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PREVALENCE AND DETERMINING FACTORS OF TOBACCO AND ALCOHOL USE AMONG STUDENTS IN SOME SELECTED SENIOR HIGH SCHOOLS IN THE TAMALE METROPOLIS

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PREVALENCE AND DETERMINING FACTORS OF TOBACCO AND ALCOHOL USE AMONG STUDENTS IN SOME SELECTED SENIOR HIGH SCHOOLS IN THE TAMALE METROPOLIS

BY

ABDUL-KARIM HUZEMATU

UDS/MPH/0001/17

A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH AND FAMILY MEDICINE, SCHOOL OF MEDICINE AND HEALTH SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE

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DECLARATION

I hereby declare that this thesis except for references to other people's study, which have been appropriately recognized, it is the result of my own research work carried out in the Department of Community Health and Family Medicine, supervised by Dr. Benson B. Konlaan and Dr. Baba Sulemana Mohammed.

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ABDUL-KARIM HUZEMATU

(UDS/MPH/0001/17)

DR. BENSON B. KONLAAN SIGNATURE: DATE:

DR. BABA SULEMANA MOHAMMED SIGNATURE: DATE:

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DEDICATION

To Almighty God who gave me the strength and the ability to complete this attachment successfully. Bishop Samuel Aziz Danladi of Converted Christian's Ministry International.

Also to my father Hon. Alhaji Amadu Abdul-Karim, my mom Madam Zenabu Juliet Abdulai, my siblings Sualihu, Deen, Kash, Olu, Sherifa, and my lovely son Abdul-Haq Umar Yaro Jnr.

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ABSTRACT

The study investigated the prevalence and factors that account for substance abuse - tobacco and alcohol usage - among students in the Tamale metropolis. The aim of this study was to determine the prevalence of tobacco and alcohol use in some selected senior high schools in the Tamale Metropolis. A descriptive cross-sectional study was carried out between September, 2018 and July, 2019 in four selected senior high schools namely; Ghana Senior High (Ghanasco), Business Secondary School (Bisco), Vitting Senior High School, and Anbayira Senior High School. Factors that determine tobacco and alcohol use were assessed using the Chi-square test for associations. A p-values less than 0.05 were considered as statistically significant.The prevalence of alcohol and tobacco consumption among the students were 29.8% (119/400) and 24.75% (99/400) respectively and most prevalent among males with 63.9 % (76/119) and 74.75 % (74/99) for alcohol and tobacco consumption respectively. There were significant associations between alcohol and tobacco consumption, and peer pressure, advertisement, social media, parental/sibling influence and availability/accessibility to alcohol. There is a substantial level of alcohol and tobacco use among students of senior high schools in Tamale. Sex and peer pressure are predictors of use of both alcohol and tobacco. Generally, alcohol and tobacco still remains a major public health concern and needs urgent measures to prevent it use among students and adolescents.

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ABBREVIATIONS

BISCO	Business Senior High
DSM-IV,	Diagnostic and Statistical Manual of Mental Disorders -IV
GDHS,	Ghana Demographic and Health Survey
GHANASCO,	Ghana Senior High
GYTS,	Global Youth Tobacco Survey
HIV,	Human Immune Deficiency Virus
SHS,	Senior High School
TPB,	Theory of Planned Behavior
WHO,	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1. Study background

The use of substances and its abuse has come to be a worldwide phenomenon affecting nearly all countries, with country-wide variations in the prevalence and characteristics. Dennis-Antwi et al. (2003) maintained that the most frequently consumed and abused substances by the youth in recent times included cigarettes and alcohol. Tobacco and Alcohol usage among adolescent have become an important public health worry (Doku, et al, 2010)). The consumption of tobacco and alcohol have been linked to several diseases with severe and long-lasting adversarial health concerns including cancers, psychiatric conditions, cardiovascular diseases, liver damage combined with intentional and unintentional injuries (Kabiru et al, 2010; Toustad et al., 2006).

