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FACTORS ASSOCIATED WITH SUBSTANCE USE AMONG SENIOR HIGH SCHOOL STUDENTS IN KWAHU EAST DISTRICT

BY

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DECLARATION

I, Vera Kwofie, declare that this work is the result of my own effort, and it has not been submitted either in part or whole for any other degree. All references have been duly acknowledged.

…… ……

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CANDIDATE

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SUPERVISOR

DEDICATION

I dedicate this book to my parents Francis A. Kwofie and Alice Kwapong, sisters Isabella, Joana, Cynthia and Irene for their prayers, support and encouragement.

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ABSTRACT

Background: The use of substance among Secondary Cycle School Students is a public health problem which needs global attention. Globally, it is approximated that, 2 billion people consume alcohol whiles 1.3 billion are smokers, and 185 million use any of the illicit drugs which affect the mood of the user. In Kwahu East District little is known about substance use among second cycle schools. The aim of this study is to gather empirical evidence on substance use among senior high school students. Factors associated with use was also analysed.

Methodology: A cross sectional study design was used for the research. Three schools were randomly selected from total of seven schools in the district by balloting. A systematic random sampling was used in the selection of students. Class registers were used to systematically select the required number of students needed for the study. Data was collected from 403 students using semi- structured questionnaire. Data obtained was analyzed using Stata version 15.0. Descriptive and inferential statistics were performed to describe the data and to find associations.

Results: The study also found out that alcohol was the most used substance (29.7%), followed by marijuana (7%), tramadol (6.3%) and tobacco (6%) with friends use of substance (p=0.002), students use of substance (0.0016), physical abused (0.033) and sexual abused (0.027) were the highest risk factors associated with substance use among the students. Parental monitoring (0.003) was found to be a protective factor associated with substance use.

Conclusion: **S**ubstance use was high among senior high school students in Kwahu East District, therefore there is the need for social intervention to reverse this situation.

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LIST OF ACRONYMS

CVD	Cardiovascular Disease
HIV	Human Immune- Deficiency Virus
LSD	Lysergic Acid Diethylamide
NIDA	National Institute on Drug Abuse
PCP	Phencyclidine
SHS	Senior Secondary School
STD	Sexually Transmitted Disease
UN	United Nation
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

DEFINITION OF TERMS

Substance: Substance is any of the three commonly substance such as cigarette, alcohol, and any drugs that is forbidden by law. These include (amphetamine, opioid, marijuana, cocaine, and hallucinogens) which affect the mind or mood or other mental processes of a person.

Senior High School Students: They are students from the Junior High School who passed the Basic Education Certificate Examination (BECE) and have proceeded into Senior High School.

CHAPTER ONE

1.0 INTRODUCTION

According to WHO (2014) substance is a chemical that modifies a person's mood, perception or cognitive behavior when it is smoked, injected, swallowed, drunk, inhaled in powder or vapor. Generally, substance refers to the use of any drug that affects the mood, mind, and mental processes of a person (World Health Organization, 2014b). Psychoactive substance can lead to dependence syndrome which is a clump of a behavioral, and physiological effect that evolve after sequence use (World Health Organization, 2017).

The use of substance such as alcohol, cigarette, and illicit drugs has become a global health issue because of increase in their use especially in developing countries (Birhanu, Bisetegn, & Woldeyohannes, 2014).

A study conducted by Substance Abuse and Mental Health Services, estimated that 9.4% of the teen group, age 12 years and above in America use Illicit drugs whereas Marijuana use was 7.3% among the same age. Also, 52.2% and 25.5% of these adolescents were alcohol and tobacco users respectively (SAMHSA, 2016)

Substance use among the Senior High School Students is a public health problem which needs global attention. The major substances used worldwide by Students are the cannabis, marijuana, opioids, amphetamines, and alcohol. This behavior calls for a collaborative action since the world psychoactive substance use are approximate, 2 billion alcohol drinkers, 1.3 billion smokers and 185 million illicit drug users (World Health Organization, 2018).

A research conducted in Kenya revealed that high school students use of substance such as tobacco, and alcohol is associated with peer pressure, poor academic performance and family chronicle of alcohol and drug use (Peltzer et al., 2011).

The use of harmful substance leads to low academic achievement, high risk of HIV infection and other sexually transmitted infections (STIs), or psychiatric disorders such as depressive symptoms. lethargy, sleeplessness, and hopelessness, (Birhanu et al., 2014).

1.1 Problem Statement

High levels of substance use among Senior High students have become a public health problem. This poses serious consequences on the life of these students.

Currently, the use of drugs is a global problem and its characteristics vary from country to country. Adolescents are the primary victim of this circumstances. Using these also come with its own consequences.

A research conducted in Ethiopia has shown that tobacco smoking is the leading cause of cardiovascular disease (CVD), upper gastrointestinal tract, malignancies of the respiratory, obstructive pulmonary disease, , and a high-risk factor for death among millions of people worldwide (Birhanu et al., 2014) and the youth are the major victims of these risk factor.

Moreover, a report from the United Nations Office on Drug and Crime revealed that unlawful drugs such as cannabis, opioid, and amphetamine are the commonly used drugs in the world. About 162-324 million people aged 15-65 are users (Uited Nations Office on Drugs and Crime, 2014).

A report from Peace FM, one of the popular local FM stations in Accra, Ghana reported that about fifty thousand (50, 000) people, particularly the youth, are using drugs. Out of which

35,000 were students from junior/senior high schools and tertiary institutions and aged between 12 and 35 years. The remaining 15, 000 were adults with 9, 000 being males and 6,000 females (Peacefmonline.com, 2014).

In Ghana, the most abused substance is marijuana, tobacco and alcohol. This cut across all the ten regions in the country. The consequences of using these substances is the high level of non-communicable diseases and mental disorders in the country. Moreover, Ghana is still a major transit point for illegal drugs and this makes it easier to purchase and use. Furthermore, a study conducted in Ghana revealed that Ghana is the world third consumer of marijuana and has 21.5% of it citizen aged between 15 and 65 heavily involved (Ghanaweb, 2016)

Most of the Senior High School Students are adolescents. This stage is a very crucial and sensitive one where most of them are curious and experiment with things around them; making them vulnerable. They also like to take a risk and explore their environment. Furthermore, this is where most risk factors contribute to the rise in the use of these substances. Some of the contributing factors to substance are peer pressure, sexual and physical abuse, low socio-economic status, poor parental relationship, academic performance and lack of sports activities (Birhanu et al., 2014).

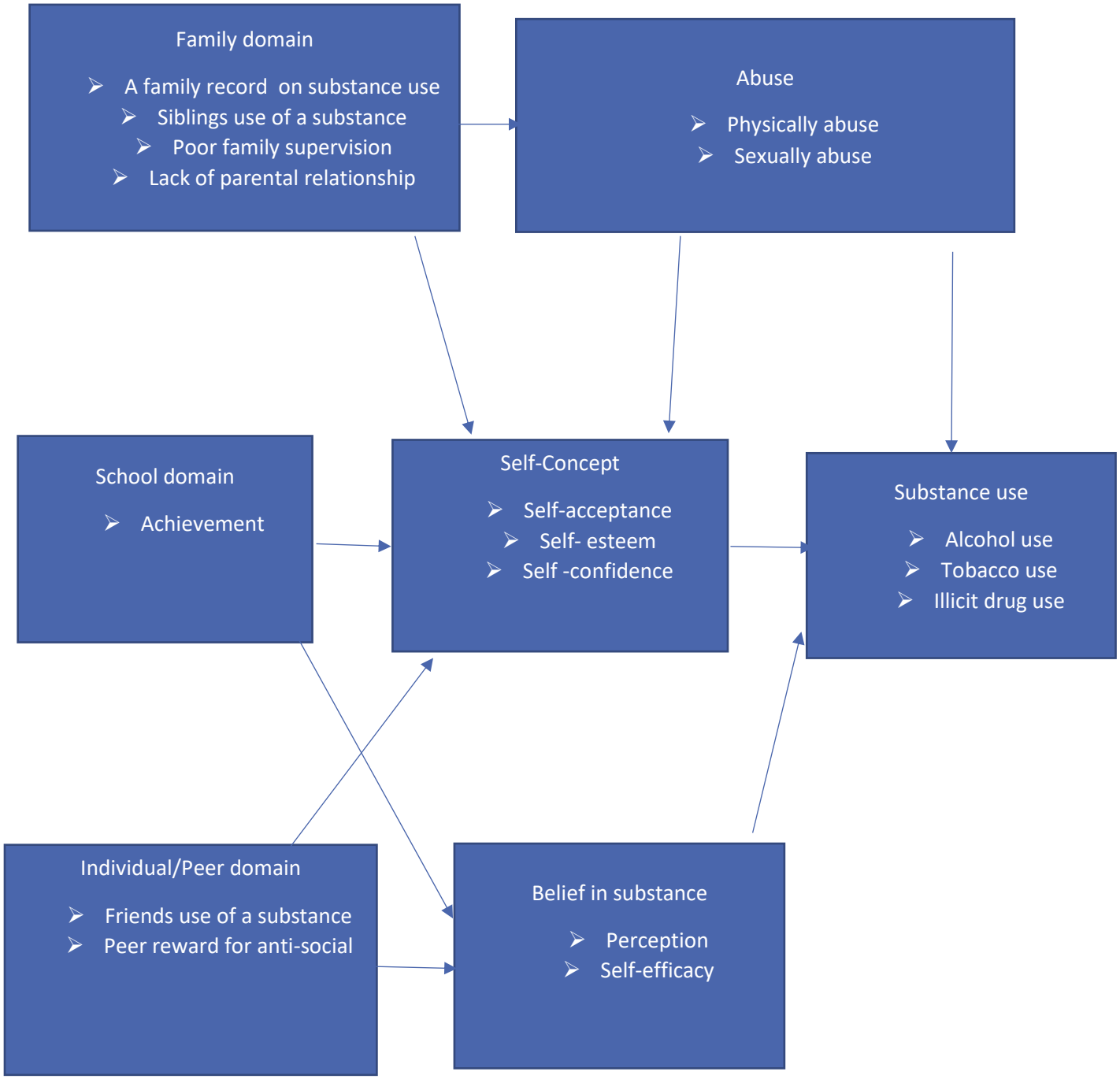
In Ghana, very few studies focus on substance use. Also these surveys were all conducted among the general population (Affinnih, 1999) (Affinnih, 1999a, 1999b; Doku, 2012). To date, very little is known about the study on substance use among Senior High School. Yet anecdotal evidence suggests that adolescents use various substances.

In Kwahu East district for an instant, an anecdotal evidence suggests that substance use among Senior High School is on the ascendency, but no study has been conducted to produce empirical data to support the magnitude of substance use in the area. Therefore, there is the need to embark

on this study to gather empirical data to support the anecdotal evidence of the magnitude of substance use in the district.

1.2. Conceptual Framework

Figure 1: Conceptual Framework on Substance Use



Adapted from Bae & Rosel, (2009).

1.3. Description of the Conceptual Framework

This model of framework was constructed to further explain the continuously increasing substance use disorder in adolescents. Based on the constructed model, belief on substance use was found to have a significantly direct effects in influencing adolescents' substance use. Moreover, other factors such as, self -concept, family environment, satisfaction with school life, social support, and personality vulnerability indirectly affected substance use (Bae & Rosel, 2009).

Substance use among SHS Students is greatly influenced by several factors. Some of these factors are outlined in the framework in Figure 1. Family domain, school domain, and individual/peer domain are independent variables and the outcome is substance use.

Family level domain factors which include a family chronicle of the use of a substance, sibling use of a substance, poor parental supervision and poor parental relationship is directly associated with adolescents use of a substance. The home is the first institution a child learns from and the family makes up the home, therefore whatever is being done in the family whether good or bad may become part of each family member.

Also, since most of the senior high school students are in a developmental stage they easily get attracted to things around them whether good or bad and their behavior also influences them to experiment with things around them. However, parents' and siblings' use of a substance can influence such students to become a user of substance since they see their parents and older siblings as models hence tries to be like them. Some parents and older siblings even send their wards and younger siblings to buy those substances for them. They show them where they sell such substance and even take it in the presence of these children without considering the implication of such act on them.

Parenting is a very important component of a child's upbringing. The relationship between the child and the parents to a very large extent will determine the behavior pattern of the child ie whether he will be wayward or respectful. When parents let "loose" of their child such as freedom of movement irrespective of the time of day, the child picks up certain behavior including substance use which if not checked leads to substance abuse.

Most SHS students who belong to families of substance users are physically and sexually abused by their parents and older siblings. These students, are victimized by their own family members never to disclose it to anyone. These students go through depression and become impulsive and anti-social and so in order to overcome such challenges they turn to substance use as an option of relief.

Moreover, most Senior High School students use all manner of methods to study. For those who are not pulling their way through academically, they are being advised to indulge in substance use. One of the most popular substances widely used on campuses is 'wee' (marijuana). It is taught to help students stay awake to learn for long hours and even give better understanding when studying difficult subjects. So, academic achievement contributes to some extend substance use among SHS Students. They do all these because they want to raise their self-esteem. SHS Students who are always bullied and timid in school turns to indulge in this act just to have self-confident and be accepted by the so-called "hardcore" students in the school.

For others, substance use is due to peer-influence. Students whose friends use substance, invariably turn to try it in order to be accepted by the group and to avoid mockery from friends. Peers who give recognition to anti-social behaviors turn to influence their friends to take in substance to make them look wild and confident.

1.4. Justification

The result from the study on the prevalence of the use of substance among students in the Second Cycle Schools in Kwahu East District will inform policy makers in Ghana Education Service (GES) to adopt policies that will be relevant to the Students in terms of their mental and psychological health.

