readily available e.g. cigarettes in shops, cheap alcohol in wines and spirits shops, khat, marijuana etc. some students are used by dealers to peddle drugs and this increases accessibility of drugs to the youth (Segal, Huba, & Singer, 2017).

Family influence ranges from genetic predisposition to alcohol, parental use and acceptance of drugs to poor parenting, family conflicts and economic hardship. Most adolescents begin drinking alcohol at home under parental supervision, especially during holidays and on special occasions. Idleness in association with peer pressure easily drives the youth into substance use. In most of these situations, parents and other guardians lack the skills to intervene. Lack of intervention is also further complicated by the stigma that is often attached to SU (Shakya, Christakis, & Fowler, 2012). In addition, some students use drugs for the purposes of satisfying curiosity. This curiosity has partly been aroused by seductive advertisement on print and electronic media which make the youth falsely believe that it is sophisticated to consume drugs for example alcohol and cigarettes (Scull, Kupersmidt, & Erausquin, 2014). Personality trait in one study, smokers in junior and senior schools were found to be more extroverted, happy – go-lucky and frank but less agreeable than non-smokers (Eisenstein, 2005).

Research has found that people who use alcohol and other drugs are among the most stigmatized groups in our society, for example, a study by the World Health Organization found that illicit drug addiction ranked as the most stigmatized health condition; addiction to alcohol ranked fourth (Livingston, Milne, Fang, & Amari, 2012). Poor enforcement of the law and weak policies, weak DSU awareness programmes, limited skills and personnel capacity of the law enforcers, unemployment and low prioritization of SU also directly contributes to the high prevalence of drug and

substance use. The implementation of effective awareness programmes is often affected by limited facilities and personnel skills. Since these programmes may be accorded low priority, they are often underfunded (Kelly & Westerhoff, 2009).

2.5 Risk factors associated with substance use among the youth

Risk factors are those that make substance use more likely. Research asserts that for individuals who begin using illicit substances at an early age, several risk factors may increase the likelihood of continued and problematic use in later ages, when substance-related crime becomes much more likely (Stone, Becker, Huber, & Catalano, 2012). A number of studies have suggested that there are risk factors which can lead the youth to use alcohol and other substances. They may turn to alcohol and illicit drugs to alleviate the stress associated with change, to fit in with peers, or they may be modeling the behavior of a family member. Whatever the cause of onset, it can lead to increased substance use and other delinquent activities. Knowledge of the risk factors that lead to adolescent substance use can foster greater understanding of the total problem (Sloboda, Glantz, & Tarter, 2012).

There are three basic categories of risk factors: demographic, social and behavioral. Analysis of demographic risk factors suggests that age and gender can predict the course of substance use. Social risk factors involve the influence of the family, peers, and the environment. Many studies suggest that in families where the use of alcohol and other drugs is high, the youth is also more likely to become involved. Youth whose peer group

is involved with alcohol and other drugs is also more likely to become involved (Wills, Knight, Williams, Pagano, & Sargent, 2015).

Several environmental factors also have been implicated. Lack of appropriate law enforcement has been found to contribute to the prevalence of teenage drinking (Merikangas&McClair, 2012).

Behavioral risk factors also can lead to adolescent substance use. Research has shown that the use of certain substances, such as alcohol and marijuana, can lead to increased use and as well the use of "harder" drugs (Walther, Morgenstern, & Hanewinkel, 2012). Clearly, there are many factors which may lead or make a youth to use mind-altering substances. Some of these factors are discussed individually below.

2.6 Alcoholism in parents or other siblings

Children whose parents or other siblings are alcoholics or substance users are at greater risk of developing a substance use disorder than those without such a history. Having an alcoholic family member, for example, doubles the risk of a male child to later become alcohol or drug dependent. Parental drug use or parental attitudes approving drug use appear to predispose children to substance use. Since parents serve as models for their children's behavior in so many ways, it is not surprising that children whose parents smoke, drink heavily or use illegal drugs are more likely to do so than children whose parents do not (Fenton, et al., 2013). Genetic factors play a significant role in determining this; there is evidence that children born of an alcoholic parent, even when raised by non-alcoholic foster parents, have much higher rates of alcoholism than those

with non-alcoholic origins. Children with a family history of criminality or anti-social behavior are more likely to use drugs and alcohol than those without such a history (Patterson, DeBaryshe, & Ramsey, 1989).

2.7 Inconsistent or abusive parenting

Inconsistent parental direction or discipline, unclear and/or inconsistent parental rules and reactions to children's behavior, unusual permissiveness, lax supervision or, conversely, excessively severe discipline, constant criticism, and an absence of parental praise or approval, are all associated with higher rates of alcohol and substance use in children (Nomura, Hurd, & Pilowsky, 2012).

2.8 Peer factors

Children whose friends (and/or siblings) smoke, drink or use other drugs are much more likely to do so than those whose peers do not. Initiation into these activities is usually through negative peer associations (Allen, Chango, Szewedo, Schad, & Marston, 2012).

2.9 Achievement, social, and environmental factors

Children who are poor academic achievers are more likely to begin substance use early and become regular smokers, drinkers and substance users than are their more successful classmates. Adolescents who are bored by schoolwork and disinterested in academic achievement are much more likely to become involved in substance use than those who are more academically oriented. Cocaine use, for example, is less common among teenagers with college plans than those who do not plan for higher education (Chase, Hilliard, Geldhof, Warren, & Lerner, 2014).

Children who feel "at odds," strongly rebellious against adult authority, and alienated from the dominant social values of their community, are more likely to use alcohol and other substances than those with strong bonds to family and to traditional religious or ethical institutions. Early antisocial behavior, evidence of a lack of social responsibility, fighting and other types of aggressive behavior are predictive of later alcohol and other substance use. The earlier a child begins to smoke, drink or use other substances, the greater the likelihood of heavy substance use, beginning with alcohol and tobacco. Young people who smoke and drink are more likely to use marijuana than those who avoid tobacco and alcohol (Patterson et al., 2017).

2.10 Effects of substance and drug use

One major consequence of substance use is substance abuse, dependence and addiction, characterized by compulsive substance craving seeking behaviours and use that persist even in the face of negative consequences. These changes are maladaptive and inappropriate to the social or environmental setting; therefore, they may place the individual at risk of harm (Tuwei, 2014). The effects of SU in Kenya include: increase in crime levels including domestic violence, risky sexual behaviours and practices including increased exposure to HIV/AIDS. SU is therefore a threat to good health status. Other consequence of SU at individual level include: damaging one's ability to act as free and conscious beings, capable of acting to fulfill their needs, care for others and contribute positively to society (Mwangi, 2016). In addition, a study conducted at an American university in the Northeast demonstrated high binge drinking rates of 63% for

females and 83% for males. Men's higher rates of substance use lead to a number of mental health complications and results including: increased risk for suicidal thoughts and unplanned suicide attempts in men; men are 3 times more likely than women to binge drink and 7 times more likely to participate in chronic drinking (Kelly-Weeder, 2011).

2.11 The source of drugs

A task force commissioned by NACADA and KESSHA (2004) did a research on the sources of the drugs by students in secondary schools. Their findings included the slums, black market, parents, students, matatu touts and hawkers (Mutumi, 2013). In slums most of the youth are jobless, idle, poor and lowly paid. Some of them turn to taking drugs like illicit alcohol to drown their problems as well as being used to peddle drugs to earn some money. Hence slums were cited as a source of drugs. Black market such as peddlers, brewing dens, school workers, teachers and civil servants and some permissive and irresponsible parents were another source of the drugs. The said parents are involved in drug production and use and they involve their children to market the drugs and sometimes encourage them to use the drugs (Holloway & Bennett, 2012). Students are another source of drugs including the prefects and group leaders. Other sources include some religious leaders: such as the clergy, Imams, Priests, who were said to supply students with various drugs. Matatu touts and Hawkers also supplied drugs to students. Drug taking and peddling being a very large network in our country, one wonders

whether the sources are the same for technical training institutions as those in secondary schools (Masese, Joseph, &Ngesu, 2012).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study design

This was a cross sectional study which utilized mixed methods for data collection.