A substance is a compound that modifies a person‘s disposition or behaviour when it is administered either through smoking, injection, drinking/ingestion, inhaling, or swallowed in tablet form (Halgin et al., 2000). Similarly, a substance may also be referred to as a drug of abuse, a medication or a toxin (Diagnostic and Statistical Manual of Mental Disorders fourth edition, DSM-IV, 2000). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), substances can be classified into eleven (11) and they comprise of drugs like, “alcohol; amphetamines; caffeine; cannabis; cocaine; hallucinogens; inhalants; nicotine; opioids; phencyclidine; and sedatives, hypnotics or anxiolytics”. With the exception of substances like tobacco, caffeine, tramadol and alcohol, these substances are largely considered as illicit drugs (Bauman et al., (1999).

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In sub-Saharan African countries, the proportions of smoking amongst adolescents ranges from 1.4% in Zimbabwe and 1.5% in Nigeria to 34.4% in Cape Town, South Africa, which is a reason for worry (Brathwaite et al., 2015). Again, in Kenya, 7.2% of students in the lower levels of education smoke cigarettes whereas about 8.5% use other products of tobacco (Global Youth Tobacco Survey (GYTS) 2001; Odukoya et al., 2013)). Ababa et al,. (2007) also stated that the prevalence of smoking amongst Ethiopian youths in the age brackets of 15–25 years in Addis-Ababa was approximately 11.8% and 1.1% among males and females respectively. These statistics are a worrying. The general smoking rates amongst the Ghanaian youths are acknowledged to be relatively low, however smoking rates in males are considered to be higher compared to their female counterparts (Owusu-Dabo et al., 2009). For instance, Owusu-Dabo et al., (2009) acknowledged in a study involving persons from 14 years and above that the proportions of smoking among males and females were 8.9% and 0.3% respectively. Conversely, the GYTS (2006) stated higher proportions of smoking amongst adolescents in the age brackets of 13 and 15. The World Health Organization (WHO, 2006) also published that the proportions of ever used tobacco products" were 11.6% and 10.9% amongst Ghanaian adolescent males and females respectively at the national level. Additionally, the WHO (2006) maintained that about 9.4% adolescent males and 8.0% females reported "ever smoking cigarettes." Additionally, it was documented in the 2016 Ghana Demographic and Health Survey that, the acknowledged prevalence of tobacco smoking in the Ghanaian population was lower than 10% as manifested by the outcomes in several studies carried out amongst older males in Ghana. According to the World Bank's World Development Indicators approximations on male smokers', there has been a consistent reduction in the proportion in Ghana from about 10.8% in the year 2000 to 7.7% in the year 2016 (Nketiah-amponsah et al., 2018). Correspondingly, the proportion of female smokers in Ghana reduced from about 0.9% in the year 2000 to 0.3% in the year 2016 (Nketiah-

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amponsah et al., 2018). However, it must be acknowledged that any level of smoking in the general populace especially among the youthful population is of public health concern for several reasons demonstrated in contemporary studies and it negative externalities including the consequences of secondhand smoking.

Relatedly, in an attempt to estimate the burden of alcohol on the global front, it was acknowledged that annually about 3·3 million mortalities, constituting about 5·9% of all mortalities and with nearly 4·6% of disability- adjusted life years, are attributed to alcohol use ((Rehm et al., 2009). Proportions of alcohol attributable mortalities are twofold amongst males (constituting about 7·6%) when paralleled with females with a proportion of 4% globally (WHO, 2014). The World Health Organization (WHO) reported amid 2003–2005 and 2008–2010 an upsurge of about 36 % in alcohol per capita intake in litres of wholesome alcohol amongst adolescents aged 15 years and above in China. The per capita intake of alcohol consumers' aged 15 and above in the year 2010 was approximately 18.7 L of the wholesome alcohol for males and about 7.6 L of the wholesome alcohol for the female counterparts. It is also mentioned that about 24.3 % of males and 2.5 % of females are mostly involved in heavy episodic alcohol drinking; which is defined "as consuming at least 60 g or more of pure alcohol on at least one occasion in the last 30 days" (WHO, 2014). Contemporary studies have shown that early intake of alcohol has an attendant alcohol misuse in an individual's later life (Hoof et al., 2013). Similarly, alcohol consumption knots with other dangerous behaviours including substance abuse, risky sexual practices, fierceness and violent behavior, attempted suicide, lorry accidents, as well as bad school performance (Hoof et al., 2013; Jawad, Khader, & Millett, 2016).