The findings from the research on the type of substance commonly used by the students will also benefit policymakers and stakeholders. Policymakers will be well informed to adopt policies that will strengthen and restructure the educational system in the senior high schools by providing Student Psychologist in all Senior High Schools in the District. This will also aid students who go through a lot of psychological challenges to receive help from these professionals rather than resorting to substance. Stakeholder will also take the necessary steps to ensure quality education by supporting and motivating teachers to undertake intensive monitoring of the Students and also improve the parent and teacher relationship.

The result from the study will serve as a baseline for other researchers who will embark on future research in substance use.

1.5. Study Objectives

1.5.1 General Objective

To examine the use of substance among the senior secondary school students in Kwahu East District.

1.5.2 Specific Objectives

1. To estimate the prevalence of substance use among SHS students in Kwahu East District.
2. To identify the type of substances commonly used among SHS students in Kwahu East District.

3. To examine the factors associated with the use of substance among secondary school students in Kwahu East District.

1.6 Research Questions

To address the study objectives, the following questions were posed:

1. To what extent do senior high school students in Kwahu East District use substances?

2. What type of substances do senior high school students in Kwahu East District commonly use?

3. What are the factors associated with the use of substance among secondary school students in the Kwahu East District?

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CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature on the use of psychoactive substances, specifically considering the specific types often used and current use, and the factors associated with their use.

2.2. Types of Substance Use

Globally, some of the most widely used psychoactive substances, according to the WHO, include tobacco, alcohol, marijuana and its derivatives. In recent times, tramadol is making the headlines in various countries, including Nigeria and Ghana. In Ghana, tramadol has become popular in the senior high schools. Figures on the use of individual psychoactive substances indicate that the issue has become a pandemic.

2.3. Prevalence of Tobacco Use

According to the World Health Organization, tobacco use has attained an epidemic dimension, posing one of the biggest public health threats that the world has ever faced. Tobacco-related diseases kill more than 7 million people annually compared with HIV/AIDS, malaria and tuberculosis combined (World Health Organization, 2017)

The WHO reports that from a nationally representatives sample of students aged 13-15 years, the Global School-Based Student Health Survey 2012 revealed that the prevalence of cigarette smoking (whether daily or not) at the time of the survey among students was 8.3% (9.2% and 7.1% among males and females respectively). According to the 2014 GDHS national survey shows that in Ghana 6.3% of males and 0.4% of females (aged 15-49 years) use tobacco on a daily and non-daily basis any form of tobacco (including cigarettes, cigars, a pipe, hookah, shisha, water-pipe etc). The specific use of cigarettes was not as common among both sexes:

4.8% of males and 0.1% of females were current users of tobacco and any form of cigarettes including manufactured and roll-your-own at the time of the survey. The rates for smokeless use of tobacco (including chewing, sniffing or placing the product in the cheek) for the same age group are available in the 2008 GDHS; and are for both males and females were respectively 1.7% and 0.2% at the time of the survey. The age-standardised prevalence estimates (with lower credible and upper credible intervals) for daily tobacco smoking among persons in the country for persons at least 15 years of age is 3.1(1.7 and 4.5)%; 6.1(3.3 and 8.8)% for males, and 0.2(0.1 and 0.3)% for females (Ghana Demographic Health and Survey, 2008).

In the Ghana Demographic and Health Survey, 0.4% (3, 758 out of 9,396) of women aged 15 to 49 years reported smoking cigarettes or pipe or tobacco. Of the 9,396, 1,625 were of high school going age (15-19 years) and only 0.1% of those this category smoked tobacco (Ghana Demographic Health and Survey, 2014a). The Eastern Region accounted for 878 of the total number of women surveyed, and 0.1% of that number ever smoke the pipe. Of those who smoked tobacco (2,070), 0.2% were educated to at least the secondary level by regional and educational decomposition, the Eastern Region of Ghana and the senior high schools or tertiary educational institutions accounted for 878 and 2070 respectively of the female users (Ghana Demographic Health and Survey, 2014b). A study conducted in Kenya by Peltzer et al revealed that 69.8% of college students are victims of cigarette smoking (Peltzer et al., 2011).

At the moment, the spread of tobacco use is growing at a fast rate among students in high schools in most countries but in Ghana, its uses have decreased due to its ban on television and radio advertisement (Lewis, Mcneill, Gilmore, & Britton, 2009).

2.4. Prevalence of Alcohol Use

The use of alcohol, another psychoactive substance with dependence- producing properties (World Health Organization, 2014b) is only about half as harmful as tobacco. According to the Global Information Systems on Alcohol and Health (GISAH) reports alcohol consumption kills 3.3 million annually. Moreover, alcohol accounts for 5.1% of the global burden of diseases and plays a causal role in 60 diseases or more than 200 health conditions in the world (World Health Organization, 2014b). The WHO estimates that 38.3% of the world's population consumes alcohol, and whereas persons aged at least 15 years consumes 6.2 litres of pure alcohol annually, and those who consume alcohol consume an average of 17 litres pure alcohol per year. According to global estimates in 2010, the average consumption of pure alcohol per person 15 years or older was 6.2 litres or 13.5 grams of pure alcohol (World Health Organization, 2014b). According to WHO, half of the recorded alcohol consumed is in the form of spirits. Of the total daily alcohol consumption, about a quarter 24.8% is unrecorded or produced and sold outside normal government controls. Whereas 61.7% had not consumed in the past 12 months, 16% of the drinkers engaged in heavy episodic drinking. The highest alcohol consumption per capita can be found in the WHO EU Regions and the Americas (World Health Organization, 2014b).

An increase in alcohol consumption among high school students has contributed to approximately 4% of the global burden of disease. Alcohol consumption comes with its own consequence, mostly associated with poorer outcomes from infectious disease for heavy drinkers (Jürgen Rehm, 2010).

Alcohol can be classified into different types and according to the (WHO) report, people aged 15 and above in Ethiopia consume 33% of beer, 22% of spirits, others 43% and 2% wine (World Health Organisation, 2011).

2.5. Illicit Drugs

According to the WHO, whether a drug is licit and illicit depends on its production, possession or trafficking. It, therefore, proceeds to define an illicit drug as harmful substances which are produced, trade and/or consumed illegally. These harmful substances are referred to as either "narcotic" or "psychotropic substances" depending on the international convention under which they have scheduled" (World Health Organisation, 2015).

Drug use, disorders, and related health conditions are a major global public health threat (World Health Organization, 2016a) especially to children, young people and their families (World Health Organisation, 2015). Combined figures on the use of illicit drugs are staggering. The WHO reports that in the year 2010 alone 230 million people, or 1 in 20 adults, are estimated to have used an illicit drug at least once, and the use of injectable drugs is reported in 148 countries. Of these, 120 report HIV among those who use injectable illicit drugs. An estimated minimum of 15.3 million persons has drug use disorders. And the cost in the management of illicit drug use is no less disturbing in that close to 2 beds per 100 000 population are available for the treatment of alcohol and substance use disorders (World Health Organization, 2018).

According to the 2015 report by the United Nations Office on Drugs and Crime, West Africa ranks high in the production, use and a transshipment region of illicit drugs. Africa remains a transshipment region for cocaine traffic to Europe and Ghana reported impounding 901 kg of it. Among the most widely used illicit drugs on the global scale are cannabis, opioids, amphetamine-type stimulant (ATS) and cocaine. In Ghana, these and recently tramadol, are prevalent (World Health Organisation, 2015).

2.6. Cannabis

In accordance with the WHO usage of the term, cannabis refers to marijuana or hemp. The use of cannabis appears to have remained high at least from 2012 to 2013. The estimated prevalence of

the use of this substance in 2012 was between 162 million and 324 million people globally (World Health Organisation, 2015). That is about 3.5% and 7% of the world's population. According to the UNODC report, approximately181.8 million people aged 15 – 64 years in the world used cannabis nonmedically in the year 2013, making this substance the most globally commonly used psychoactive substance under international control (United Nation Office on Drugs and Crime, 2015).

Mangerud et al in their research found that, an estimated 22.2 million Americans aged 12 and above were current users of marijuana (Mangerud, Bjerkeset, Holmen, Lydersen, & Indredavik, 2014)

This figure might be increasing considering the increasing demand for treatment for disorders related to the substance and associated health conditions in high- and middle-income countries (World Health Organization, 2016b).

Moreover, Banys revealed that cannabis is an attractive option for users due to its relatively low cost, easy access, low risk of overdose and perceived a low risk of harm (Banys, 2013).

Evidence shows that students who use marijuana have impaired short-term memory and judgment, and distorted perception resulting in poor academic performance. Also since the brain systems of young people are still maturing, regular use may have negative and long-lasting effect on their cognitive development (Volkow, 2017).

Marijuana use comes with its own consequences such as addiction, increases risk of a chronic cough, bronchitis, increases the risk of schizophrenia in vulnerable individuals, and may increase the risk of anxiety, depression, and a motivational syndrome (Volkow, 2011).

2.7 Cocaine

According to the 2015 United Nations Office on Drugs and Crime Report, the prevalence of use of cocaine in Southern, West and Central Africa was high, i.e., 0.7% in 2013. Africa remains a transshipment region for cocaine traffic to Europe and Ghana reported impounding 901 kg of it (United Nation Office on Drugs and Crime, 2015).

2.8. Prevalence of Opioid Use Disorder

Opioids are a category of drugs that include the illicit drug heroin as well as the licit prescription pain relievers oxycodone, hydrocodone, codeine, morphine, fentanyl and others (Authority, 2005). Global trends in the estimated number of drug users from 2009 to 2014 indicate that the use of opioids, including the use of heroin and opium, and the nonmedical use of pharmaceutical opioids, has stabilized at high levels (United Nation Office on Drugs and Crime, 2015). It is estimated that 20.5 million Americans age 12 or older had a substance use disorder in 2015, 2 million involves prescription pain relievers and 591,000 involves heroin (SAMHSA, 2016).

Unsterile injecting practices and risky sexual behavior among opioid users is a major contributor to the spread of HIV, hepatitis, and other infections (Fischer B et al, 2004).

This study focused on tramadol which belongs to the opioid family and is a centrally acting analgesic with a multimode of action. It is used to treat both acute and chronic pain of moderate to severe intensity. Clinically tramadol is considered to be a safe analgesic but one can show the physical dependency of the opioid type when used for a sustained period of time (World Health Organisation, 2017). Recently tramadol has become a public health problem due to its abuse especially, among adolescents. According to a study conducted among college schools in Iran, 12.5% of the students abuse tramadol (Bashirian, Barati, & Fathi, 2014). This calls for public

health intervention since it can result in fatal intoxication. Abuse of tramadol can cause central nervous system depression, coma, and seizure (World Health Organisation, 2017).

2.9. Hallucinogens Use Disorder

Hallucinogens are a class of drugs that cause hallucinations thus profound distortions in a person's perceptions of reality. Hallucinogens can be found in some plants and mushrooms (or their extracts) or can be man-made. They are commonly divided into two broad categories: classic hallucinogens (such as LSD) and dissociative drugs (such as PCP). Consequences of the use of hallucinogens are intense emotional swings and seeing images, hearing sounds, and feeling sensations that seem real but are not (Authority, 2015).

2.10. Factors Associated With Substance Use

2.10.1. Demographic Factors

Some demographic background characteristics have been found risky for substance use. These include age, sex, race and economic status (Peltzer et al., 2011). The role of sex in the consumption of alcohol is manifested in the recorded and unrecorded per capita average consumption in between 2008 and 2010 in that the total average consumption was 7.8 liters and 1.9 liters for males and females. In the year 2010 alone the total alcohol per capita consumption among drinkers aged 15 years or older was 23.6 liters and 13.9 liters of pure alcohol among males and females respectively (World Health Organization, 2014a).

2.10.2. Adolescent Employment

One other factor whose effect on substance use among adolescents has been debated over a long time is their employment. Whereas some initially thought that employment was positive for adolescent development (Hamilton & Crouter, 1980), some have thought that employment by adolescents is a poor academic achievement (Steitz & Owen, 1992). The Association between

employment and substance abuse behaviors among 4800 public high school black and white adolescents, Valois and colleagues (1999) established that young people who work more than 15 hours per week at a job for pay during high school apparently have a higher risk for abuse of substance and the resultant effects (Jackson, Waller, & Ph, 1999).

2.10.3. Psychosocial Factors

2.10.3.1. Relationship with Adults

One of the factors associated with the use of substance among second cycle school students is their relationship with adults. Relationship with adults is defined in terms of children's bonding with parents, parental support, self-disclosure, parent-initiated monitoring of adolescent behavior, and relationships with school personnel. This relationship is either protective against or risky for the use of psychoactive substances. An Adult relationship, defined in terms of children's bonding with parents, can have a double edged-sword effect on adolescent substance use. Whether it is protective against or risky for substance use among adolescents depends on whether the parents are themselves users of psychoactive substances. In a longitudinal study to examine the relationship between parent illicit drug use and bonding to parents as predictors of substance use in children in 150 families headed by drug abusers in methadone treatment for opiate addiction, Fleming and colleagues observed that bonding to parents was moderately negatively correlated with drug use in children whose parents had stopped using psychoactive substances. However, bonding to parents and child use of drugs were positively correlated, though weak, among children whose parents continued using illicit drugs (Fleming, Brewer, Gainey, Msw, & Catalano, 2008).

Linda Ryan and colleagues examined protective effects of four adult relationships (parental support, self-disclosure to parents, parent-initiated monitoring of adolescent behavior, and

relationships with school personnel) on three critical problems of adolescents: substance use among other problematic outcomes using an ethnically diverse high-school students in an economically disadvantaged urban area in the southwestern United States. The investigators reported protective roles of four adult relationships against substance use (Ryan, Miller-loessi, & Nieri, 2007)

In a study of 1800 school-going Black, colored, and White adolescents the family predictors (parental behavioral control, parental monitoring/knowledge and limit setting, marital relations and family stress) of adolescent substance use, Amoateng et al found that higher rates of substance use among adolescents were predicted by parental behavioral control, parental monitoring/knowledge and limit setting, marital relations and family stress (Amoateng, Barber, & Erickson, 2009).