3.2 Study site

This study was done in Mlolongo sub county, Machakos County. Mlolongo is situated along Nairobi-Mombasa highway about 15 kilometers southeast of Nairobi. It is a busy town where most people embark on business transactions. It has a population of about sixty thousand people (National census, 2009) from different ethnic groups. In Mlolongo, there are three computer colleges, one university college, a vocational training centre and a tourism institute.

3.3 Study population

The study population consisted of youth in Machakos University College, St. Joseph Vocational Training Centre and Rhematec Computer Training colleges located within Mlolongo. These colleges allowed the researcher to carry out the research. In qualitative method, the youth, a teacher from each of these colleges, Rhematec manager and the area chief were involved.

3.4 Selection criteria

3.5 Inclusion criteria

1. Youth attending MUC, SJVTI and RCTC within Mlolongo Location.
2. Youth aged between 18-25 years in the colleges within Mlolongo Locality.
3. Youth who gave consent.

3.6 Exclusion criteria

The study excluded participants if:

1. Youth were attending other colleges other than MUC, SJVTI and RCTC within Mlolongo Location.
2. Youth younger than 18 years or older than 25 years residing within and outside Mlolongo Locality
3. College attending youth unwilling to give consent to participate in the study.

3.7 Sample size determination

The criterion for sample size estimation was based on the stated objectives and the prevalence of substance use which was 14.2%. This is the highest prevalence among the substances and therefore it catered for those with lower prevalence. The estimated degree of accuracy which was used in the study was 0.05 (i.e. $d=0.05$). Accordingly, at permissible error of 5% and substance use prevalence at 14.2% (Atwoli et al., 2011) using fisher's et al formula 1998, the sample size was;

$$n=Z^2p(1-p)/d^2$$

Where,

Z is the critical value based on the desired confidence level (e.g., $z = 1.96$ for 95% confidence level);

p is the assumed prevalence of substance use.

d is the margin of error or precision of the estimate in this case $m = 0.05$.

Thus, with permissible error of 5%, the sample size was;

$$n = 1.96^2 \times 0.142 \times 0.858 / (0.05)^2$$

$$= 187.2$$

$$= 187$$

The key informant interviews were conducted on five respondents.

3.8 Sampling procedure

The participants were sampled from three colleges in the area of study. In each college, participants were stratified into males and females to reduce the confounding factors. From each stratum, the participants were then selected using systematic random sampling technique. This was done by getting the proportion of students according to the college population which was then used to find the nth number from the students' number in each college. This was then used to select the participants at relevant intervals from the college register. The interviews were conducted in one of the rooms in each college. The number of subjects who were sampled depended on the total number of

youths in each college. MUC had a total of 312 students, a total of 102 students were interviewed, Rhematec computer training college had a population of 66 students, a total of 22 students were interviewed while SJVTC had a population of 193 students out of which 102 students were interviewed. This was carried out using probability proportional to size allocation method where the number of youth in a given college was divided by the total number of youth in all the colleges that were involved in the study i.e. 571 and then multiplied by the required sample size of 187 in order to get the number of participants in each college as indicated above. The focus group discussion participants were then selected randomly from the youth in the colleges.

3.9 Focus group discussions

A total of 6 focus group discussions (FGD) were conducted to explore further the levels of substance use and associated factors in this region. Randomly eight participants in each FGD from each of the three colleges were consented and enrolled. These persons were invited to participate in a FGD on a fixed time and date at a convenient location to them. Up to 2 FGDs (depending on saturation point of the issues being probed) were carried out in groups of 8 individuals. These participants were drawn from diverse backgrounds including formal or informal leadership, education sectors as well as local communities. A standard guide (Appendix vi) was used for all focus groups. Approximately each FGD lasted for 45 minutes. To maintain confidentiality, participants for FGDs were de-identified and only referred to as participant 1, 2, 3.

Further, issues of confidentiality were explained to all participants, interviewers as well as note takers. The interviews were done in secluded secured locations within the colleges.

3.10 Key informant interviews

Key informant interviews were conducted to confirm and clarify any pending or new issues described in the structured questionnaires and FGDs. Randomly 5 (one teacher per college, Rhematec computer college manager and the area chief) influential and knowledgeable members of these colleges and community were identified and intermittently interviewed at a place and time most convenient and confidential for the participants including their offices. The key informants were selected for their position of leadership, either formal or informal, in the community and their ability and willingness to reflect on the findings. A KII guide (Appendix v) was used in the discussions. Particular attention was given to more detailed understanding of areas of discordance between data from FGDs and structured interviews.

3.11 Variables of the study

3.12 Dependent variable

The dependent variable was substance use which measured the problem in this study.

3.13 Independent variable

The independent variables of this study were age, gender, education level, marital status, and occupation. They helped to describe or measure the factors that are assumed to cause or influence substance use.

3.14 Data collection

A mixed method approach which included both quantitative and qualitative methods was used in data collection. In quantitative method, self-administered questionnaires with semi structured questions were used to collect the relevant information from the participants. This was administered by the researcher and a trained assistant researcher in order to obtain data. A pilot study was done by pre-testing the questionnaire in Stamford bridge professional business school at Kitengela. This helped to establish its validity and reliability. In qualitative method, two focus group discussions with the youth were carried out in each college. This was based on their age group that is, 18-21 and 22-25 years respectively. Each focus group discussion comprised a maximum of eight youth. The discussions were conducted with the help of the focus group discussion guide. The principal investigator did the moderation of the discussions while the research assistant wrote the notes. Key informant interviews were conducted on one teacher from each college based on their willingness to participate in the study, Rhematec computer college manager and the area chief.

3.15 Data management and analysis

3.16 Data storage

All participants received a unique participant identification number that was recorded in the questionnaire. Collected data were checked thoroughly and validated for accuracy and completeness. The data was stored in the flash disk, compact disk and laptop for back up before and after analysis. Data on the questionnaire and the typed notes from

both the key informant interviews and the focus group discussions was kept under lock while electronically stored data was protected by a password.

3.17 Data analysis

The data collected was entered into a database and analyzed using SPSS statistical package version 17 for analysis of the quantitative data. Data was analyzed first using descriptive statistics which involved calculation of proportions and measures of central tendency which included the mean, standard deviation and range. Bivariate analysis involved an association between dependent variable and other independent variables. The degree of association between the variables was tested using Chi-square test. All significant variables were considered together in a multivariate analysis. A multivariate logistic regression model was used to explore determinants of substance use. The confounding factors were adjusted for using stratified analysis technique. The qualitative data was sorted and analyzed by the researcher using thematic data approach which is a conventional practice in qualitative research that involves searching through data to identify any recurrent patterns.

3.18 Ethical considerations

This study was cleared by the KEMRI Scientific Steering Committee and the National Ethical Review Committee. The selected colleges were also informed about the study. During the interviews, all information given was treated with a high level of confidentiality; no name(s) were used. Instead, all participants received a unique participant identification number that was recorded in the questionnaire. To ensure

confidentiality of data, the typed notes from the key informant interviews and the focus group discussions as well as data on the filled questionnaire was kept under lock in a safe and secure place before and after entry for maximum security. The forms were checked to ensure that they had all the information required and, in the case, where there was any missing information, corrections were made before leaving the field. The collected data was stored until dissemination of the study results to the community and scientific publications was done. Data was stored in the flash disk, compact disk and laptop for back up before and after analysis. Electronically stored data was protected by a password. There were no potential risks to the participants who participated in this study and the findings of the study benefited the community by adding information to solve health challenges in our society.