According to White et al,. (2015) majority of school drop outs in New Zealand were as a result of alcohol and tobacco use amongst students under the age of 16 years. Similarly, another study in New Zealand reported that about 8% of adolescents in the age of 14 to 15

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years were habitual smokers (thus "smoking daily, weekly, or monthly") whereas approximately 23% of the adolescents had been involved in binge alcohol drinking in the previous month (Clark et al., 2013).

Drug use and abuse among adolescents is influenced by the use of one initial substance facilitating as an entryway for another substance, or over a causal susceptibility to substance use in general (White et al., 2015). The Gateway theory has it that the initiation and use of substance charts a chronological array of the use of legal substances (including tobacco and alcohol) which also influences the future risk of use of other illegal substances like marijuana and other related drugs of abuse (Kandel et al., 1992). A 'reverse gateway' consequence also has it that, regular marijuana consumption increases the risk of future tobacco consumption and addiction (Patton et al., 2005). This indicates a mutual underlying susceptibility to the use of substance and associations found amid externalizing behaviour problems and adolescent substance use (Colder et al., 2013; Englund et al., 2012). Additionally, studies have established that associations sandwiched between the use of tobacco and alcohol in adolescence could be predicted by risk exposures such as parental and peer substance use (Lynskey et al., 1998) greater amount of weekly spending money (Leatherdale et al., 2010) and liberal parental rules on alcohol (Harakeh et al., 2012).

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In a systematic study of the prevalence of tobacco smoking in sub-Saharan African, Brathwaite et al., (2015) reported that national prevalence of tobacco smoking in Ghana was approximately 0.2%. Conversely, Mamudu, (2013) mentioned that the prevalence of ever cigarette smokers was approximately 6.7% and 4.4% among males and females respectively as well as 2.4% and 1.4% for current cigarette smokers among males and females among School-Going Adolescents in the age-brackets of 11–17 years in Ghana. The sex aggregate prevalence of smoking exceeds the national prevalence of 0.2% (Brathwaite et al., 2015) and therefore needs urgent attention to resolve the use of tobacco among the youth. This is an

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indication that the youth, often mentioned to as the leaders of tomorrow are the ones gradually being eaten away by this menace and necessitate all hands on the deck to finding a lasting solution.

Addressing tobacco and alcohol consumption among students is of a public health concern as the adverse health and societal harms associated with their use have the potential for the spread of infectious diseases such as Human Immune Virus (HIV). Therefore, addressing tobacco and alcohol use among students is of necessity in Ghana. The theme for 2017 World Drug Day: "Listen First- Listening to children and youth is the first step to help them grow healthy and safe" highlights the importance of understanding the context surrounding substance use and abuse among adolescents and sets the theme for this study.

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1.2. Problem Statement

The implications of tobacco and alcohol consumption among students are legion and may include but not limited to school dropout, health challenges, ostracism, child neglect, poverty, death and to a larger extent, end of the individual's dreams of achieving higher pursuits. Therefore, addressing alcohol and tobacco use and abuse among adolescents is of necessity in Ghana. Currently, the factors that account for use of alcohol and tobacco and abuse among senior high school students in the Tamale Metropolis of Ghana are not well understood. Studies that have attempted to look at alcohol and tobacco use and abuse in Ghana have with the absence of inter-regional comparisons (Antwi, 2003) as well as in the Greater Accra Region (Asante, Meyer-weitz, & Petersen, 2014). This makes targeted interventions to substance use and abuses almost unattainable as generalizations cannot be made looking at the differences in the social and environmental settings across the 16 administrative regions of Ghana.