Relationship with adults is defined in terms of relations with significant adults at school and in the family. Within the family, it has been reported that adolescents receiving parental support and encouragement have been noted to protect adolescents against the use of psychoactive substances (Crosnoe, Erickson, & DornBusch, 2002). However, investigators debate on the effectiveness of parental monitoring and restriction (Crosnoe et al., 2002).

Communication with parents in terms of both parental initiated communication and adolescent self-disclosure of parents are protective factors against substance use. One reason is that having discussions helps the adolescents identify what issues that could be detrimental. Aside from feeling obliged to please a listening parent through communication, self-disclosure helps parents to know what is happening in the lives of their adolescents (Kafka & London, 1991;Kerr & Stattin, 2015). In a study of 9th to 12th graders to determine the prevalence and correlates of substance abuse in the past year in Northern New Jersey, Chen et al found that substance abuse

was higher among male than female students. However, after controlling for covariates, the prevalence of substance abuse was higher among females than males (Chen et al, 2004).

2.10.4. Psychological

Studies from neuroscience have associated risky behaviors occurring in adolescents with changes in brain networks involved in motivation and reward processing. This involves a network in the brain that is mainly responsible for reward processing. Evidence shows that the stratum dopamine circuit, a key node in this network, changes drastically in adolescence than in childhood or adulthood. Brain patterns show that adolescents have a greater desire for rewards and experience more pleasure when receiving rewards than do children and adults. The role of this network as expressed insensitivity to rewards and punishment is not very clear with regards to drug use including other risky behaviors characteristic of adolescents. Whereas some studies indicate that adolescents who exhibit high reward sensitivity and low punishment sensitivity are more prone to substance use, others think that the characteristic of high reward sensitivity confers benefits.

In a study to examine the association between reward sensitivity and substance abuse in middle school and 216 high school students, Jeremy Genovese and Deborah Wallace established a positive relationship between a high reward and low punishment sensitivities and substance abuse (Genovese & Wallace, 2010).

Anxiety has been found to increase the risk for substance use, and the use of substances has also been found to increase the risk for anxiety (Kushner G, Abram B, & Carrier, 2000). These feelings may lead to problems related to heavy substance use as people find the use of substances reinforcing (because it decreases uncomfortable feelings) and therefore increase the frequency and quantity of their use (Marmorstein, White, Loeber, & Stouthamer-loeber, 2010).

Marmorstein et al (2009) examined generalized and social anxiety as a predictor of age at first use of substances and progression to substance use problems among boys. It was found that generalized anxiety, a "persistent and excessive worry about a number of different things"[1], and social anxiety (shyness and withdrawal) strongly predicted the age of first use of alcohol and tobacco than for marijuana use. It was also found that both generalized and social anxiety predicted risk for the development of marijuana problems but not alcohol or tobacco problems.

Factors that explain the prevalence of consumption of alcohol on a population level include socio-demographic factors, prevalence rates of abstention, level of economic development, culture, and preferred beverage types

2.11. Illicit Drug Use

The WHO report on the health and social effects of nonmedical cannabis use categorized the risk factors associated with illicit drug use or source of those factors as the community/society; the school and peers; the family; the individual and the media. Risk factors under the community or society include laws and norms that favor drug use, availability of drugs, and access to drugs, extreme poverty, and anti-social behavior in childhood. Risk factors which are more common among adolescence fall under the school/education and peers and include poor academic achievement, low commitment to school, and peer group attitudes towards substance. The media poses as a risk for illicit drug usage by advertising norms that are favourable towards drug use (World Health Organization, 2014a).

In the case of illicit drug use, the WHO suspects that the risk and protective factors associated for the nonmedical use of cannabis as well as other drugs are similar for high income and developing countries, though further studies are needed for confirmation. In developing countries, the factors

that increase the risk of onset of cannabis use include the availability of the substance, the use of tobacco and alcohol at an early age, and social norms that are tolerant of alcohol and drug use.

Whereas a socially disadvantaged background is a higher risk factor for illicit drug use (Rudatsikira et al, 2009), the use of illicit drugs is common among specific subgroups and party settings (World Health Organization, 2014a).

2.12 Summary

It was also found that some socio-demographic factors, familial factors such as relationship to adults in the family, and psychological factors, are associated with the use of psychoactive substances. However, it has been found that some of these factors, singularly or a combination with other, determine the use of substances more than they do for others in specific contexts.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This Chapter describes the methods used for the research. It includes study design, study location, variables, study population, sampling size, sampling methods, data collection technique, data collection methods and tools, data processing and ethical consideration.

3.2 Study Design

The study utilize a cross-sectional descriptive design using quantitative approach to gather data on substance use from senior high school students in Kwahu East District.

3.3 Study Area

The study area is Kwahu East District which was carved from Kwahu South in 2008 by a Legislative Instrument (L.I 1839). Specifically, the study was done in senior high schools. There are seven senior high schools in the district comprising of a single-sex and six mixed schools. Three SHS were randomly selected for the study. According to the District education office, the total enrollment of SHS students in the district is 8896.

3.4 Study Variable

The dependent variable substance use was a composite variable comprising of various measures of use as reported by the students. The overall rating of substance use was categorized as ever used, current use and lifetime use. The independents variables are socio-demographic characteristics, family domain (parents' use of substance, sibling use of substance and parental monitoring), School domain (awareness of substance use by students), community domain (physical and sexual abuse) and individual domain (friends' use of substance). All the independent variables were measured directly from the questionnaire.

3.5. Study Population

The study population was senior high school students in the Kwahu East district who were selected during the period of data collection. The study targeted a total population of 4993 students from three different schools within the district. The study also targeted students in form 1-3 from the three schools to give a broad picture of the factors associated with substance use among senior high school students.

3.6 Sample Size Determination

In a research conducted by Addo et al (2015), the prevalence of the use of substance among second cycle school students in Greater Accra Region experiencing parental divorce was 48.8%. There has not been any study in connection with the use of substance among students in the second cycle schools in Kwahu East District. Therefore, using the proportion of students who used substance from Addo's study, then the minimum sample size required for this study was calculated using the formula by Cochran (1977) as follows:

$$n = \frac{z^2 * p * q}{d^2}$$

Where:

n= desired sample size

z= standard deviation at 96% confidence interval (standard value = 1.96)

p= estimated proportion who use substance

q= proportion who do not use substance = 1-p

d= margin of error

Furthermore, a 5% precision was assumed. Thus, substituting these parameters in the formula, the sample size was computed as follows:

$$n = \frac{1.96^2 * 0.49 * 0.51}{}$$

0.05 = 384

The sample size was adjusted upwards by 5% non-response rate resulting in a final sample size of 403.

3.7 Sampling Methods

Three schools were randomly selected from total of seven schools in the district by balloting. An appropriate sampling technique was used to determine sample size for the selected schools. From the estimated minimum sample size, the proportion of students for each school was determined as shown in Table 3.1

Table 3.1 Enrolment of Schools for the Survey

Name of school	Total enrollment	Computed sample size
School A	1625	131
School B	942	76
School C	2426	196
Total	4993	403

A systematic random sampling procedure was employed to select respondents from each school. The study sample recruited students from SHS 1 to SHS 3 in each selected schools.

Moreover, a class register was used to select the required number of students needed for the study and the required number of students was selected by systematic random sampling.

3.8. Sampling Procedure

A 3-stage random and systematic sampling procedure with probability proportional to size[1] was used to select respondents as follows:

- The first stage involved a random selection of three schools.

[1]The measure of size was the number of students in each school.

- The second stage was made of a selection of classes in each school. We assumed that each form has the same characteristics hence a random sampling was used to select the various classes from SHS1 to SHS3. Moreover, one class was randomly selected from each of these classes in the various forms.
- The third stage involved a systematic selection of participants from the classes using the class register. Firstly, the total number of participants from each school was calculated. For the ethical reason the name of the schools cannot be disclosed, therefore each school will be represented with an alphabet as shown in Table 3.1.

. In the selection of participants from each class, a systematic sampling was used. Thus, if the total number of students in SHS1 was 400 and the total sample size for each class was 57 then,

$$\frac{400}{57} = 7$$

In order to have the desired sample size as a benchmark, a random sampling was used again to select the 1st to the 9th students and if the 2nd person was selected as the first respondent; then the second respondent was the 9th respondent.

3.9 Inclusion Criteria

All students in the selected senior high schools in the district who consented to participate in the study were eligible.

3.9.1. Exclusion Criteria

All senior high school students who were not enrolled in the selected schools for the study.

3.10. Quality Control

The following activities were undertaken to ensure the quality of data collected;

- Two research assistants were recruited and undergone a one-day training on the purpose of the study, study objectives, method of sampling, data collection technique, and ethical consideration.
- The training session for research assistants was covered into detail the protocols, techniques, and courtesies to be observed during interviews and the process for obtaining informed consent from study participants.
- Research assistants were taken through all the questionnaires to be administered and were given the opportunity to clarify issues pertaining to the questionnaires that were not clear to them.
- Questionnaires were numbered, coded, sorted out and kept in files that were labeled with the names of the three schools where the study took place.
- The questionnaire was reviewed by the academic supervisor.
- Data collected was cross-checked daily for accuracy and completeness before entering data to ensure validity and reliability.

3.11. Data Collection Technique and Tool

A structured questionnaire was adapted from the 2012 Global School-based Student Health Survey (GSHS). The questionnaire was modified to reflect the objectives of the study and was used to obtain quantitative data from the students in the three selected schools in the district. The questionnaire was made up of a close-ended question with a response set to each question. The questionnaire was in three sections comprising of socio-demographical characteristics, types of a substance commonly use (knowledge on substances use, types of substance used, reasons for the substance used and the effects of substance used), factors associated with substance use and prevalence of substance use. The questionnaire was administered in the English Language. The

questionnaire was self –administered. Research assistants assisted students who find it difficult to answer the questionnaire.

3.12. Data Processing and Analysis

All data collected by structured questionnaire was coded and analyzed by using Stata version 15. During the preparation of the questionnaire, a code was given to each answer of a question to facilitate data entry into Stata version 15.

Data cleaning was done and the frequencies of responses were generated. The results from the analysis were presented as frequency tables, percentages, and charts.

To investigate the factors associated with adolescent substance use, cross tabulations, Pearson's chi-square, bivariate and multivariate analyses (logistic regression) was used. Thus at a significant level of 5%, all p-values less than 0.05 was considered significant.

Categorical variables such as socio-demographic characteristics were described in frequencies and percentages in a table.

3.13. Ethical Consideration

The following ethical issues were considered in the work;

- Ethical clearance was obtained from the Ethics Committee for Basic and Applied Science (ECBAS) of the University of Ghana.
- A written letter was taken from the Department of Population, Family and Reproductive Health of the School of Public Health and permission was sought from Ghana Education Service as well as heads of the selected schools.
- Permission was obtained from the Kwahu East District Education Directorate and a copy of the permission was sent to the heads of SHS selected for the study.

- Day-students, who were less than 18 years parental assent obtained from parents/ guardian before commencement of the study. However, for students of the same age who were in the boarding house, a proxy consent was sought from the school authorities through the Senior House-master.
- Informed consent was obtained from all participants after the purpose and objectives of the study was explained in detailed to students and they were given the opportunity to decide whether they would like to partake in the study or not.
- The use of substances is usually considered private and as such confidential, anonymity was assured by coding the questionnaires and the use of ID numbers in place of their names.
- No students' name was recorded, and thus the data cannot be linked to any individual student.
- The questionnaire, notes pad and soft copies of the data were securely kept by the student investigator.

3.14. Pre-testing

The study instrument was pre-tested to ensure the questions are clear, without ambiguity and to capture other information which may be required.

Points were noted and assessed during the pretest include the availability of the sample needed for the full study, the desire of the pupils to participate, clarity of the language use and time needed for administering the questionnaire. Based on feedback from the pre-test the questionnaire was modified to ensure it's suitable for the study.

3.15 Conclusion

This chapter discussed the methods employed in the study; sampling technique, calculation of sample size, data analysis, and ethical considerations were clearly discussed.

CHAPTER FOUR

4.0 RESULTS

This chapter presents the analysis of the data variables used in the research and their interpretations.

4.1. Socio-Demographic Characteristics of Senior High School Students

This section describes the background characteristics of the study participants as represented in Table 4.1. A total of 384 senior high school students participated in the study. Their ages range from 14 to 21 years with an overall mean age of 16.9 years (SD ± 1.29). Almost three quarters (70.57%) of the respondents were between 14 to 17 years whiles 18 to 21 years accounted for almost a quarter (29.43%) respondents. Comparatively, males were significantly older than the females (17.2± 1.32 Vs. 16.5 ± 1.11, P< 0.001).

With regards to student status, nine out of ten (90.6%) were boarders with no significant difference (P= 0.258) between a male and a female boarding student. Majority of the respondents 94.8% were Christians. Regarding occupation, nearly a quarter (27.3) of the respondents' fathers were into trading whiles almost three- quarter of their mothers were into trading as well as trading being the major occupation 27.3% and 73.4% for both father and mother respectively. Most of the respondents 34.5% had a good academic performance with 4.2% performing poorly.