In order to make the study clear to the participants, the informed consent form was read and explained to them in detail. The participants gave consent prior to their voluntary participation in the study by signing the participation consent form. Each study subject was informed about their right to decline from participating in the study without feeling constrained. Dissemination of the study findings was done through publication. During the publication, no person-identifiers were used.

CHAPTER FOUR

RESULTS

4.1 Baseline characteristics of the study participants

Out of the 189 enrolled youths, all the data were available for 152 youth (response rate of 80.4%) who were therefore included in the statistical analysis. Table 4.1 shows summary of baseline demographic characteristics of the study participants.

4.1.1 Distribution of study participants by gender

There were nearly equal distributions in gender 53.9% female verses 46.1% male.

4.1.2 Distribution of study participants by age

The mean age of the participants was 21.26 (SD 2.43) years with median of 21 years (range 18 to 25 years). There were two age group peaks; 46.7% aged between 18 to 20 years and 27% aged 21 to 23 years. Other age groups included 25.7% aged 24 to 25. Most of the participants 46.7% were aged 18 to 20 years a proportion that was significantly higher than the other age groups.

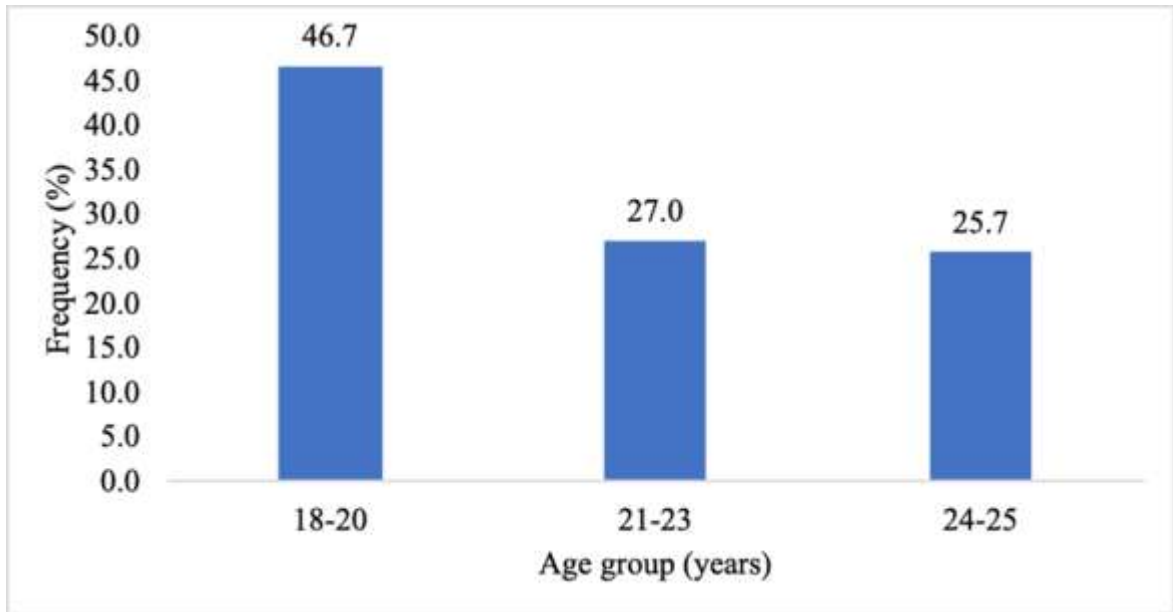


Figure 4.1: Distribution of study participants by age group

4.1.3 Distribution of study participants by marital status

Majority (88.2%) of the participants were single, 10.5% were married and only 1.3% of them were either separated/divorced or widowed (figure 4.2).

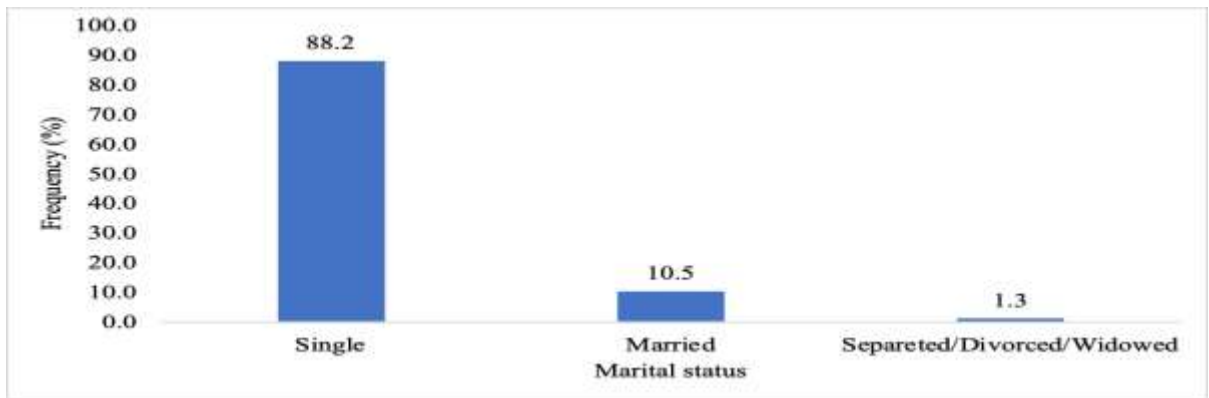


Figure 4.2: Distribution of study participants by marital status

4.1.4 Distribution of study participants by religion

Almost all of the participants (97.4%) were Christians, only 2.6% who were Muslims.

Table 4.1: Baseline demographic characteristics of the study participants

Social Demographic Characteristic	Sample size	
	No	%
Age Group		
18-19	48	31.6
20-21	39	25.7
22-23	25	16.4
24-25	40	26.3
Gender		
Male	70	46.1
Female	82	53.9
Marital status		
Single	134	88.2
Married	16	10.5
Separated/Divorced/Widowed	2	1.3
Religion		
Christianity	148	97.4
Muslim	4	2.6

4.2 Prevalence of substance use among college youth in Mlolongo

Out of the 152 participants, 42 (27.6%) of them stated using different types of substances in Mlolongo location while 110 (72.4%) were non-users of substance as shown in figure 4.3.