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Studies have revealed that there is an increasing incidence in the use, and a decreasing age of onset, of these substances ((Fatoye et al., 2006; Fatoye et al., 2002). Most adolescents commence the use of drugs with alcohol and cigarettes and later advance to more dangerous substances such as cannabis and cocaine (Fatoye et el., 2006). Little is known in Ghana, conversely about the prevalence of drug use among adolescents of school-going age and hence the seriousness of the problem is not well appreciated. Nine percent of adolescents reported that they had been drunk in the 12 months preceding the survey. However, contemporary studies including Kabiru et al., (2010), Asante et al., (2014) and Annor (2016) maintained that the consumption of alcohol among the youth was significantly as high as 9%, 12% and 35% respectively.

This study, therefore, provides preliminary data, fill the knowledge gap and expand our understanding of the possible factors that accounts for the high incidence of alcohol and tobacco use and abuse among students in the Tamale Metropolis.

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1.2. Research Objectives

1.2.1. Main objective

The main objective of this research was to determine the prevalence of tobacco and alcohol use in some selected senior high schools in the Tamale Metropolis.

1.2.2 Specific objectives

To achieve the main objective set, the specific objectives were, among students of senior high schools in the Tamale Metropolis:

1. To ascertain the level of tobacco and alcohol use
2. To determine the perception and attitudes towards tobacco and alcohol use
3. To determiner factors that influence the use of tobacco and alcohol

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1.3. Research Questions

1. What is the prevalence of tobacco and alcohol use among senior high school students in the Tamale Metropolis?
2. What is the perception and attitudes towards tobacco and alcohol use?
3. What factors determine the use of tobacco and alcohol among senior high school students?

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1.4 CONCEPTUAL FRAMEWORK

The study employed a conceptual framework (Figure 1), which had the prevalence of tobacco and alcohol use as the main problem, while exposure to environmental tobacco smoke, knowledge on the health effect resulting from use of tobacco and alcohol products, perception and attitude of students towards tobacco and alcohol use, and views of students on school policy on tobacco and alcohol use as the possible driving factors. The health consequences include- Lung cancer, nicotine dependence that could lead to dire consequences, cardio-vascular diseases, among others.

The current study relied on concepts and models that were suitable to appreciate the interrelationships amongst the plausible factors and the use of alcohol and tobacco among the study participants. Such concepts and models have been recommended to encourage effective organization, implementation and evaluation of interventions (Watson, 2002; Margoluis et al., 2009). Contemporary, studies in psychology and social sciences has maintained that substance use, including alcohol consumption, experimentation, and abuse, has effect on the cognitive and behavior of the individual (Coffie, 2010). The current study employed the constructs in the Theory of Planned Behaviour (TPB); which was proposed by Ajzen in the year 1988. The theory offers a model that assesses how human actions are directed. It

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envisages that the action of a specific behaviour is on condition that the behaviour is planned. To elaborate further, TPB is a theory which predicts thoughtful behaviour, for the reason that behaviour can be premeditated and prearranged.

Relatedly, alcohol consumption is grounded solely on an adolescent's resolution to involve him or herself in the substance-specific behaviour. It continues to suggest that human behaviour is driven by intents. In turn, these resolutions are determined by three contributing factors; specifically, a person' attitudes towards a behaviour, the subjective norms, and the perceived behavioural control (Ajzen, 1991). The social intention, a substitute measure for action proposes that a person make mindful decision or assumption to accomplish an act (Conner and Armitaye, 1998). TPB assert that intents are affected by an adolescent attitude concerning their own experimental alcohol use (EAU). This posits that the adolescent perceive an affirmative attitude towards EAU if the anticipated remunerations of alcohol are appreciated more than the anticipated consequences. Similarly, the greater the strength of the intent, the more probable an individual is expected to perform the behaviour. For instance, the socio-economic experience of an individual may have an influence on the behaviour, whether in compliance or unexpected, it is more probable that an individual adapts economically or socially reinforced. Conferring to TPB, attitude towards the behavior discusses the degree to which an individual retains positive or negative outlooks about the behaviour of concern.