Table 4.1. Socio-Demographic Characteristics of Senior High School Students

	N (%)			
Variables	**Male**	**Female**	**Total**	**P- Value**
Age (Years) M±SD	17.2± 1.32	16.5± 1.11	16.9± 1.29	<0.001***
Age groups in year				
14-17	145 (62.23)	126 (83.44)	271 (70.57)	<0.001***

18-21	88 (37.77)	25 (16.56)	113 (29.43)	
Student Status				
Boarding	208 (89.27)	140 (92.72)	348 (90.63)	0.258
Day-Student	9 (25)	11 (7.28)	36 (9.38)	
Religion				
Christianity	219 (94.0)	145 (96.0)	364 (95.0)	
Muslim	13 (5.6)	6 (4.0)	19 (5.0)	0.558
Others	1 (0.4)	0 (0.0)	1 (2.6)	
Class Level				
SHS 1	92 (39.5)	61 (40.4)	153 (39.8)	0.466
SHS 2	73 (31.3)	54 (35.8)	127 (33.1)	
SHS 3	68 (29.2)	36 (23.8)	104 (27.1)	
father's Occupation				
Civil Servant	31(13.3)	13 (8.6)	44 (11.5)	0.091
Public Servant	31 (13.3)	28 (18.5)	59 (15.4)	
Trading	63 (27.0)	42 (27.8)	105 (27.3)	
Farming	38 (16.3)	10 (6.6)	48 (12.5)	
Artisan	16 (6.9)	20 (13.25)	36 (9.38)	
Unemployed	2 (0.9)	3 (2.0)	5 (1.3)	
Others	52 (22.3)	35 (23.2)	87 (22.7)	
mother's Occupation				
Civil Servant	9 (3.9)	5 (3.3)	14 (3.7)	0.711
Public Servant	10 (4.3)	11 (7.3)	21 (5.5)	
Trading	173 (74.3)	109 (72.2)	282 (73.4)	
Farming	11 (4.7)	5 (3.3)	16 (4.2)	
Artisan	15 (6.4)	14(9.3)	29 (7.6)	
Unemployed	3 (1.3)	2 (1.3)	5 (1.3)	
Others	12 (5.2)	5 (3.3)	17 (4.4)	
Academic Performance				
Poor	9 (3.9)	7 (4.6)	16 (4.2)	0.834
Fair	43 (18.5)	22 (14.6)	65 (17.0)	
Good	80 (34.5)	52 (34.4)	132 (34.5)	
Very Good	45(19.3)	34 (22.5)	79(20.6)	

Excellence	56 (24.1)	36 (23.84)	92 (24.0)

4.2. Prevalence of Substance Use among Students

This section depicts the extent to which substance use is rampant among SHS Student. According to the Table 4.2, 6 out of 10 (63.4%) of respondents from 14years to 17 years use a substance and 3 out of 10 (36.6%) from 18 years to 21 years with p= 0.026 which shows a significant difference between age and substance use. Regarding sex, majority of the male respondents 69.4% use substance as compared to female respondents 30.6%. There is a significant difference between sex and substance use (p=0.01).

From the Table 4.2, 9 out of 10 (94.8%) of respondents who used substance are Christians with a p= 0.753; showing that there is no significant difference between religion and substance use. With regards to student status, almost 9 out of 10 (89.6%) of respondents who use substance are boarding students. There is no significant difference p= 0.597 between Student Status and substance use (p= 0.597).

According to the study, about four in ten (39.8%) of respondents who use substance are in SHS 1, almost one-third (33.1%) of the respondents are in SHS 2 and more than a quarter (27.1%) are in SHS 3 with no significant difference p= 0.441 between class level and substance use. About three-quarters (73.9%) of respondents whose mothers are traders use a substance and those with unemployed mothers are the least 1.2% to use a substance. There is no significant difference p= 0.938 between mothers' occupation and substance use.

With regards to fathers' occupation, 27.6% of respondents whose fathers are into trading use substance and none of their fathers are unemployed. There is no significant difference p= 0.135 between fathers' occupation and substance use. According to the study, 30.6% of the respondents

with good and excellent academic performance respectively use a substance and 6.0% of respondents with poor academic performance use substance. There is a significant difference p= 0.003 between academic performance and substance use.

Seven out of 10 (71%) who use substance were introduced to it by friends with a significant difference p= <0.001 between those who don't use a substance.

Table 4.2.Prevalence Of Ever Use Of Substance among SHS Students

	Substance Use			
Variable	**No**	**Yes**	**Total**	**P-Value**
Age				
14-17	188 (74.3)	83 (63.4)	271 (70.57)	0.026*
18-21	65 (25.7)	48 (36.6)	113 (29.4)	
Sex				
Male	140 (56)	93 (69.4)	233 (60.7)	0.01*
Female	110 (44)	41 (30.6)	151 (39.3)	
Class Level				
SHS 1	98 (39.2)	55 (41.04)	153 (39.8)	0.441
SHS 2	88 (35.2)	39 (29.1)	127 (33.1)	
SHS 3	64 (25.6)	40 (29.9)	104 (27.1)	
Religion				
Christianity	237 (94.8)	127 (94.8)	364 (94.8)	0.753
Muslim	12 (4.8)	7 (5.2)	19 (5.0)	
Others	1 (0.4)	0 (0.0)	1 (0.3)	
Student Status				
Boarding	228 (91.2)	120 (89.6)	348 (90.6)	0.597
Day- Student	22 (8.8)	14 (10.5)	36 (9.4)	

Father's Occupation				
Civil Servant	25 (10.0)	19 (14.2)	44 (11.5)	0.135
Public Servant	43 (17.2)	16 (11.9)	59 (15.4)	
Trading	68 (27.2)	37 (27.6)	105 (27.3)	
Farming	28 (11.2)	20(14.9)	48(12.5)	
Artisan	28 (11.2)	8 (6.0)	36 (9.4)	
Unemployed	5 (2.0)	0 (0.0)	5 (1.3)	
Others	53 (21.2)	34 (25.4)	87 (22.7)	
Mother's Occupation				
Civil Servant	8 (3.2)	6 (4.5)	14 (3.7)	0.938
Public Servant	15 (6.0)	6 (4.5)	21 (5.5)	
Trading	183 (73.2)	99 (73.9)	282 (73.4)	
Farming	9 (3.6)	7 (5.2)	16 (4.2)	
Artisan	20 (8.0)	9 (6.7)	29 (7.6)	
Unemployed	3 (1.2)	2 (1.5)	5 (1.3)	
Others	12 (4.8)	5 (3.7)	17 (4.4)	
Academic Performance				
Poor	8 (3.2)	8 (6.0)	16 (4.2)	0.003**
Fair	36 (14.4)	29 (21.64)	65 (16.9)	
Good	92 (36.8)	41 (30.6)	133 (34.6)	
Very Good	64 (25.6))	15 (11.2)	79(20.6)	
Excellence	51 (20.4)	41 (30.6)	92 (24.0)	
Introduction to Substance use				
Sibling	1 (0.40)	4 (3.05)	5 (1.30)	<0.0001 ***
Uncle	1 (0.04)	8 (6.11)	9 (2.34)	
Friends	3 (1.19)	93 (70.99)	96 (25.00)	
Parents	2 (0.79)	4 (3.05)	6 (1.56)	

None	246 (97.23)	22 (16.79)	268 (69.79)

4.3. Prevalence of Substance Use during the Past 30 Days

This section explains the prevalence of substance use among SHS Students during the past 30 days they were in school.

Table 4.3. Shows the Prevalence of Substance Use during the Past 30 Days

A one-third 43 (37.7%) of the students were current alcohol users during the past 9 days whilst in school. There was no significant difference (p=0.121) between males and females who drink alcohol. The study also recorded that, 8 (34.8%) of student respondents were current tobacco/ cigarette smokers during the past 9 days whiles in school with no significant difference between males and females who used tobacco (p= 0.651).

With regards to the acquisition of substance by students, the study revealed that almost half (46.1%) of the students' who used substances within the past 30 days got it from friends, 15.6% said they bought it, 6.3% had it from family members and 5.5% stole it from other users

Table 4.3. Prevalence of Current Substance Users

	Sex of Respondents			
Variables	**Female**	**Male**	**Total**	**P- Value**
Alcohol usage in the past 30 days				
Non	18 (48.7)	22 (28.6)	40 (35.1)	0.121
1-9 days	11 (29.7)	32 (41.6)	43 (37.7)	
10-19 days	8 (21.6)	19 (24.7)	27 (23.7)	
20- 30 days	0	4 (5.2)	4 (3.5)	

Tobacco use in the past 30 days				
Non	2 (66.7)	9 (45.0)	11 (47.8)	0.651
1-9 days	1 (33.3)	7 (35.0)	8 (34.8)	
10-19 days	0	4 (20.0)	4 (17.4)	

Variables	**Freq.**	**Percent**
Acquisition of Substance in the past 30 days		
I did not use substance	34	26.6
1 bought it	20	15.63
I got it from friends	59	46.1
I got it from my family	8	6.3
1 stole it	7	5.5

4.4. Types of Substances Commonly Used By Senior High School Students

Table 4.4 presents the various types of substances commonly used by the senior high school students. About 20 (8.6%) out of the 233 (91.4%) of the male students used tobacco and 3(2.0%) out 151 (98.0%) of female students also used tobacco. There is a significant difference (p= 0.008) between males who use tobacco and females who use tobacco also. Alcohol usage recorded 33.1% for male students and 24.5% for female students. There is no significant difference (p= 0.073) between male students who use alcohol and female students who also use alcohol.

About 10.3% of the male students and 2.0% of the females reported using marijuana. There was a significant difference (p= 0.002) between male students who use marijuana and female students who use marijuana. Tramadol use indicated 9.4% of male students and 1.3% of the female

students with a significant difference (p= 0.001) between male students and female students who use tramadol.

Table 4.4. Types of Substance Commonly Used By SHS Students

Variable	Male	Female	Total	P-Value
Tobacco				
Yes	20 (8.6)	3 (2.0)	23 (6.0)	0.008**
No	213 (91.4)	148 (98.0)	361 (94.0)	
Alcohol				
Yes	77 (33.1)	37 (24.5)	114 (29.7)	0.073
No	156 (67.0)	114 (75.5)	270 (70.3)	
Marijuana				
Yes	24 (10.3)	3 (2.0)	27 (7.03)	0.002**
No	209 (89.7)	148 (98.0)	357 (92.97)	
Tramadol				
Yes	22 (9.4)	2 (1.3)	24 (6.3)	0.001**
No	211 (90.6)	149 (98.68)	360 (93.75)	

4.5. Mean Age of Initiation of Substance Use by Senior High School Students

This section presents the mean age of initiation of the types of substance use by Senior High School Students. According to Table 4.5, the mean age of initiation of tobacco was 14.4 years ±2.02 SD, [95% CI: 135.2% - 154.8%]. There was no significant difference between the mean age of initiation of tobacco for males and females respectively (14.7±2.10 Vs. 13.7 ± 1.53, P = 0.259). The overall mean age of initiation of alcohol was 14.5 years ± 2.26 SD, [95% CI: 140.9% – 149.3%]. Comparatively, there was no significant difference between the mean age of initiation of alcohol for males and females respectively (14.7 ± 3.35 Vs. 14.1 ± 2.01, p= 0.081).

From Table 4.5, the overall mean age of initiation was 14.6 ± 2.37 SD, [95% CI: 136.5% - 155.3%] with no significant difference between the sex of the students (14.7 ± 2.28 vs. 14 ±

3.61, p = 0.328). Tramadol recorded a mean age of initiation of 16.4 years ± 1.24 SD, [95% CI: 158.5% - 169.0%]. However, there was no significant difference between the age of initiation of a substance by males and that of the females (16.5 ± 1.18 vs. 15.5 ±2.12. p = 0.155).

Table 4.5. Mean Age of Initiation of the Various Types of Substance Use by Students

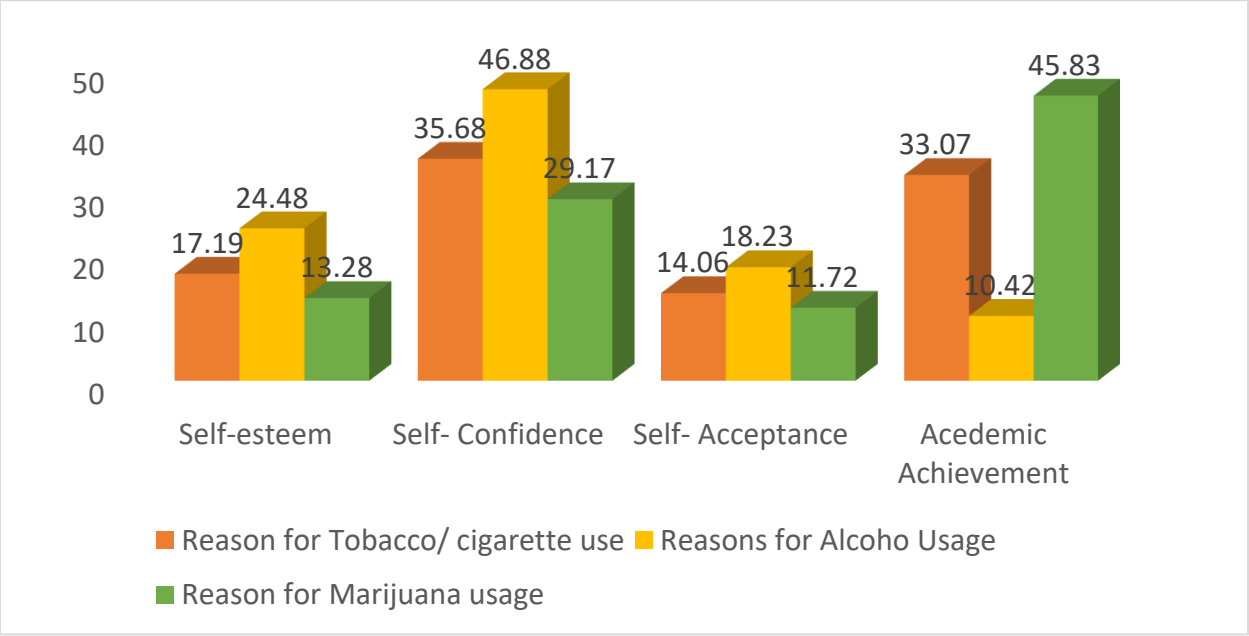
Variable	Female	Total	P- Value
Age of initiation of Tobacco (years) M ±SD	13.7± 1.53	14.4 ± 2.02	0.259
Age of initiation of Alcohol (years) M ± SD	14.1 ± 2.01	14.5 ± 2.26	0.081
Age of initiation of Marijuana (years) M±SD	14 ± 3.61	14.6 ± 2.37	0.328
Age of initiation of Tramadol (years) M ±SD	15.5 ± 2.12	16.4 ± 1.24	0.155

*$p<0.05$

4.6. Reasons for Substance Use by Students

The study found that, 46.9% of students consume alcohol for self- confidence, 24.5% self-esteem and 18.2% says self-acceptance. However, 4 out of 10 (45.8%) of respondents says students smoke marijuana for academic achievement.