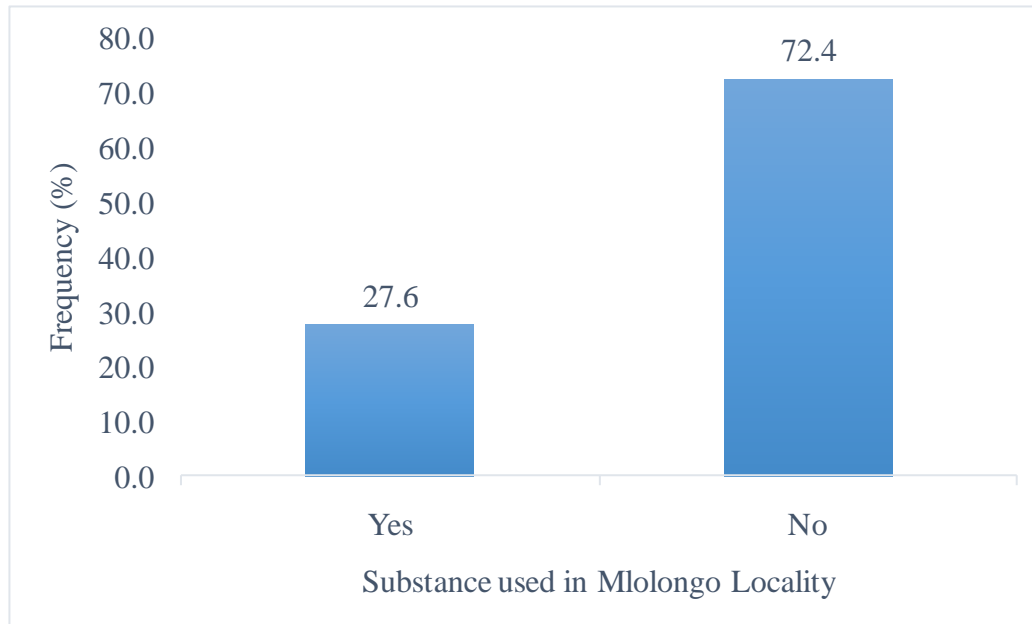


Figure 4.3: Prevalence of substance use in Mlolongo locality

4.3 Characteristics of substance users among college youth in Mlolongo

Table 4.2 shows characteristics of the study participants who used substances. Out of the 42 participants who reported using substance majority of them 66.7% consumed alcohol while 19% and 14% abused tobacco and miraa respectively. The proportion of alcohol users (66.7%) was significantly higher than that of tobacco and miraa.

Concerning the frequency of substance use, slightly less than half (47.6%) of them consumed these substances on a rare basis, 28.6% used substance on a daily basis while 23.8% consumed the substance once or twice a week.

Nearly all of the participants (92.9%) experienced unique feeling in the body function after using these substances and only 7.1% reported no unique bodily feelings.

When asked if they liked the feeling experience after using substance, most of the participants (76.2%) liked the feelings induced by substance use. The rest 23.8% of the youth disliked the feeling induced by substances. The proportion of participants who liked the feeling induced by substance use (76.2%) was significantly higher than that of those who disliked.

Duration of substance use varied; there were two equal peaks in the duration of substance use, 35.7% each had used these substances for one and two years. About 16.7% of the youth had used these substances for more than two years while 11.9% had just started using substances within a month.

When asked if they had tried cutting back on substance use, nearly equal numbers had tried (54.8%) cutting down versus (45.2%) who had not tried cutting down on substance use

Difficulties in cutting back substance use were reported by 47.6% of the participants while 52.4% of the participants had no difficulties in cutting back on substance use.

Table 4.2: Characteristics of substance users

Characteristics	Frequency	Percentage
Substance used		
Yes	42	27.6
no	110	72.4
Type of substance used		
Alcohol	28	66.7
Tobacco	8	19.0
Miraa	6	14.3
Frequency of substance used		
Rarely	20	47.6
Daily	12	28.6
Once or twice a week	10	23.8
Quantity used		
A lot	20	47.6
Little	8	19.1
Moderate	14	33.3
Unique feeling in body functions		
Yes	39	92.9
No	3	7.1
Like feeling due to substance use		
Yes	32	76.2
No	10	23.8
Duration of substance use		
One month	5	11.9
One year	15	35.7
Two years	15	35.7
More than two years	7	16.7
Tried cutting back substance use		
Yes	23	54.8
No	19	45.2
Having difficulties cutting back		
Yes	20	47.6
No	22	52.4

4.4 Commonly used substances

When the respondents were asked about the commonly used substances by the youths, 36.2% of them stated a single substance of use including miraa, alcohol or tobacco. About 26.9% stated a combination of two substances tobacco and miraa or alcohol. About 15.8% stated a combination of three substances (alcohol/miraa and Bhang) while 10.5% reported more than four substances used (tobacco/miraa/alcohol/bhang and hard drugs) (Figure 4.4).

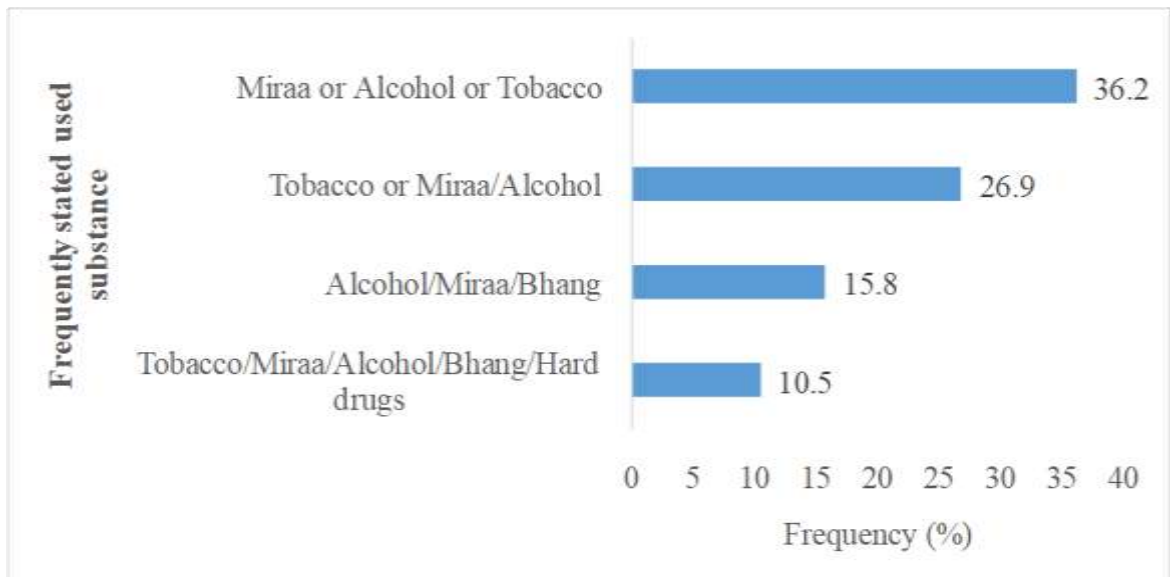


Figure 4.4: Frequently stated used substances

Key: The first bar with Miraa or Alcohol or Tobacco indicates that the students used either one of the three drugs. The second bar with Tobacco or Miraa/Alcohol, indicates use of two drug combination (Tobacco and either miraa or alcohol).

4.5 Substance use and its reasons

Table 4.3 shows types of used substances and the associated reasons for use. Majority 62.5% of the participants stated that substance was not used within the institutions. Further 75.7% of them believed that substance use was against college regulations, with 65.1% of them believed that it was wrong to use substance.

However, those who used substance, 75% stated that it was due to peer pressure, 19.1% stated that substance use was due to poor parenting, with 15.1% stating ease of availability. Only 6.6% of the participants blamed weak substance use policies verses 39.5% who attributed substance use due to stress.

Table 4.3: Substance use and its reasons

Characteristics	Frequency	Percentage
Substance use against college regulation		75.7
Yes	115	24.3
No	37	
Is it wrong to take substance		65.1
Yes	99	34.9
No	53	
Substance use due to peer influence		75
Yes	114	25
No	38	
Substance use due to poor parental		
Yes		19.1
No	29	80.9
	123	
Substance use due to ease of availability		15.1
Yes	23	84.9
No	129	
Substance use due to weak policies		6.6
Yes	10	93.4
No	142	

Demographic factors associated with substance use

Table 4.4 shows characteristics of the youth attending various colleges in Mlolongo locality associated with substance use. In the bivariate analyses, participants who were currently married were less likely to use substances than those who were either separated divorced or widowed (OR 0.12, 95% CI 0.02 to 0.8). Participants who believed that it was wrong to use substances were actually less likely to use these substances than those who did not see anything wrong with the use of substance (OR 0.4, 95% CI 0.12 to 0.7). On the other hand, participants who believed that substance boosted their emotion were more likely to use substances than those who did not believe on the performance boost by substance (OR 2.9, 95% CI 1.55 to 5.7). Further, participants who stated that the substance affected their emotions were more likely to use these substances than those who did not believe on emotional influence (OR 4.5, 95% CI 2.1 to 10.2). In multivariate analysis participants who stated that the substance affected their emotions remained more likely to use these substances than those who did not believe on emotional influence (OR 4.7, 95% CI 1.9 to 11.4).