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It involves the contemplation of the consequences of performing the intended behaviour. For example, cultural beliefs, which are the systems in which a group of people live and function effectively; may inculcate morals and customs concerning alcohol consumption among adolescents and these may be significant in defining student attitude towards alcohol consumption. Subjective norms are a person's own evaluation of the social confluence to execute the target behaviour. Subjective norms are anticipated to have two mechanisms

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which work in collaboration: conviction about how other individuals, who may be in some way important, would like to behave. In other words, it denotes whether most referents (important or powerful individuals including family associates, clerics, peers and others) supports or objects of their behavior as well as how enthused they are to perform in harmony with their anticipation (Ajzen, 1999). Presuming, adolescents would have a strong pressure to consume alcohol if they accept as true or untrue, that important friends and family associates approve their alcohol consumption. Another example is through the mass media; an adolescent student may watch a celebrity whom he or she may have a high regard for in the mass media publicity of an alcoholic beverage. This student may be encouraged to consume the alcoholic beverage that the celebrity is publicizing. Citing Anderson et al. (2009), experience with alcohol advertising upsurges the chance that an adolescent will start consuming alcohol. Behaviour is mostly guided by self-confidence and esteem (Ajzen, 1991). To conclude, the simple assumption of the model is that, the more positive the attitude, the higher the perceived behavioural control and the more likely it is that a person will perform that behaviour.

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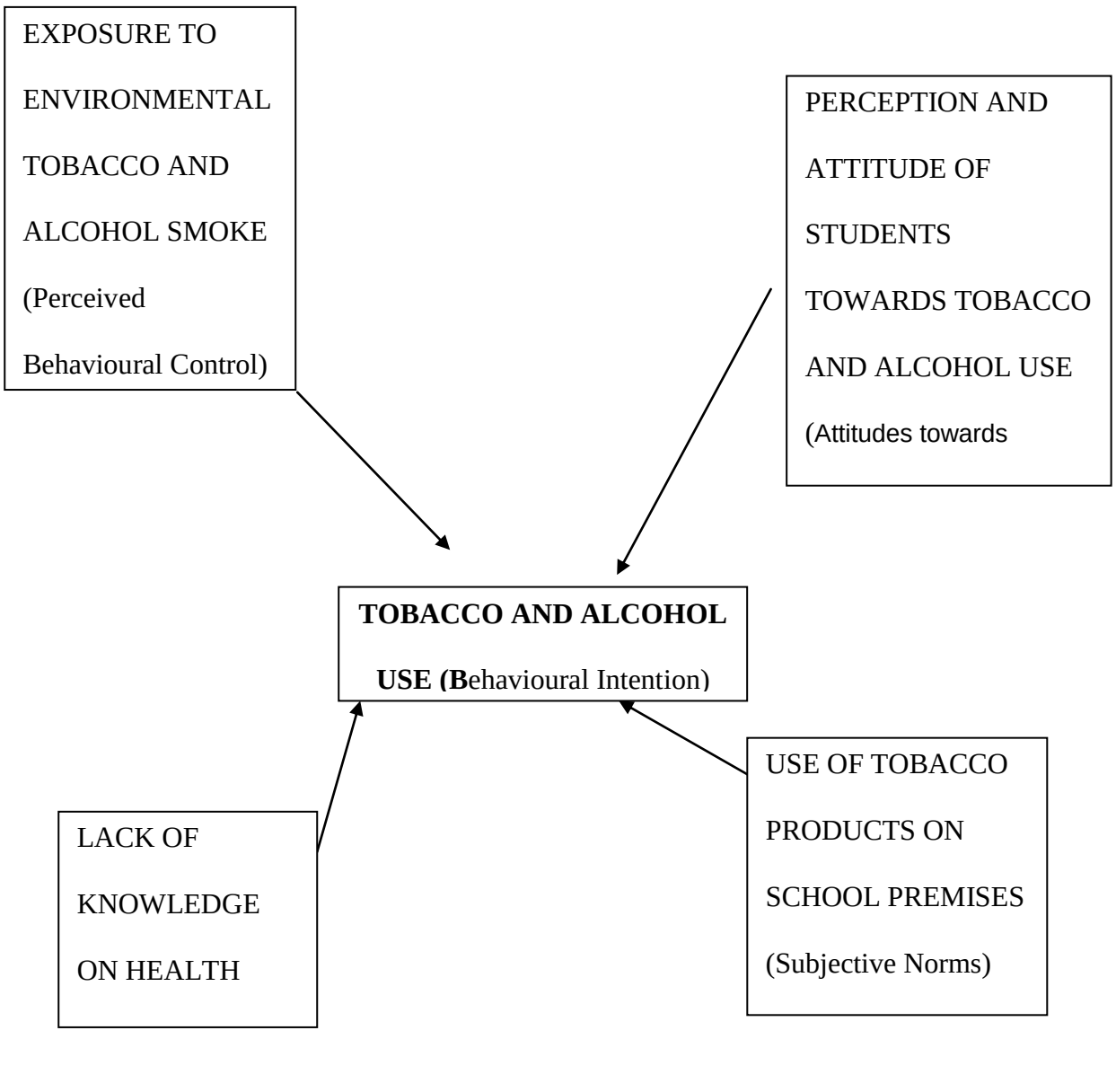