Fig 2. Shows Reasons for Substance Use among Students in Senior High School



4.7. Lifetime Prevalence of Substance Use by Students

Table 4.6 presents lifetime users of substance use by students. About 117 (30.47%) reported lifetime use of alcohol, 21 (5.47%) reported life time use of tramadol, and 19 (4.95%) also reported lifetime use of marijuana.

Table 4.6. Shows the Frequency Distribution of Lifetime Users of Substance by Students

Variable		Frequency	Percentage
lifetime usage of alcohol	I did not use substance	267	69.53
	1-9 times	70	18.23
	10-19 times	15	3.91
	20 or more times	32	8.33
lifetime usage of tramadol	1 did not use substance	363	94.53
	1-9 times	17	4.43
	10-19 times	2	0.52

	20 or more times	2	0.52
lifetime user of marijuana	I did not use substance	365	95.05
	1-9 times	4	1.04
	10-19 times	8	2.08
	20 or more times	7	1.82

4.8. Factors Associated With Substance Use

After controlling for other variables, such as sex, age , status, student relationship with parent, mothers' attitude towards substance, fathers' attitude towards substance, friends use of substance, awareness of substance use by other student, family chronicle of substance use, parental monitoring, physically abused and sexually abused, five variables were significantly associated with the use of substance among students in the multiple logistic regression model: friends' usage of substance (p= 0.002), Awareness of substance used by other students (p= 0.016), parental monitoring (p= 0.003), students physically abused (p= 0.033) and sexual abused (p= 0.027) (Table 5). Students who responded that they have friends who use substance were almost three times more likely to use the substance as compared to those who responded to the contrary (AOR= 2.82; 95% CI; 1.46 – 5.45).

Students who reported that they were aware of other students who used a substance increased the odds of using substance, thus, students who are aware of substance use by other students were nearly three times more likely to use substance than those who reported that they were not aware of substance use by other students (AOR= 2.60; 95% CI; 1.19 – 5.68). Furthermore, the odds of students whose parents monitor them always have 84% reduced of using substance than students whose parents don't monitor (AOR= 0.16; 95% CI; 0.49- 0.54).

However, students who reported that they had been physically abused 5 or more times were three times more likely to use substance than students who had not been physically abused before (AOR= 3.50; 95% CI; 1.11- 11.08). Similarly, the odds of students who have been sexually abused were almost 2 times more likely of using substance than those who have not been abused sexually (AOR= 1.99; 95% CI; 1.08- 3.67).

Table 6. Multiple Logistic Regression of Factors Associated With Substance Use among Senior High School

Variables		Substance Use		OR (95% CI)		OR (95% CI)	
		Yes	No	Crude	P-Value	Adjusted	P-Value
		n (%)	n (%)				
Sex of Respondents	Female (ref)	41 (31.30)	110 (43.48)				
	Male	90 (63.70)	143 (56.52)	1.69 (1.08-2.64)	0.021	1.01 (0.58 - 1.74)	0.975
Age of Respondents	14-17 (ref)	83 (63.36)	188 (74.31)				
	18-21	48 (36.64)	65 (25.69)	1.67 (1.06 - 2.63)	0.026	1.42 (0.81 - 2.43)	0.203
Student Status	Day (ref)	14 (10.69)	22 (8.70)				
	Boarder	117 (89.31)	231 (9.30)	0.80 (0.39 - 1.61)	0.526	0.91 (0.40 - 2.10)	0.826
Student relationship with parent	Not close (ref)	19 (14.50)	17 (6.72)				
	Somewhat	24 (18.32)	29 (11.46)	0.74 (0.32 - 1.73	0.488	0.78 (0.28 - 2.13)	0.625
	very close	88 (67.18)	207 (81.82)				
Parental Monitoring	Never (ref)	11 (8.40)	8 (3.16)				
	Sometime	43 (32.82)	42 (16.60)	0.74 (0.27 - 2.03)	0.565	0.30 (0.09 - 1.02)	0.055
	Always	77 (53.78)	203 (80.24)	0.28 (0.11 - 0.71)	0.008	0.16 (0.49 - 0.54)	0.003
mother's attitude towards substance	Disapprove (ref)	74 (56.49)	184 (72.73)				
	Don't know/ not sure	44 (33.59)	58 (22.92)	1.89 (1.17 - 3.04)	0.009	2.13 (1.01 - 4.50)	0.047

	Approve	13 (9.92)	11 (4.35)	2.94 (1.26 - 6.86)	0.013	1.46 (0.52 - 4.14)	0.476
Father's attitude toward substance use	Disapprove (ref)	67 (51.15)	167 (66.01)				
	Don't know/ not sure	48 (36.64)	70 (27.67)	1.71 (1.07 - 2.72)	0.024	1.09 (0.52 - 2.26)	0.825
	Approve	16 (12.21)	16 (6.32)	2.49 (1.18 - 5.27)	0.017	1.21 (0.47 - 3.09)	0.692
Prevalence of Physical Abuse	None (ref)	104 (79.39)	234 (92.49)				
	1-4 times	15 (11.45)	13 (5.14)	2.60 (1.19 - 5.65)	0.016	1.24 (0.52 - 2.99)	0.628
	5 or more times	12 (9.16)	6 (2.37)	4.50 (1.64 - 12.32)	0.003	3.50 (1.11 - 11.08)	0.033
Sexually abuse of students	No (ref)	89 (67.94)	223 (88.14)				
	Yes	42 (32.06)	30 (11.86)	3.51 (2.07 - 5.95)	<0.001	1.99 (1.08 - 3.67)	0.027
Family history of substance	No (ref)	53 (40.46)	150 (59.29)				
	Yes	78 (59.54)	103 (40.71)	2.14 (1.39 - 3.29)	0.001	1.59 (0.96 - 2.63)	0.069
Friends use of substance	No (ref)	19 (14.50)	118 (46.64)				
	Yes	112 (85.50)	135 (53.36)	5.15 (2.99 - 8.89)	<0.001	2.82 (1.46 - 5.45)	0.002
Awareness of substance use by students	No (ref)	14 (10.69)	81 (32.02)				
	Yes	117 (89.31)	172 (67.98)	3.94 (2.13 - 7.27)	< 0.001	2.60 (1.19 - 5.68)	0.016

Abbreviation; OR, Odds Ratio; CI, Confidence Interval

NB. * Remained significant at P-Value <0.05

** Remained significant at P-Value ≤ 0.001

4.9 Conclusion

This chapter presents results from the survey. The results suggested that friends use of a substance was the strongest predictor associated with substance use among senior high school students in Kwahu East District.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

The study in Kwahu East District was to estimate the prevalence of substance use, identify the type of substances commonly used and determine factors associated with substance use. This chapter discusses the findings in light of the study objectives and compare the findings with related studies across the world.

5.2 Prevalence of Substance Use

The study revealed that males are two times more likely than females to have used substance. This is consistent with a study conducted by (UNODC, 2015; Nkyi, 2014) who found out that the prevalence of the use of a substance was higher among males than females. This could be as due to the fact that males are risk takers compared to females. They are also unable to express their emotions and pains hence turn to resort to a substance as a source of relief. Moreover, males turn to experiment and explore their environment than females, thus taking risk is part of their exploration. On the other hand, many societies hold more negative attitudes towards women's drinking habit compared to men's, which, depending on the cultural context, protect women and may increase men's vulnerability to substance use.

The lifetime prevalence of alcohol use in this study was lower than a study conducted among secondary students in Ethiopia recording 59% lifetime prevalence of alcohol use (Birhanu et al., 2014). Similarly, a study conducted by Peltzer et al recorded a higher prevalence of lifetime alcohol users among secondary students in Kenya with a lifetime prevalence of 51.9% (Peltzer et al., 2011). This explains the fact that most students don't drink when they are on vacation than

when they are in school due to strong parental monitoring hence the risk of addiction could be minimized.

However, with regards to current alcohol drinkers, this study indicated a high prevalence rate with a significant difference between males and females. Moreover, more males than females reported current alcohol users and smoking. This is in accordance with a study conducted in Ethiopia among high school students (Birhanu et al., 2014). This implies that most students drink alcohol under the influence of their peers. It could also be inadequate monitoring and supervision by teachers in the various schools that have contributed to this high prevalence rate.

Prevalence of alcohol use was higher than all the other substances under this study in which there was no significant difference between males and females who used alcohol. It was however found out that the prevalence of ever used alcohol was 29.7%. This result is consistent with the findings of a study conducted among second cycle schools in the country which recorded a prevalence of ever used alcohol drinking as 25.3% (Dennis-antwi, 2003). In contrast, Nkyi's study recorded almost two times higher prevalence of (44.9%) ever used alcohol drinking (Nkyi, 2014). The difference observed in these three studies could be differences in sample size, design and study site. The decreased in the gap between male and female alcohol consumption implies that alcohol consumption has now been seen as a fashion in the various second cycle school. This can lead to alcohol dependency syndromes which are life-threatening to these students.

The findings from the bivariate analysis revealed a 6.0% prevalence of tobacco use among the student respondents. This was in inconsistent with a school-based study conducted among adolescents in Ethiopia with 28.6% prevalence of ever used tobacco (Dereje et al,2014). The inconsistency might be due to the ban of advertisement of tobacco product and sponsorship by

tobacco industries on media, billboard, and any sport or event. On the other hand, anti-smoking campaign could be a protective factor of tobacco use among students.

Moreover, the findings in this study also indicated a 7% prevalence of ever used marijuana among students in the Kwahu East District. This is higher than the findings in a national survey conducted among secondary schools in the country (Dennis-antwi et al, 2003). This implies that marijuana use keeps on increasing among second cycle schools as the year pass by. This also implies that if the government doesn't put in interventions there is going to be a high rate of psychosis and withdrawal syndrome (Volkow, 2011) in the near future.

Prevalence of tramadol use was 6.3%, with 9.4% as male users and 1.3% as female users which is lower than a study conducted in Egypt among the adolescent recording a prevalence of 8.8% (Bassiony, El-deen, & Yousef, 2015). A Similar study was conducted in Iran among college students. The result revealed that the prevalence of tramadol was 12.5% among the college students (Bashirian et al., 2014) which was also higher than what this study found. These findings imply a high rate of substance dependency in the near future which might result in higher mental problems and death.

5.3 Types of Substance Commonly Used

Substances that were commonly used by the students were alcohol followed by marijuana, tramadol, and tobacco. In this study, the mean age at initiation of alcoholic drink was 14.5 years, with the youngest reported age being 9 years. This is consistent with a study conducted by Otieno and Ofulla where, the highest prevalence of alcohol use among young people aged 16-18 years was higher (Otieno and Ofulla, 2009) than what was found in this current study. Several other studies have reported early age of initiation of alcohol use among teenagers and the associated psychological problems in later life (Gil, Wagner, & Tubman, 2004) Despite the fact

that the legal drinking age in Ghana has been set at 18 years and above for a long time, alcohol is available for sale to underage drinkers with a mean age of 14.5 years as seen in study.

The study indicated that tobacco smoking tends to be initiated early at a mean age of 14.4 years, with the youngest reported age being 10 years. This is consistent with (Johnson & Chamberlain, 2008) which revealed that alcohol and tobacco are the most likely to have been initiated at an early age. Marijuana was also found to be one of the common types of substance use by students in this study with a mean age of initiation being 14.6 years, the youngest age, 10 years and the oldest 18 years. This is significantly lower than the mean age of initiation of marijuana in a (national) survey on drug use and health which recorded the mean age of initiation as 17 years (SAMHSA, 2009).

The study also revealed that tramadol is common among the substances used by students with a mean age of initiation of 16.4 years with an initiation age ranging from 14-18 years. This is consistent with a study conducted among adolescents in Egypt whereby the mean age of onset of tramadol use was 16.5 years (Bashirian et al., 2014)

5.4. Acquisition of Substance Use

With regards to the current study most of the students' respondents who were current users of substance acquire it from friends. This implies that students come to school with substances without being caught by the school authorities hence monitoring of students in the schools should be strengthened. This is inconsistent with a previous work in Kenya among second cycle schools showing that most students acquire substance from shops around the school (Rugendo, 2016)

5.4 Factors Associated with Substance Use

From the logistic regression, It was found that parental monitoring, friends' use of a substance, physical abuse, sexual abuse and awareness of students use of substance were the factors associated with substance use among senior high school students in Kwahu East District.

Friends' substance use was the most significant (p=0.002) factors associated with substance use in the study with nearly 3 folds high among students who reported having friends' who used a substance. This was consistent with a study conducted among college students in Kenya which revealed that peer pressure is the most influential factor associated with substance use among students (Peltzer et al., 2011). A study conducted by Birhanu et al contradict this study. They found out that having a sibling as the strongest risk factor of use of a substance (Birhanu et al., 2014). This implies that peer pressure has a great influence on behavior of the adolescents.

On the other hand, adolescents who reported that their parents are always aware of their where about and monitor their activities were at 84% reduced risk of using a substance. This is consistent with a study conducted by Hilton et al which also revealed that parental monitoring has a reduced risk of substance use among adolescents. The same study show that adolescents who perceived less parental monitoring from parents are more likely to report current drinking and marijuana use than adolescents who perceived more parental monitoring (Hilton et al., 2011). Similarly, a study conducted by (Crosnoe et al., 2002) was also consistent with this current study which indicated that adolescents receiving parental support and encouragement have been noted to protect the adolescents against use of psychoactive substances.