Other characteristics that were not associated with substance use in both bivariate and multivariate analysis included, gender, age, religion, and awareness of substance use.

Table 4.4: Demographic characteristics associated with substance use

Participants characteristics	Sample size	Substance abuse		P value	Bivariate	Multivariate
		No	%		OR (95% CI)	OR CI (95%)
Gender						
Male	70	25	35.7	0.084	0.5(0.3-1.07)	NS
Female	82	17	20.7	Referent	Referent	
Age Group						
18-20	71	22	30.9	0.99	NS	NS
21-23	41	6	14.6	0.991	NS	
24-25	39	14	35.9	Referent	Referent	
Marital status						
Single	134	38	28.4	0.082	0.2(0.6-1.2)	
Married	16	2	12.5	0.038	0.12(0.02-0.8)	NS
Separated/Divorced/Widowed	2	2	100	Referent	Referent	
Religion						
Christianity	148	40	27.1	0.396	0.5(0.1-2.2)	NS
Muslim	4	2	50	Referent	Referent	
Work performance boost						
Yes	65	29	44.6	0.001	2.9(1.55-5.7)	NS
No	87	13	14.9	Referent	Referent	
Why wrong to abuse substance						
Affects health	80	16.0	20	0.852	1.1(0.49-2.4)	
Affects academic	7	0.0	0	ND	ND	NS
Affects economy	11	5.0	45.5	Referent	Referent	
Affects emotion	24	18.0	75	0.001	4.5(2.1-10.2)	4.7(1.9-11.4)

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval; ND-Not Done; NS - Not significant

P values in bold that are ≤ 0.05 indicates the relationship is significant

4.6 Perceptual factors associated with substance use among youth in Mlolongo

Table 4.5 shows perceptual factors associated with substance use among youths attending colleges in Mlolongo. In both bivariate and multivariate none of the factors such as (peer influence, lack of parental guidance, ease of availability, weak drug use policies, stress, substance use in the institutions, substance use against regulation, types of substance used and punishment adduced to substance user) were not associated with substance user.

Table 4.5: Perceptual factors associated with substance use among college youth in Mlolongo

perceived contribution to substance use	Sample size	Substance use		P - value	Bivariate		Multivariate
		No	%		OR (95% CI)	OR (95% CI)	
Substance abuse due peer influence							
Yes	114	28.0	24.5	0.215	0.6(0.3-1.2)		NS
No	38	14.0	36.8	Referent	Referent		
Substance abuse due poor parental							
Yes	29	8.0	27.5	0.996	0.9(0.46-2.2)		NS
No	123	34.0	27.6	Referent	Referent		
Substance abuse due ease of availability							
Yes	23	7.0	30.4	0.781	1.2(0.4-2.5)		NS
No	129	35.0	27.2	Referent	Referent		
Substance abuse due							

weak policies						
Yes	10	3.0	30	0.883	1.2(0.3-3.5)	NS
No	142	39.0	27.5	Referent	Referent	
Substance abuse due stress						
Yes	60	21.0	35	0.166	1.5(0.8-2.8)	NS
No	92	21.0	22.8	Referent	Referent	
Substance abuse at institutions						
Yes	57	20	35.1	0.179	1.5(0.8-2.8)	NS
No	95	22	23.2	Referent	Referent	
Substance abuse against college regulation						
Yes	114	35	30.7	0.217	1.7(0.7-3.7)	NS
No	38	7	18.4	Referent	Referent	
Types of abused substance						
Tobacco/Miraa/Alcohol/Bhang/Hard drugs	16	5.0	31.3	0.124	1.9(0.8-4.6)	
Alcohol/Miraa/Bhang	24	5.0	20.8	0.207	2.1(0.7-6.1)	NS
Tobacco or Miraa/Alcohol	41	11.0	26.8	0.384	0.5(0.2-1.9)	
Miraa or Alcohol or Tobacco	55	19.0	34.5	Referent	Referent	
Purnishment for students abusing substance						
Suspension/Expulsion/Counselling/Punishment	18	4	22.2	0.765	1.2(0.4-4.12)	
Suspension/Expulsion/Punishment	30	8	26.7	0.475	1.4(0.5-3.9)	NS
Suspension/Expulsion or Counselling or Punishment	42	15	35.7	Referent	Referent	

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval; ND-Not Done; NS - Not significant

P values in bold that are ≤ 0.05 indicates the relationship is significant

4.7 Focus group discussions

4.7.1 Knowledge and attitude of substance use among youth in colleges in Mlolongo Location

4.7.1.1 Common definition of substance by college youth in Mlolongo

A wide variety of understanding of substance was reported. The most commonly stated definition included; something that changes the way our bodies behave or functions. One group mentioned substance as anything consumed other than food and water including drugs, medicine and smoking. *FGD 1.....is something to release stress and feel high, for their pleasure....*

4.7.1.2 When asked about their perception on substance use

Varied responses were stated including: that substance use is wrong because it causes diseases, affect health, causes family conflict and affects academic. On the other hand, some groups believed that when taken in moderation substance use is good for health. *FGD 3: "Most of the students drop out of college due to drugs".*

4.7.1.3 Types of commonly known substance(s)

Varied responses were obtained. Some of the substances mentioned included; Tobacco found in cigarettes, cigars, bidis, and smokeless tobacco (snuff, spit tobacco, chew); Alcohol found in liquor, beer, and wine. Cannabinoids (marijuana and hashish). Opioids including heroin and opium. Stimulants such as cocaine and amphetamine. Prescription Medications such as CNS Depressants.

4.7.2 Substances commonly used in Mlolongo

Similar responses were obtained from all the FGDs. The commonly used substances from majority to the least included; miraa, bhang, cigarettes, alcohol, cocaine and steroids.

All the FGDs concurred that the youth in Mlolongo use these substances.

4.7.3 Reasons why youth in Mlolongo indulge in substance use

The response here varied but the most stated reasons for substance use among youths in Mlolongo included; lack of employment, poverty, easy of availability of these substance, peer pressure, poor up bringing “FGD4 *...parents are bad role models....*”. Other reasons included to release stress.

The participants believed that substance use does not either help one to fit in the society socially or enhance one`s intellectual ability or creativity.

4.8 Key informant opinion on substance use

All the interviewed key informants stated categorically that cases of substance use are rampant in Mlolongo area. The most vulnerable group varied and included both sexes aged 15 to 30 years, 18 to 35 years, 20 to 35 years while others stated age group of 20 to 50 years.

4.8.1 Factors promoting substance use

The lack of employment, poverty, ease of availability of these substances, peer pressure, poor upbringing, high cash flow and KII2 “*...availability of drugs at low prices....*” Were among the factors stated that promotes substance use among the youth in Mlolongo.

4.8.2 Measures to control substance use

Some of the control measures stated included; youth training and awareness creation on the demerits of substance use, enforcement of substance use laws, youth skill empowerment for job creations, developments of rehabilitation facilities, and that the churches to play active role in the advocacy on substance use.