Student respondents who reported being aware of students who use substance were almost 3 times more likely to use substance than those who were not aware of students use of a substance. this was in accordance with a study conducted by Birhanu et al, which revealed that substance

use by colleagues was a risk factor of substance use which was 2 times higher than those who do not know the history of substance use by their colleagues (Birhanu et al., 2014). This implies that most students have access to substances whiles in school, hence improvement in supervising students by teachers should be a key priority in the education sector.

From the multivariate logistic regression, adolescents who were physically abused was significantly associated (p=0.033) with substance use and 5 times more likely to use substance than students respondents who were not physically abused while students respondents who were sexually abused were also significantly associated (p= 0.027) with substance use and 2 times more likely to use substance than those who did not experience sexual abuse. This was confirmed with a study conducted by Liddle et al where adolescents who experience maltreatment or physical or sexually abused were at higher risk of substance use (Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008) while Hyucksun et al also added that adolescents who are mistreated and neglected, may also lead to a drinking problem (Hyucksun, Edwards, & Heeren, 2009). These findings show that young people who experience abused go through psychological trauma which influence their use of a substance. Therefore, there is the need for family and community support in resolving issues resolving this issues rather than neglect.

5.5. Limitation

Firstly, the only single- sex school in the district was not purposively selected as part of the study and this has affected the gender dimension of substance use in the district. However, I will recommend for further studies into the single- sex school.

The data was based on a self-report survey and as a result, participants might not be willing to disclose their use of substances in spite of the confidentiality and anonymity.

5.6. Summary

This chapter discussed the findings in relation to other findings from studies conducted elsewhere in the world. The discussion in this chapter suggests that alcohol was the most common substance use among the students. However, friends' substance use was the highest risk factor and parental monitoring was a protective factor associated with substance use among senior high school students in the Kwahu East District. Hence interventions should be put in place to help to address the high intake of substance in the district.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study revealed that the prevalence of ever substance use among the high school students in Kwahu East District was 40% among the male students and 27.2% among the female students but there was a reduced gap between alcohol consumption for male and female students.

Alcohol recorded 29.7% as the highest substance used among the students. This is because most of the alcoholic drinks being advertised were seen as a medicinal herb. Generally, initiation of the substance begins at an early age in the various schools in the district.

Academic performance was the strongest predictor for marijuana use with a record of 45.8% whilest self-confidence was the highest predictor for alcohol use recording 46.8%.

Friends use of substances (individual-peer domain) was the highest predictor (AOR= 2.82; 95% CI; 1.46 – 5.45) associated with substance use among senior high school students, followed by student's substance use (school domain), Physical and sexual abuse (community domain). Parental monitoring (family domain) was found to a protective factor associated with the use of a substance.

6.2 Recommendations

From the study findings the following recommendations are made:

- Researchers such as Narcotic Control Board should conduct similar study among the Junior High School and other adolescents in the district.

- In the same way, a similar study should be conducted by the Narcotic Control Board to estimate the prevalence of tramadol use among the adolescents both in school and out of school.
- The Ministry of Education should integrate into the educational curricula information on substance use with special focus on the adverse consequences of the substance from primary to secondary level.
- Multi-dimensional preventive programmes championing anti-substance use attitudes among students, parents, and peers should be implemented in the various schools and within the communities by the Education Ministry, NGOs and other Stakeholders to prevent and reduce substance use patterns among students.
- The government should strengthen the law that ban the selling and consumption of substances.
- The law enforcement agencies such as Police services should give proper orientation to their personnel and sanction those who engage in substance abuse transactions.
- There should be a stiffer penalties in the constitution by Parliament for those that contravene the prohibited drug laws.

REFERENCE

Affinnih. (1999). Pilot Study of the Relationship Between Any Misuse and Violence Among Drug Addicts in Greater Accra, Ghana: The South of Saharan Africa Case. https://doi.org/org/10.1081/JA-200030675

Amoateng, A. Y., Barber, B. K., & Erickson, L. D. (2009). Family predictors of adolescent substance use : the case of high school students in the Cape Metropolitan Family predictors of adolescent substance use : the case of high school students in the Cape Metropolitan Area , Cape Town , South Africa, (October 2014), 37–41. https://doi.org/10.2989/17280580609486612

Authority, N. I. of D. (2005). Drug of Abuse. Retrieved July 25, 2017, from https://www.drugabuse.gov/drugs-abuse/opioids

Authority, N. I. of D. (2015). Hallucinogens and Dissociative Drugs. Retrieved September 9, 2017, from https://www.drugabuse.gov/publications/research-reports/hallucinogens-dissociative-drugs/what-are-hallucinogens

Bae, J., & Rosel, P. (2009). Construction of the Structural Equation Model on Substance Use in Adolescents. *Korean Academy of Nursing*. https://doi.org/10.4040/jkan.2009.39.3.446

Banys, P. (2013). Epidemiology of Adolescent Marijuana Use and Its Impact on Cognition and Education, 1–35.

Bashirian, S., Barati, M., & Fathi, Y. (2014). Prevalence and Factors Associated With Tramadol Abuse Among College Students in West of Iran : An Application of the Theory of Planned Behavior, *1*(1), 10–14. https://doi.org/10.17795/ajnpp-20314

Bassiony, M. M., Bassiony, M. M., El-deen, G. M. S., & Yousef, U. (2015). Adolescent tramadol use and abuse in Egypt, *2990*(January 2016). https://doi.org/10.3109/00952990.2015.1014959

Birhanu, A. M., Bisetegn, T. A., & Woldeyohannes, S. M. (2014). High prevalence of substance use and associated factors among high school adolescents in Woreta Town, Northwest Ethiopia: multi-domain factor analysis. *BMC Public Health*, *14*, 1186. https://doi.org/10.1186/1471-2458-14-1186

Chen, K., Yeager, A., Alpa, S. J., & Deborah, E. K. (2004). Prevalence and Correlates of past-year substance use, abuse, and dependance in Suburban community sample of high-school students. *Addictive Behaviors*, *29*(2), 413–423. https://doi.org/org/10.1016/j.addbeh.2003.08.013

Crime, U. N. O. on D. and. (2014). *World Drug Report 2014*. *United Nations publication*. Vienna. https://doi.org/10.1007/s12117-997-1166-0

Crime, U. N. O. on D. and. (2015). *World Drug Report 2015*. *United Nations publication* (Vol. 53). Vienna. https://doi.org/10.1017/CBO9781107415324.004

Crosnoe, R., Erickson, K. G., & DornBusch, M. S. (2002). Protective functions of family Relationship and School factors on the deviant Behavior of Adolescent Boys and Girls: Reducing the Impact of Risky Friendship, 515–544.

https://doi.org/10.1177/0044118X02033004002

Dennis-antwi, J. (2003). A NATIONAL SURVEY ON PREVALENCE AND SOCIAL CONSEQUENCES OF SUBSTANCE (DRUG) USE AMONG SECOND CYCLE AND OUT OF SCHOOL YOUTH IN GHANA PRINCIPAL INVESTIGATOR :

Dereje, A. & G. (2014). Child & Adolescent Behavior Prevalence and Predictors of Cigarette Smoking among Adolescents of Ethiopia : School Based Cross Sectional Survey, *3*(1), 1–8. https://doi.org/10.4172/2375-4494.1000182

Fischer B et al. (2004). Injection drug use and the hepatitis C virus. Retrieved July 25, 2017, from https://www.ncbi.nlm.nih.gov/pubmed/15273266

Fleming, C. B., Brewer, D. D., Gainey, R. R., Msw, K. P. H., & Catalano, R. F. (2008). Parent Drag Use and Bonding to Parents as Predictors of Substance Use in Children of Substance Abusers, (November 2014), 37–41. https://doi.org/10.1300/J029v06n04

Genovese, J. E. C., & Wallace, D. (2010). The Journal of Genetic Psychology : Research and Theory on Human Development Reward Sensitivity and Substance Abuse in Middle School and High School Students Reward Sensitivity and Substance Abuse in Middle School and High School Students, (October 2014), 37–41. https://doi.org/10.3200/GNTP.168.4.465-469

Ghana Demographic Health and Survey. (2008). *Ghana*. Maryland. Retrieved from www.DHSprogram.com

Ghana Demographic Health and Survey. (2014a). *Ghana*. Maryland. Retrieved from www.DHSprogram.com

Ghana Demographic Health and Survey. (2014b). *Global status report on alcohol and health*. Maryland. Retrieved from www.DHSprogram.com

Ghanaweb. (2016). Ghana is 3rd consumer of marijuana globally - Report. Retrieved July 22, 2017, from https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-is-3rd-consumer-of-marijuana-globally-Report-451744

Gil, A. G., Wagner, E. F., & Tubman, J. G. (2004). Associations Between Early-Adolescent Substance Use and Subsequent Young-Adult Substance Use Disorders and Psychiatric Disorders Among a Multiethnic Male Sample in South Florida, *94*(9), 1603–1609.

Hamilton F, S., & Crouter C, A. (1980). Work and growth: A review of research on the impact of work experience on adolescent development. *Journal of Youth and Adolescence*, 323–338. https://doi.org/10.1007/BF02087984

Hilton, C. N., Alan, Michael, R., Bollinger, L. C., Burns, U. M., Chenault, K. I., Dolan, P. R., … Ph, D. (2011). Adolescent Substance Use :, (June).

Hyucksun, S., Edwards, E. M., & Heeren, T. (2009). Addictive Behaviors Child abuse and neglect : Relations to adolescent binge drinking in the national longitudinal study of Adolescent Health (AddHealth) Study. *Addictive Behaviors*, *34*(3), 277–280. https://doi.org/10.1016/j.addbeh.2008.10.023

Jackson, K. L., Waller, J., & Ph, D. (1999). Association Between Employment and Substance

Abuse Behaviors Among Public High School Adolescents, (4), 256–263.

Johnson, G., & Chamberlain, C. (2008). Homelessness and Substance Abuse : Which Comes First ?, (773281958). https://doi.org/10.1080/03124070802428191

Jürgen Rehm, P. D. (2010). The Risks Associated With Alcohol Use and Alcoholism. Retrieved July 20, 2017, from https://pubs.niaaa.nih.gov/publications/arh342/135-143.htm

Kafka, & London. (1991). Communication in relationships and adolescent substance use: the influence of parents and friends. *Adolescence*, 587–98. Retrieved from www.researchgate.net/ publication/21192548

Kerr, M., & Stattin, H. (2015). What Parents Know , How They Know It , and Several Forms of Adolescent Adjustment : Further Support for a Reinterpretation of Monitoring What Parents Know , How They Know It , and Several Forms of Adolescent Adjustment : Further Support for a Reinterpretation of Monitoring, (February). https://doi.org/10.1037//0012-1649.36.3.366

Kushner G, M., Abram B, K., & Carrier, B. (2000). The relationship between anxiety disorders and alcohol use disorders: A review of major perspectives and findings. *Clinical Psychology Review*, 149–171. https://doi.org/10.1016/S0272-7358(99)00027-6

Lewis, S., Mcneill, A., Gilmore, A., & Britton, J. (2009). Smoking uptake and prevalence in Ghana, 365–370. https://doi.org/10.1136/tc.2009.030635

Liddle, H. A., Dakof, G. A., Turner, R. M., Henderson, C. E., & Greenbaum, P. E. (2008). Treating adolescent drug abuse : a randomized trial comparing multidimensional family therapy and cognitive behavior therapy, 1660–1670. https://doi.org/10.1111/j.1360-0443.2008.02274.x

Mangerud, W. L., Bjerkeset, O., Holmen, T. L., Lydersen, S., & Indredavik, M. S. (2014). Smoking, alcohol consumption, and drug use among adolescents with psychiatric disorders compared with a population based sample. *Journal of Adolescence*, *37*(7), 1189–1199. https://doi.org/10.1016/j.adolescence.2014.08.007

Marmorstein, N. R., White, H. R., Loeber, R., & Stouthamer-loeber, M. (2010). Anxiety as a Predictor of Age at First Use of Substances and Progression to Substance Use Problems Among Boys, 211–224. https://doi.org/10.1007/s10802-009-9360-y

Nkyi, A. (2014). Substance Abuse among Senior High School Students in Ghana, *4*(2).

Otieno, A., & Ofulla. (2009). DRUG ABUSE IN KISUMU TOWN WESTERN KENYA Otieno AO 1 * and AVO Ofulla 1, *9*(3), 846–858.

Peacefmonline.com. (2014). No Title50,000 People Abuse Drugs In Ghana Resulting In 70% Mad Cases. Retrieved July 21, 2017, from http://www.peacefmonline.com/pages/local/social/201411/222894.php

Peltzer, K., Phaswana, N., Malaka, D., Kinoti, K. C., Ogot, E. M., & Temmerman, M. (2011). Prevalence of substance use among college students in Eldoret, western Kenya. *BMC Psychiatry 2011 11:1*, *36*(Suppl), 447–462. https://doi.org/10.1081/ja-100102636

Rudatsikira, E., Maposa, D., Mukandavire, Z., Muula, A., & Siziyater, S. (2009). Prevalence and Predictors of illicit drug use among school-going adolescents in Harare, Zimbabwe. https://doi.org/10.4103/1596.3519.59574

Rugendo, M. M. (2016). Assessing Substance Abuse Among Secondary School Students in Kendu Zone , Homabay County , Kenya, *24*, 73–81.

Ryan, L. G., Miller-loessi, K., & Nieri, T. (2007). RELATIONSHIPS WITH ADULTS AS PREDICTORS OF SUBSTANCE USE , GANG INVOLVEMENT , AND THREATS TO SAFETY AMONG DISADVANTAGED URBAN HIGH-SCHOOL ADOLESCENTS, *35*(8), 1053–1071. https://doi.org/10.1002/jcop.20211

SAMHSA. (2009). *Results from the 2009 National Survey on Drug Use and Health : Volume I . Summary of National Findings* (Vol. I). Rickvilla. Retrieved from www.oas.samhsa.gov

SAMHSA. (2016). Results from the 2015 National Survey on Drug Use and Health : Detailed tables prevalence estimates. *2015 National Survey on Drug Use and Health*, 209. Retrieved from http://www.samhsa.gov/data/population-data-nsduh/reports?tab=38

Steitz, J. A., & Owen, T. P. (1992). School activities and work: Effects on adolescent self-esteem, 37–50.

Volkow, N. D. (2011). Marijuana Abuse.

Volkow, N. D. (2017). Marijuana. Retrieved September 9, 2017, from https://www.drugabuse.gov/publications/research-reports/marijuana/letter-director

World Health Organisation. (2011). Global status report on alcohol and health.

World Health Organisation. (2015). WHO's role, mandate and activities to counter the world drug problem: A public health perspective. *Substance Abuse*, 16. https://doi.org/10.1006/taap.1993.1141

World Health Organisation. (2017). *Pre-Review Report*. Geneva. Retrieved from www.who.int

World Health Organization. (2014a). *country profiles*. Retrieved from www.who.int

World Health Organization. (2014b). *Global status report on alcohol and health 2014*. Geneva. Retrieved from www.who.int

World Health Organization. (2016a). Public health dimension of the world drug problem including in the context of the Special Session of the United Nations General Assembly on the World Drug Problem, *8*(8), 7. Retrieved from http://apps.who.int/gb/ebwha/pdf_files/EB138/B138_11-en.pdf?ua=1

World Health Organization. (2016b). *The health and Social Effects of Nonmedical Cannabis Use*. Geneva. Retrieved from www.who.int/about/licensing/copyright_form/en/index.html

World Health Organization. (2017). *Monitoring tobacco use and prevention policies*. Geneva. Retrieved from www.who.int

World Health Organization. (2018). Management of substance abuse. Retrieved December 11, 2018, from https://www.who.int/substance_abuse/en/

APPENDICES

Appendix I: Assent Form for Participants

Introduction and Consent

PROJECT TITLE: Factors Associated With Substance Use Among Adolescents In Senior High Schools In Kwahu East District.

Institutional Affiliation: School of Public Health, College of Health Sciences. University of Ghana, Legon.

Telephone Number: 0208492486

General Information about the study:

This is a research study being undertaken by graduate student of the School of Public Health, University of Ghana, as part of the requirements for the Master of Public Health degree. The purpose of this study is to provide an empirical data on the prevalence of substance use among Senior High School Students in Kwahu East District that will be used as a base line for future researchers. Is to receive information from the students on the most commonly use substance in the schools and this will help stakeholders know the magnitude of mental health issues in the schools. It will provide information on the level of knowledge on the consequence associated with substance use among the student. This will informed policy makers to adopt policies that will address the mental health issues of students in the senior high schools. It is also to gather information on the factors that is associated with substance use among the students.

Procedure

The study will use the self-administered questionnaire method to gathered data. In each selected class, you will be given questionnaire to complete by yourselves. Trained Research Assistants

will be available to guide anyone who may find it difficult to answer any question. The questionnaire will last for 30 minutes.

Benefits/of the study

There are no direct benefit to you but the study will help policy makers to formulate policies on Senior High School Students regarding substance use. The result from the study will also inform stakeholder why some Senior High School Students uses substance and collaboratively with the public health worker find a long lasting intervention to minimize the use. The study will also serve as a baseline for other researchers who would embark on future research in substance use in the district.

Risk of the study

The study is non-invasive and will not involve any physical biological risks. However, it may involve some psychological risk due to the sensitive nature of some of the questions. You are free to skip any questions you are not comfortable answering

Confidentiality

You will not have to write your name on the questionnaire. Every questionnaire will have an ID number, and no name will be linked with the study data sets/material or report. All your responses will be coded and every detail of your information will be made confidential. I and my research assistance will have access to the answers you have provided and not even your teachers. Your questionnaire that have been administered will be kept under lock and key, and only the student researcher and her supervisor will have access to the key.

The data analysis will be done in aggregate and will be kept under lock and key for a minimum of three years after which it will be destroyed per research rules. Thus by signing or thumb printing a written consent form, you are authorizing the confidentiality of data collected.

Compensation

You will be given a pen and a pencil for taken part in the study. Package will be available before the commencement of the study.

Withdrawal from Study

Your participation in this study is voluntary, and you may withdraw at any time without any penalty. In addition, you are at liberty to skip any question you feel uncomfortable answering. You will not be adversely affected if you decline to participate or later stop participating.

Contact for Additional Information

In case of answers to any questions about the research, you can contact the Student Investigator

Vera Kwofie

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Phone Number +233 0244236598

If you have any issues on your rights as a participant you can contact the address below:

Administrator, Ethics Committee for Basic and Applied Sciences
College of Basic and Applied Sciences
University of Ghana
P. O. Box LG 68
Legon – Accra
Tel: + 233 277493259
Email: ekacquaah@ug.edu.gh

Before taking the Consent

Do you have any concerns about this study that you wish could be addressed?

Yes ☐

No ☐

If yes, please indicate your consent below.

I understand what the research is about and what I am asked to do if I decide I want to take part in the study. I know that I can ask any question that I have at any time. I understand that I can stop participating at any time that I want.

Participant Name: ……

Participants Signature: …….. Date: ……..

Appendix II: Consent Form for Parents

Research title: Factors Associated with Substance Use among Senior High School Students in Kwahu East District

Your child is invited to participate in a research being conducted by Vera Kwofie a Student in Masters of Public Health, School of Public Health, University of Ghana and her assistants' investigators. The purpose of the research is to study the factors associated with substance use among Senior High School Students in Kwahu East District. He/she will be asked some questions regarding type of substance use, factors associated with substance use and consequences of substance use.

The study is non-invasive and a very low risk is expected in the form of discomfort. Some of the questions are sensitive and your child may experience discomfort in answering those questions in the study since the study is a sensitive one. The benefits of the research is to inform policy makers to adopt policies that will be relevant to the Students in terms of their mental and psychological health.

The questions will last for thirty (30) minutes. The participation of your ward is not compulsory as he/she may decide to withdraw anytime she feels like. If he/she agrees to participate, he/she can withdraw from the study at any time. Everything will be done to ensure that your ward identity is protected as information gathered will be secured in a locking system to prevent any other access to the secured document. All completed questionnaire will be coded with a subject number such as SB/001. Any other materials containing your wards name (e.g., consent forms) will be put in a secured locking system. After the study all documents linking your child's name to a particular subject of interest will be destroyed. His/her identity will not be revealed in any

publication that may result from this study. The study is not meant to diagnose your child as a drug user.

If you have any questions please ask the interviewer**.** You can also contact the Student Investigator, **Vera Kwofie, on 0208492486 or her Supervisor, Dr. Abubakar Manu on 0244236598 for further information.**

Declaration by parent/guardian

I have read this consent form and know that I may ask questions now and any time. I have also be given a copy of the consent form for my records. I consent for my child to participate in the research described above.

Name of Parent/ Guardian: ……..

Parents Signature: …… Date……

Interviewer's Statement

I, the undersigned, have explained this consent to the participant in English/ Twi and ensured that she understands the purpose of this study, procedures to be followed as well as the risks and benefits of this study.

The participant has agreed to actively and fully participate in this study.

Name of Research Assistant……

Signature ……...

Date ……

Address ……..

If you have any questions you may contact Vera Kwofie on 0208492486/0549369984

Appendix III: Student Questionnaire

University of Ghana School of Public Health

Project Title: Factors Associated with Substance Use among Senior High School Students in Kwahu East District

STUDENTS QUESTIONNAIRE

Respondent's ID ☐☐☐	Name of Research Assistant:_____
Date of interview: (dd/mm/yy) __/__/__	Name of Supervisor: _____
District _____	District Code ☐☐☐

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SECTION A: DEMOGRAPHIC AND BACKGROUND INFORMATION

Please circle the number corresponding to the appropriate answer for each question