4.8.3 Commonly used substances in Mlolongo

Just like in FGD, the commonly used substances were similar and included; cigarettes, cigars, bidis, and smokeless tobacco (snuff, spit tobacco, chew); Alcohol found in liquor, beer, and wine. Cannabinoids (marijuana and hashish). Opioids including heroin and opium. Stimulants such as cocaine and amphetamine. Prescription Medications such as CNS Depressants.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Prevalence of substance use

The prevalence of substance use among college students in Mlolongo stood at 27.6% which was significant in our view. Further, drug and substance use has been shown as a silent disaster in Kenya which has claims many lives every year. Strong correlation has been shown between drug use, violence and HIV/AIDS scourge (Brennan, et al., 2012). The problem continues to escalate every year as manifested by the high rate of fatal road accidents, upsurge in the crime rate, violent disturbances, and uprisings in schools. The World Drug Report by UNDCP, (2001) reports that there are about 141 million drug abusers globally, including 8 million heroin addicts, 30 million amphetamine users and 13 million cocaine users. The report shows that in the United States and Canada where 360,000 heroin abusers in 1991, and 600,000 in 2000. In the UK, Ireland, Denmark and Italy, 2 percent of 16 and 17-year-olds had used heroin. Six percent of American young people including students had used cocaine, in the Bahamas 6.4 percent, and 4.5 percent in Kenya. Some 8.3 percent of all young people in the UK and 9 percent in Ireland had used amphetamine drugs (Degenhardt & Hall, 2012).

Different studies have shown varying prevalence of drug use in Kenya and elsewhere among college students. In, Murang'a South District, Kenya about 33.8% of the students were shown to be abusing drugs (Kyalo, 2010). In Mbeere North District, 23.3% of the students indicated that they had abused drugs other than for medical purposes (Mutumi, 2013). In Kisumu Kenya, 57.9% of the respondents had consumed alcohol at least once in their lives (Otieno and Ofulla, 2009).

In other regions, a prevalence of about 15% of the students in Karbala University in Iraq reported using drugs of different types (Al Mousawi, 2014). In Kolkata, India, the overall rate of substance use among college students was found to be 29.6% (Bagchi, Ganguly, Pal, & Chatterjee, 2014). Among students from 11 colleges in North Carolina and Virginia, USA, nearly 30% of students reported ever having used marijuana at college entry (Suerken, et al., 2014). An estimated 31% of US college students meet diagnostic criteria for alcohol abuse (de Andrade, et al., 2012). According to 2011 national data, 64% of college students in the US reported drinking alcohol and 40% reported being drunk in the past 30 days (Johnston *et al.*, 2012). In Brazil, almost 26% of collegestudents reported having engaged in substance use in the past 12 months (de Oliveira, Alberghini, dos Santos, & de Andrade, 2013).

5.1.2 Types of used substance

In this study, 66.7% consumed alcohol followed by 19% and 14% tobacco and Miraa respectively. The findings concerning alcohol, khat and tobacco as the most commonly used drugs possibly reflect the overall current situation of drug use among the youth in the country. For example, in 2004, NACADA reported that the national prevalence of substance misuse among the youth was 60% alcohol, 58% tobacco, 23% cannabis and 22% khat among others (Degenhardt and Hall, 2012). The current scenario could be attributed to the fact that Kenya has become a progressively significant transit point for drugs destined for other countries such as Europe and North America. In addition, use of drugs such as alcohol, khat and tobacco is culturally, socially and legally acceptable in Kenya and these drugs are locally produced. Such factors have compounded the problem of substance use and dependence among the youth including students (NACADA, 2004). Further, our results are similar to many that have been done in Kenya and

elsewhere. In Nairobi Kenya, a study conducted in 2009 showed alcohol as the most frequently used drug among students (42.9%), followed by khat, (20.8%), tobacco, (19.8%), cannabis/ bhang, (14.3%) and sleeping pills, (10.7%) while the least used drug was glue (4.1%) (Maithya, 2009).

In Mbeere District, Kenya 77.8 percent of the respondents indicated that the students used alcohol, 51.9 percent of them used Khat, 31.4% used cigarettes, khats and 16.9% used sleeping pills (Mutumi, 2013). In Kisumu Kenya out of the youth interviewed majority of the respondents (57.9%) had consumed alcohol at least once in their lives, (34.7%) had used tobacco, (18.3%) had used cannabis, (23.1%) had used khat and 24 (5.2%) had used inhalants and/or cocaine (Otieno and Ofulla, 2009). In Argentina, 55.5% and 33.6% of the College students reported consuming alcohol and tobacco respectively in the previous month (Pilatti, Caneto, Garimaldi, Vera, &Pautassi, 2014). In Brazil, among students, 37% had engaged in simultaneous alcohol and illicit drugs use. In the past 30 days, 17% college students had engaged in alcohol and illicit drugs (de Oliveira, Alberghini, dos Santos, & de Andrade, 2013). In Jordan, among the school going children, the prevalence of ever-smoking and current any smoking was 36.8% and 15.9% within the entire sample, respectively (McKelvey, et al., 2013).

5.1.3 Duration of substance use among college youth in Mlolongo

In this study, 28.6% of the youth used substance on a daily basis while most of them 47.6% consumed a lot of these substances. A baseline survey on drug and substance use commissioned by the NACADA in the years 2001 and 2002 revealed that more than a

fifth of primary school pupils in Kenya have taken alcohol and the figure rises to more than three-fourths for university students (Francis et al., 2014). In Kenya, more than 22.7% of the primary school children have taken alcohol, a figure that rises to 57.9% in secondary schools and to 68% among university students. The frequency and quantity increase as one progress in schooling years (Simatwa, Odhong, Juma, &Choka, 2014).

More than half of the youth (52.4%) stated having used substance for a period of one year and beyond. More than half (54.8%) had tried cutting down on substance use frequency or quantity. About 47.6% of them reported had difficulties cutting back on substance use. Most of the students in many public schools have been using drugs for longer period and majority of those using these drugs face enormous tasks in terms of reducing the amount and frequency of substance use (Simatwa et al., 2014).

5.1.4 Reasons for substance use among college youth in Mlolongo

This study noted that for those youths who used substance, this was majorly due to peer pressure, poor parenting, ease of availability, weak substance use policies and due to stress. Nearly all of the participants (92.9%) experienced unique feeling in the body function after using these substances. Most of the participants 76.2% liked the feelings induced by substance use.

Studies have shown that most students use drugs for the purposes of managing physical pain, to manage emotional/psychiatric distress, to manage stressful situations, to serve recreational purposes, and to avoid withdrawal symptoms (Merlo, Singhakant, Cummings, &Cottler, 2013). College students' drug using behavior is influenced by

perceptions of peer consumption (Quinn & Fromme, 2011). Members of fraternities and sororities are more likely than non-members to experience symptoms of alcohol dependence, even during the first year of college owing partially to having greater access to drugs (Snipes & Benetsch, 2013). Some aspects of the family environment, such as parental monitoring and supervision, can exert a protective influence against drinking during high school thereby reducing the risk for heavy drinking during college. Conversely, having a family history of alcoholism increases the risk for drug use and other alcohol-related consequences among college students (Elliott & Carey, 2012).

Youth are curious to discover the sensations and get unique profound feelings. This curiosity has partly been aroused by seductive advertisement on print and electronic media which make the youth falsely believe that it is sophisticated to take drugs for example alcohol and cigarettes. Behaviors exhibited by those who use substances are watering eyes and nose, unusually talkative hence noise making, unusual quietness, unpredictable temper, concentration lapse, and loss of interest in education, carelessness and neglect of one's personal hygiene, general irresponsibility, high irritability, and hostility to close friends, dirty and tattered clothes and normally being in one clothe for many days (Wallhed Finn, Bakshi, & Andréasson, 2014).

Most students' use drugs to so that they can avoid life demands and problems as a defense mechanism. Those who are prone to aggression use drugs as an excuse or Justification for their aggressive behavior (Quinn and Fromme, 2011). In some cases drugs are readily availability e.g. cigarettes in shops, cheap alcohol in wines and spirits

shops, khat, marijuana etc. some students are used by dealers to peddle drugs and this increases accessibility of drugs to adolescents. Other factors cited include; family influence ranging from genetic predisposition to alcohol, parental use and acceptance of drugs to poor parenting, family conflicts and economic hardship. Low self-esteem has been associated with academic failure and lack of commitment to educational goals (Padhy, Das, Sahu, &Parida, 2014).

Peer pressure in order to gain acceptance into peer group, adolescents are expected to conform and meet requirements of the peer group. Some of the requirements of such peer group may include use of drugs. Personality trait in one study, smokers in junior and senior schools were found to be more extroverted, happy-go-lucky and frank but less agreeable than non-smokers. Indiscipline and early and persistent behavior problems for example, aggressive behavior and delinquency is a way of adolescents asserting their independence and desire for adult status (Allen et al., 2012).

5.1.5 Factors influencing substance use among college youth in Mlolongo

In this study, substance use among the youths attending various colleges in Mlolongo locality was associated participants believe values, those who believed that it was wrong to use substances were actually less likely to use them. Emotional boost, participants who believed that substance boosted their emotion were more likely to use substances. Emotional effect, participants who stated that the substance affected their emotions were more likely to use these substances. Recent studies have shown social factors play a major role in college student drinking, and both school and worksites are social

environments that may significantly influence young adult behavior. College students are more likely to engage in heavy episodic drinking than their counterparts who aren't in college, even controlling for age, race, gender, and genetic predisposition. This strongly implicates the college environment as a risk factor for heavy drinking, beyond demographic and lifestyle factors (Jackson, Denny, & Ameratunga, 2014). A study by Suerken et al., (2014) showed that having at least \$100 per month in spending money, attending church rarely or never; current use of cigarettes, alcohol, and hookah tobacco; lifetime use of other illicit drugs; and a higher propensity toward sensation seeking were associated with a higher likelihood of having used marijuana at least once at college entry. Hispanic ethnicity, living on campus, and current use of cigarettes and alcohol were associated with a higher likelihood of initiating marijuana use during freshman year (Suerken et al., 2014).

Other characteristics that were not associated with substance use among college youth in Mlolongo in both bivariate and multivariate analyses included; gender, age, religion, and awareness of substance use. In both bivariate and multivariate none of the factors such as (peer influence, lack of parental guidance, ease of availability, weak drug use policies, stress, presence of substance use in the institution, substance use against regulation, types of substance used and punishment adduced to substance user) were not associated with substance users.

5.2 Conclusions

The following are conclusions drawn from this study:

5.3 Prevalence of substance use among youth in Mlolongo

This study has shown that just like in any other sections of Kenya, the college youth in Mlolongo are using drugs of various types at a high proportion (27.6%), varying frequency and quantity. The problem could be higher than believed because these study findings were based on participant's reports. Sadly, however, these drugs are also used within the leaning institutions among the youth in Mlolongo at a very high level (35.1%). It is worrying to note that among the college youth in Mlolongo, majority of them (46.7%) were young aged 18 to 20 years which increased the likelihood of substance use at a very early age in their life.

Based on this, the stated control measures of substance use in this study which included; youth training and awareness creation on the demerits of substance use, enforcement of substance use laws, youth skill empowerment for job creations, developments of rehabilitation facilities, and active role in the advocacy on substance abuse by churches should be implemented to save the future generation.

5.4 Types of substance used among college youth in Mlolongo

It was noted that alcohol, tobacco/ cigarettes and miraa are the most commonly abused substances by college youth in Mlolongo location. These substances are either used singly or in various combinations such as tobacco/miraa/alcohol/bhang and hard drugs

on one occasion. It is important to state here that additional drugs used by youth in this locality were identified in the FGD and KII. These included cannabinoids (marijuana and hashish), opioids including heroin and opium, stimulants such as cocaine and amphetamine and prescription Medications such as CNS

5.5 Factors for drug use among college youth in Mlolongo

Among the factors that contributed to drug use as revealed by the study were social reasons such as peer pressure, socialization, role models, family members and close friends. Easy of availability of the substance, weak government policies and stress were among other stated reasons for drug use. This shows that majority of the students used drugs in order to be accepted among their peers.

In this study, substance use among these youth was associated with marital status; those who were married were less likely to use substances compared to the separated divorced or widowed. Participants believe values where those who believed that it was wrong to use substances were actually less likely to use them. Emotional boost where participants who believed that substance use boosted their emotion were more likely to use substances. Emotional effect, participants who stated that the substance affected their emotions were more likely to use these substances.

5.6 Recommendations

Based on the findings of the study, the following recommendations were made:-

- 1.** Mitigating steps such as enforcement of substance abuse laws, youth skill empowerment for job creations, developments of rehabilitation facilities, and that the churches to play active role in the advocacy on substance abuse.
- 2.** Intervention programs by churches to inform Parents on how to prevent drug abuse among their children. Family and parenting has been cited as a major root cause of substance abuse.
- 3.** Intervention programmes should be designed to build social skills and stop drug use among those who already use drugs and also amongst those who show early signs of behavior change that could lead to substance use such as depression and defiance.
- 4.** Wider and larger studies to be conducted combing wider area using other research designs including observational studies in order to identify the actual magnitude of substance use within this county.

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APPENDICES

Appendix I: Informed consent form for the participants

Part A

Introduction: Substance use involves the consumption of psychoactive substances including alcohol and illicit drugs. This study aims at estimating the factors associated with substance use among youth in colleges in Mlolongo Location. I will be very grateful for your willingness to participate in this study.

Purpose of the study: The aim of this study is to determine the factors associated with substance use among youth in colleges in Mlolongo Location.

Study procedures: The investigator will recruit the youth aged 18-25 years for interviews. During the interviews, the youth will be asked to fill the questionnaire. If anyone will wish to participate, the investigator will request them to give permission by signing the consent form.

Risks: There are no known direct risks to the participants who will participate in this study.

Benefits: This research project is purely academic; there are no direct benefits to the participants. The findings will benefit the community by adding information to solve health challenges in our society.

Study costs: If you agree to participate, you will not be paid for any study procedures that will be carried out.

Alternative to participation: The participants are free to refuse to participate; no penalty or loss will accompany any individual for participating or not participating in the study.

Confidentiality: All information given will be treated with a high level of confidentiality; no name(s) will be used. Instead, a unique code for each informant will be used. The questionnaires will be locked up for information security and will be destroyed after the results of the study have been disseminated.

Voluntary: This exercise is totally voluntary; the chief researcher will be very grateful for your participation.

Contacts: If you have questions about your rights as a study participant, or you are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish – The secretary, KEMRI Ethical Review Committee, PO Box 54840 – 00200 Nairobi, Kenya; Tel: 020-2722541, 0722205901, 0733400003; Email address: erc@kemri.org.

Part B: Participation consent/assent form

Please ensure you have read this information or that the information has been read to you and that you fully understand what is involved in participating in this study, and your role as a respondent has been fully explained to you. Would you like to ask any question?

Participant Statement

I have read or have had the document read to me. I have discussed the information with study staff YES___ NO_____

I agree to participate in this research study: YES___ NO_____

My questions have been answered. My decision whether or not to take part in the study is voluntary. If I decide to join the study I may withdraw at any time. By signing this form, I do not give up any rights that I have as a research participant.