| NO. | QUESTION | CODING CATEGORY |
|---|---|---|
| A1 | What is your age at your last birthday | [ ] [ ] |
| A2 | What is your sex? | Male 1<br>Female 2 |
| A3 | Which form are you? | Form 1 1<br>Form 2 2<br>Form 3 3 |
| A4 | Which religion do you belong to | Christianity 1<br>Muslim 2<br>Traditionalist 3<br>None 4 |
| A5 | Student status | Day Student 1<br>Boarder 2 |
| A6 | What is your fathers' occupation | |
| A7 | What is your mothers' occupation | |
```

A8	How is your academic performance compared to your classmate?	Poor 1 Fair 2 Good 3 Very Good 4 Excellent 5

SECTION B

TYPES OF SUBSTANCE USE AND IT PREVALENCE

Please tick your answer in the boxes provided whether you have ever heard or used any of the following substances. If you have ever used any of the substances, please write the age at first use.

B1

	Name of Substance	Ever heard?		Ever Used?		Age at first use of substance
		Yes	No	Yes	No	Write age
1	Cigarette /Tobacco					
2	Alcohol					
3	Marijuana (wee)					
4	Amphetamine (ice or yellow)					
5	Halogens					
6	Other ……					

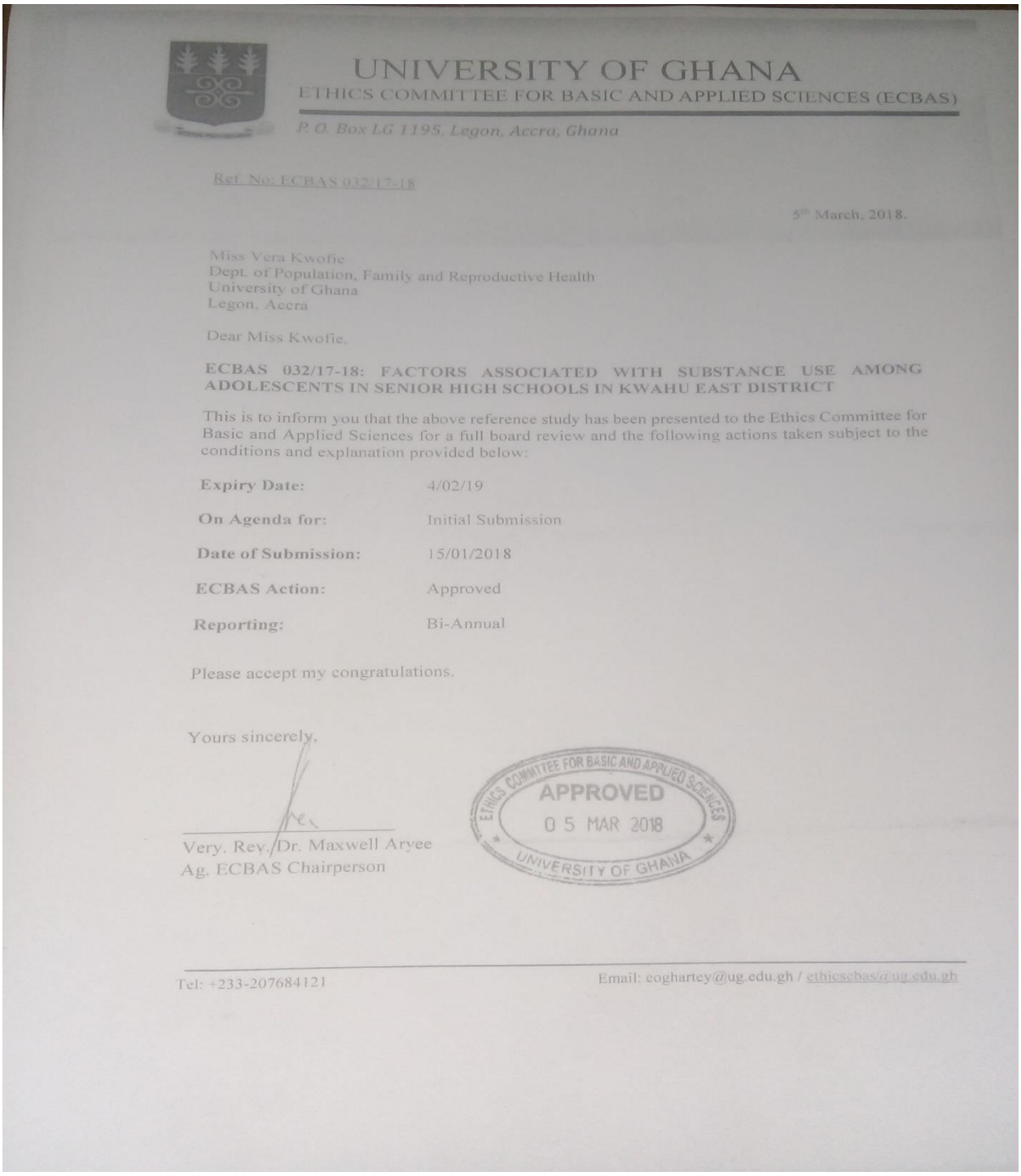
B2	During the past 30 days, on how many days did you have drink containing alcohol?	None 1 1-9 days 2 10-19 days 3 20-30 days 4
B3	During the past 30 days, on how many days did you use any tobacco products other than cigarettes, such as tawa snuff powder, chewing tobacco, paper rolled tobacco, dip, cigars, shisha or pipe?	None 1 1-9 days 2 10-19 days 3 20-30 days 4
B4	During your life, how many times have you used marijuana (also called wee, Jah, indian hemp, ahabammono, and ganja)? 1-9 times 2) 10- 19 times 3) 20 or more times	None 1 1-9 times 2 10- 19 times 3 20 or more times 4
B5	During your life, how many times have you used amphetamines or methamphetamines (also called ice or yellow)?	None 1 1-9 times 2 10-19 time 3 20 or more 4

B6	During the past 30 days, how did you usually get that substance?	I did not use substance 1 I bought it 2 I got it from my friends 3 I got it from my family 4 I stole it or got it without permission 5
B7	Where were you the last time you had any of those substance? 1) at home 2) at school 3)at someone else house 4) at the bar/ club	At home 1 At school 2 At someone else house 3 At the bar/ club 4
B8	During your life, how many times have you used alcohol drink?	None 1 1 to 9 times 2 10 to 19 times 3 20 or more times 4
B9	During your life, how many times have you used tramadol?	None 1 1 to 9 times 2 10 to 19 times 3 20 or more times 4
B10	During your life, how many times have you used halogens?	None 1 1 to 9 times 2 10 to 19 times 3 20 or more times 4
C	**SECTION C** FAMILY AND FRIEND CHARACTERISTICS	

C1	Apart from your parent, do any close relative (sibling, uncle, aunties, grandparents, etc.) use any of the above substance?	Yes 1 No 2
C2	Which of your family members use any of the substance mentioned above?	Sibling 1 Aunty 2 Uncle 3 Grandparents 4 Others (specify)……. 5
C3	Do you have a friend(s) use any form of substance mentioned above?	Yes 1 No 2
C4	Who first introduce you to substance use?	Sibling 1 Uncle 2 Aunty 3 Friends 4 Others (specify)….. 5
C5	Do you know any student in this school who use substance(s)? 1) Yes 2) No	Yes 1 No 2
C6	In your opinion, why do students smoke cigarette/tobacco? 1) Self-esteem 2) Self- confidence 3) Self- acceptance 4) Academic achievement	Self-esteem 1 Self- confidence 2 Self- acceptance 3 Academic achievement 4
D	SECTION D PARENTAL MONITORING	
D1	Whom do you live with?	Both parents 1 Mother 2 Father 3 Grandparents 4 Other family member 5 Others (specify) 6
D2	How long have you been living continuously with your parent(s)?	Years 1 Always 2
D3	How close are you to your parents?	Not close 1 Somewhat 2 Very close 3
D4	How often do your parent(s)/ guardians know your	Never 1 Occasionally 2

	where about?	Sometimes 3 Most of the time 4 Always 5
D5	How will rate your mother's attitude towards substance use?	Strongly disapprove 1 Disapprove 2 Don't know/ not sure 3 Approve 4 Strongly approve 5
D6	How will rate your father's attitude towards substance use?	Strongly disapprove 1 Disapprove 2 Don't know/ not sure 3 Approve 4 Strongly approve 5
E	**SECTION E** **Physically and Sexually Abuse**	
E1	During the last 12 months, how many times were you physically abuse by parents or family members?	None 1 1 time 2 2 or 3 times 3 4 or 5 times 4 6 or more times 5
E2	Have you ever had sexual intercourse?	Yes 1 No 2
E3	Have you ever been forced to have sexual intercourse when you did not want to?	Yes 1 No 2

Appendix iv: Ethical Approval Letter



UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR BASIC AND APPLIED SCIENCES (ECBAS)
P. O. Box LG 1195, Legon, Accra, Ghana

Ref. No: ECBAS 032/17-18

5th March, 2018.

Miss Vera Kwofie
Dept. of Population, Family and Reproductive Health
University of Ghana
Legon, Accra

Dear Miss Kwofie,

ECBAS 032/17-18: FACTORS ASSOCIATED WITH SUBSTANCE USE AMONG ADOLESCENTS IN SENIOR HIGH SCHOOLS IN KWAHU EAST DISTRICT

This is to inform you that the above reference study has been presented to the Ethics Committee for Basic and Applied Sciences for a full board review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date:	4/02/19
On Agenda for:	Initial Submission
Date of Submission:	15/01/2018
ECBAS Action:	Approved
Reporting:	Bi-Annual

Please accept my congratulations.

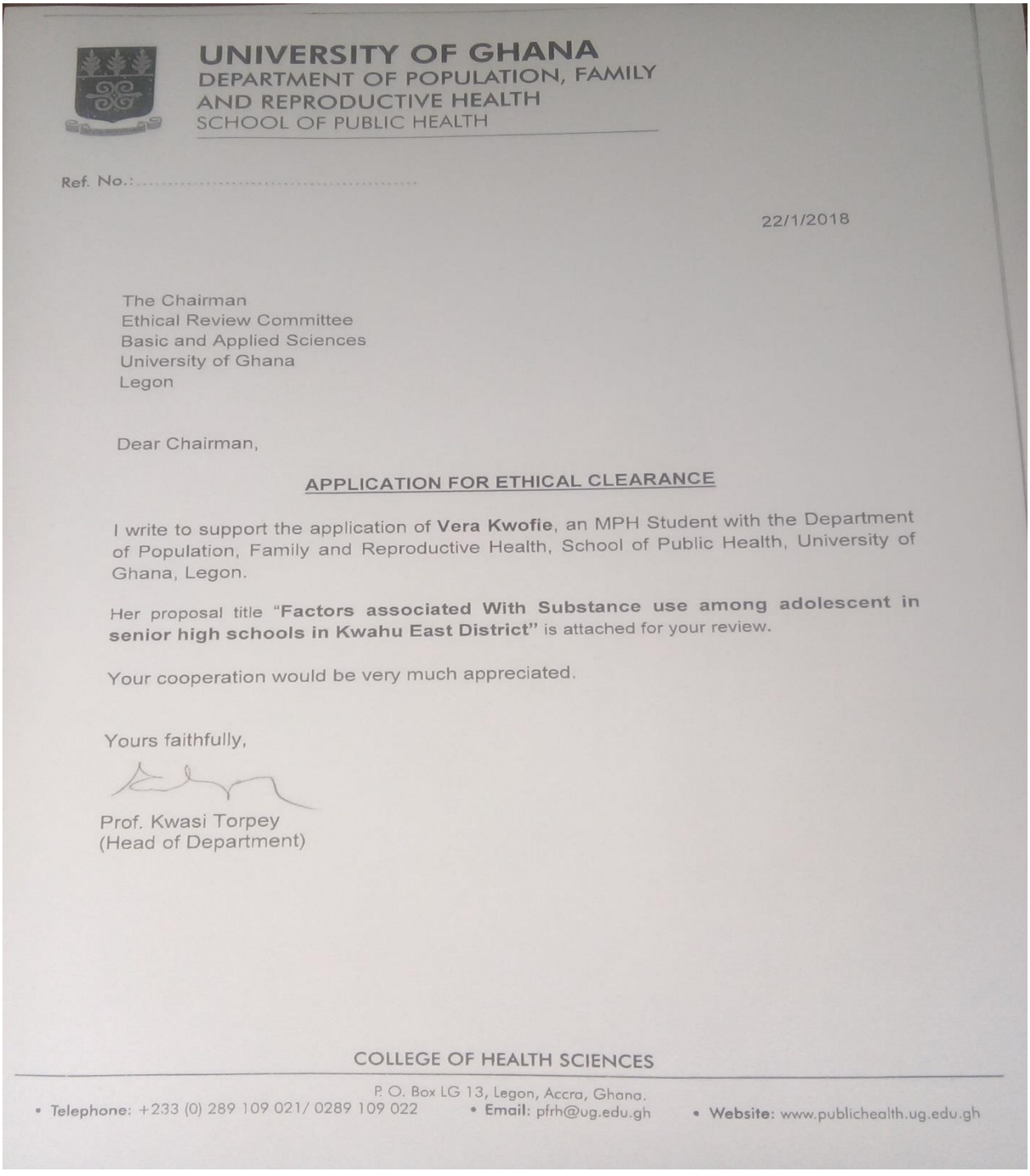
Yours sincerely,

Very. Rev. Dr. Maxwell Aryee
Ag. ECBAS Chairperson

ETHICS COMMITTEE FOR BASIC AND APPLIED SCIENCES
APPROVED
05 MAR 2018
UNIVERSITY OF GHANA

Tel: +233-207684121 Email: coghartey@ug.edu.gh / ethicsebas@ug.edu.gh

Appendix v: Application Letter for Ethical Clearance



UNIVERSITY OF GHANA
DEPARTMENT OF POPULATION, FAMILY AND REPRODUCTIVE HEALTH
SCHOOL OF PUBLIC HEALTH

Ref. No.:.....

22/1/2018

The Chairman
Ethical Review Committee
Basic and Applied Sciences
University of Ghana
Legon

Dear Chairman,

APPLICATION FOR ETHICAL CLEARANCE

I write to support the application of **Vera Kwofie**, an MPH Student with the Department of Population, Family and Reproductive Health, School of Public Health, University of Ghana, Legon.

Her proposal title **"Factors associated With Substance use among adolescent in senior high schools in Kwahu East District"** is attached for your review.

Your cooperation would be very much appreciated.

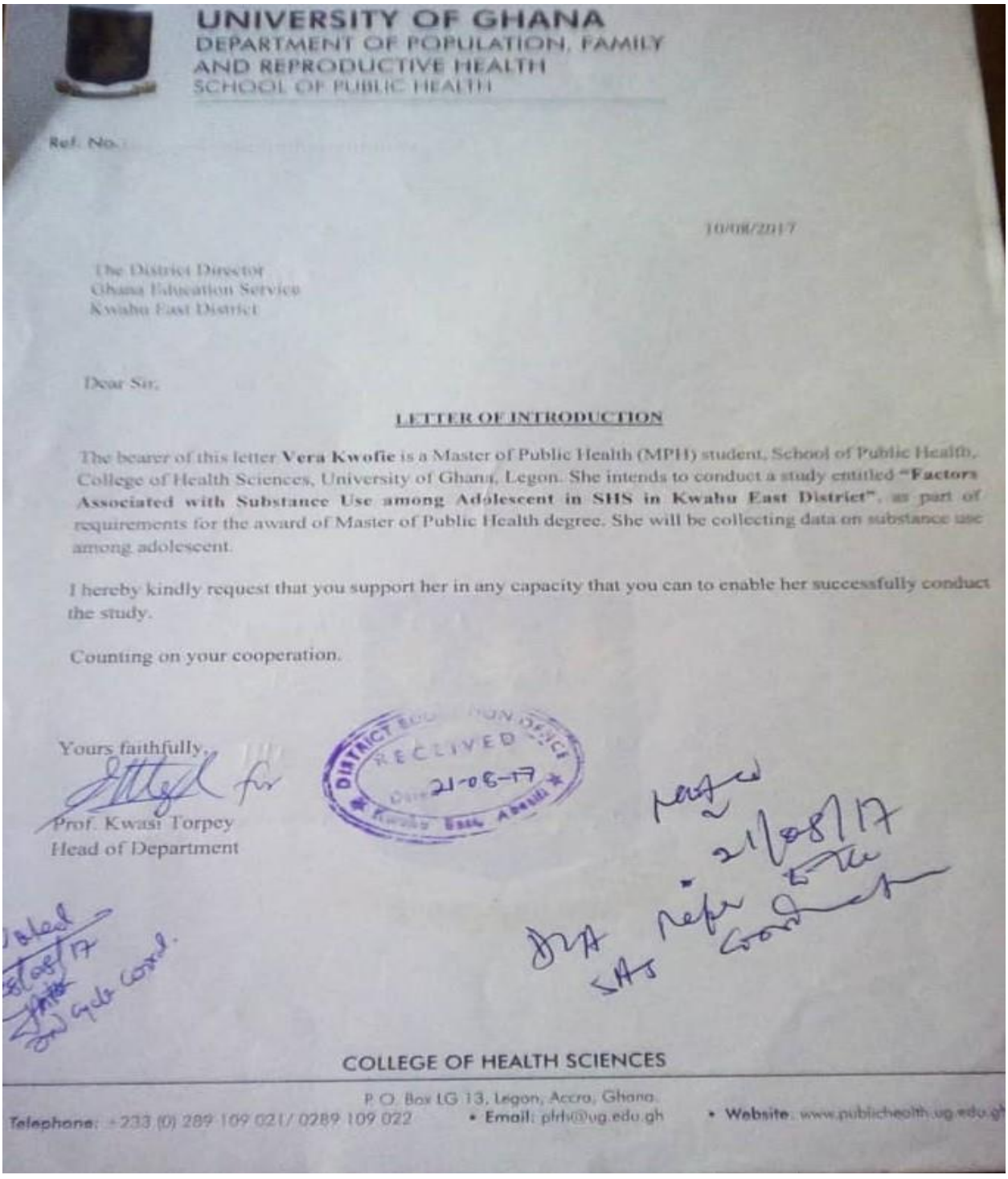
Yours faithfully,

Prof. Kwasi Torpey
(Head of Department)

COLLEGE OF HEALTH SCIENCES

P. O. Box LG 13, Legon, Accra, Ghana.
• **Telephone:** +233 (0) 289 109 021/ 0289 109 022 • **Email:** pfrh@ug.edu.gh • **Website:** www.publichealth.ug.edu.gh

Appendix vi: Letter of Introduction



UNIVERSITY OF GHANA
DEPARTMENT OF POPULATION, FAMILY AND REPRODUCTIVE HEALTH
SCHOOL OF PUBLIC HEALTH

Ref. No.:

10/08/2017

The District Director
Ghana Education Service
Kwahu East District

Dear Sir,

LETTER OF INTRODUCTION

The bearer of this letter **Vera Kwofie** is a Master of Public Health (MPH) student, School of Public Health, College of Health Sciences, University of Ghana, Legon. She intends to conduct a study entitled **"Factors Associated with Substance Use among Adolescent in SHS in Kwahu East District"**, as part of requirements for the award of Master of Public Health degree. She will be collecting data on substance use among adolescent.

I hereby kindly request that you support her in any capacity that you can to enable her successfully conduct the study.

Counting on your cooperation.

Yours faithfully,

Prof. Kwasi Torpey
Head of Department

DISTRICT EDUCATION OFFICE RECEIVED Date 21-08-17 Kwahu East Abetifi

COLLEGE OF HEALTH SCIENCES

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