Participant Signature/ Thumb print

Date

Study Staff Conducting

Study Staff Signature

Date

Appendix II: Key informant interview consent form

Part A

Introduction: Substance use involves the consumption of psychoactive substances including alcohol and illicit drugs. This study aims at estimating the factors associated with substance use among youth in colleges in Mlolongo Location. I will be very grateful for your willingness to give information on substance use among youth in this location.

Purpose of the study : The aim of this study is to determine the factors associated with substance use among youth in colleges in Mlolongo Location.

Study procedures: The investigator will conduct key informant interviews during the study on the teachers and respective authorities in the area. During the interviews, the area chief and the other key informants will be asked questions using the key informant interview guide. If anyone will wish to give any information, the investigator will request them to give permission by signing the consent form.

Risks: There are no known direct risks to the key informants who will contribute or give any information in this study.

Benefits: This research project is purely academic; there are no direct benefits to the key informants. The findings will benefit the community by adding information to solve health challenges in our society.

Study costs: If you agree to give any information, you will not be paid for any study procedures that will be carried out.

Alternative to contribution: The key informants are free to refuse to give any information; no penalty or loss will accompany this, in the study.

Confidentiality: All information given will be treated with a high level of confidentiality; no name(s) will be used. Instead, a unique code for each informant will be used. The data obtained will be locked up to ensure information security and will be destroyed after the results of the study have been disseminated.

Voluntary: This exercise is totally voluntary; the chief researcher will be very grateful for your contribution.

Contacts: If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish – The secretary, KEMRI Ethical Review Committee, PO Box 54840 – 00200 Nairobi, Kenya; Tel: 020-2722541, 0722205901, 0733400003; Email address: erc@kemri.org.

Part B: Key informant consent form

Please ensure you have read this information or that the information has been read to you and that you fully understand what is involved in the contribution in this study, and your role as a key informant has been fully explained to you. Would you like to ask any question?

Key Informant statement

I have read or have had the document read to me. I have discussed the information with study staff YES___ NO_____

I agree to participate in this research study: YES___ NO_____

My questions have been answered. My decision whether or not to take part in the study is voluntary. If I decide to join the study I may withdraw at any time. By signing this form I do not give up any rights that I have as a research participant.

Participant Signature/ Thumb print Date

Study Staff Conducting Study Staff Signature Date

Appendix III: Informed consent form for the focus group discussion

Part A

Introduction: Substance use involves the consumption of psychoactive substances including alcohol and illicit drugs. This study aims at estimating the factors associated with substance use among youth in colleges in Mlolongo Location. I will be very grateful for your willingness to take part in the discussion of this study.

Purpose of the study: The aim of this study is to determine the factors associated with substance use among youth in colleges in Mlolongo Location.

Study procedures: The investigator will select the youth aged 18-25 years for discussion. The discussions will be conducted with the help of the focus group discussion guide. If anyone will wish to take part in the discussion, the investigator will request them to give permission by signing the consent form.

Risks: There are no known direct risks to those who will take part in the discussion in this study.

Benefits: This research project is purely academic; there are no direct benefits to the focus group discussion members. The findings will benefit the community by adding information to solve health challenges in our society.

Study costs: If you agree to take part in the discussion, you will not be paid for any study procedures that will be carried out.

Alternative to participation: The members are free to refuse to take part in the discussion; no penalty or loss will accompany any individual for taking part or not taking part in the study.

Confidentiality: All information given will be treated with a high level of confidentiality; no name(s) will be used. The typed notes from the focus group

discussions will be locked up for information security and will be destroyed after dissemination of the study results has been done.

Voluntary: This exercise is totally voluntary, the chief researcher will be very grateful for your contribution in the discussion.

Contacts: If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish – The secretary, KEMRI Ethical Review Committee, PO Box 54840 – 00200 Nairobi, Kenya; Tel: 020-2722541, 0722205901, 0733400003; Email address: erc@kemri.org.

Part B: Focus group discussion consent/assent form

Please ensure you have read this information or that the information has been read to you and that you fully understand what is involved in taking part in the focus group discussion of this study, and your role has been fully explained to you. Would you like to ask any question?

Focus Group Discussion Statement

I have read or have had the document read to me. I have discussed the information with study staff YES___ NO_____

I agree to participate in this research study: YES___ NO_____

My questions have been answered. My decision whether or not to take part in the study is voluntary. If I decide to join the study I may withdraw at any time. By signing this form I do not give up any rights that I have as a research participant.

Participant Signature/ Thumb print Date

Study Staff Conducting Study Staff Signature Date

Appendix IV: Questionnaire

Questionnaire Number:

Name of interviewer:

Date of interview:

Section A: Socio-demographic data

(Tick the appropriate response in the spaces provided)

1. Indicate your gender.

1) Male () 2) Female ()

2. Indicate your age in years ()

3. What is your religion?

1) Christian () 2) Muslim () 3) Hinduism () 4) Others

(Specify).....

4. Indicate your marital status.

1) Single () 2) Married () 3) Separated () 4) Divorced () 5) Widowed
()

Section B

5. Do you use any substance(s)?

1). Yes 2) No

6. If yes, which of the following substances do you take?

1) Alcohol

2) Tobacco

3) Miraa

4) Others (specify)

7. How often do you take the substance(s) above?

1. Rarely
2. Daily
3. Once or twice a week
4. Others (Specify)

8. Based on the answer given in number 3 above, what quantity of substances(s) do you usually take?

9. Do you think the substance(s) can enhance your work or academic performance?

- 1). Yes 2) No

10. Do these substances give you any unique feeling from your usual normal body functioning?

- 1). Yes () 2) No ()

11. If yes, do you like the feeling that the substance(s) give you?

- 1). Yes () 2). No ()

12. For how long have you used the substance(s)?

- 1) One month
- 2) One year
- 3) Two years
- 4) Others (Specify)

13. Have you tried to cut back substance use?

- 1) Yes 2) No

14. If yes do you have trouble cutting back on your substance use?

- 1) Yes
- 2) No

15. Do you think it is wrong to take these substances? Why

1) Yes

2) No

Reason

16. Do you know anyone who takes substance(s)?

- 1) Yes
- 2) No

17. In your opinion, for what reason will someone use substance(s)?

- 1) Peer influence
- 2) Poor parental guide
- 3) Easy availability of the substance
- 4) Weak policies on substance use
- 5) Stress
- 6) Others (Specify)

18. According to you, which substance(s) is commonly taken by the college going youth in Mlolongo?

1.	6.
2.	7.
3.	8.
4.	9.

5.	10.
----	-----

19. Are there known cases of substance use in this institution?

- 1) Yes () 2) No ()

20. Is it against the college regulation to take substance(s) within the premises?

- 1) Yes 2) No

21. If yes, what are the measures taken against students found taking substance(s) by the college administration?

1	6
2	7
3	8
4	9
5	10

Appendix V: Key informant interview guide

- 1 Are there cases of substance use in this area?
- 2 Which is the most vulnerable group?
- 3 According to you, what factors promote substance use among the youth in Mlolongo?
- 4 What measures have been put in place to control substance abuse?
- 5 Which substances are commonly used in Mlolongo?

Appendix VI: Focus group discussion thematic guide.

Prevalence of substance use

- 1 What do you understand by the term substance?
- 2 What is your perception on substance use?
3. Do youths use these substances?

Types of substances used

- 4 Which are some of the substance(s) that you know?
- 5 Among the substances you have mentioned, which one(s) is commonly used in Mlolongo?

Factors associated with substance use

- 6 Why do you think the youth indulge into substance use?
- 7 Do you believe substance use helps one to fit in socially?
- 8 Do you believe that substance use enhances one`s intellectual ability or creativity?