Figure1. Conceptual frame work for the study. Adapted form Ajzen (1991). Theory of Planned Behavior (TPB)

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1.5 Justification of the study

In many countries, people begin smoking and drinking at younger ages with the median age of initiation under 15. Moreover, the prevalence of smoking is frequently very high among adolescents. It is also widely known that tobacco is the most important preventable cause of premature death in many countries. Cigarette smoking is responsible for heart diseases; cancers of the lung, larynx, mouth, esophagus, and bladder; stroke; and chronic obstructive pulmonary disease. Starting to smoke at younger ages increases the risk of death from a smoking related cause, and lowers the age at which death is likely to occur. Young people who start smoking early in life will often find it difficult to quit smoking. Half of persistent smokers who start smoking in adolescence will die from their use of tobacco.

Schools are an ideal setting in which to provide tobacco use prevention education. School based tobacco prevention education programs that focus on skills training have proven effective in reducing the onset of smoking (Ghana Global Youth Tobacco Survey, 2001). School-based health education programs should enable and encourage children and adolescent who have not experimented with tobacco to continue to abstain from any use. For young persons who have experimented with tobacco use, or who are regular tobacco users, school tobacco prevention education programs may enable them to immediately stop all use. Many smokers, including youth, are addicted to nicotine and need assistance to quit.

Recently in tobacco control, there has been an increased demand for cessation programs for the youth. A primary reason for this increased demand is recognition in the community that many youth who are regular tobacco users are interested in quitting and that they frequently try to quit but are unsuccessful.

According to the national institute on alcohol abuse and alcoholism, alcohol can impair memory after only a few drinks and the impairments increases the more a person drinks. Drinking can affect the biological development of young people as well as their school

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related achievement and behavior. Serious alcohol use among youth has significant neurological consequences. Alcohol damages areas of the brain responsible for learning and memory, verbal skills and visual-spatial cognition.

The acquisition of information from the study will afford the Metropolitan Assembly and the Metropolitan health department a first-hand knowledge on the magnitude of the problem, and to further design programs to address the situation. Further, the study will provide data that will provoke further study into the smoking and drinking patterns in the various senior high schools in the metropolis.

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CHAPTER TWO

LITERATURE REVIEW

The chapter two of the thesis reviews the literature for evidence to support the problem and also to provide the basis of the objective set to answer the research question formulated. The evidence is narrated in themes that focus on alcohol and tobacco use and the factors that influence these uses. To this end, literature catalogues such as Scopus, Medline, PubMed and Elsevier were carefully searched for related articles published in English up till 2019.

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2.1 Prevalence of Alcohol and Tobacco Use

The use of alcohol and tobacco and it prevalence varies remarkably, depending on the geographical context (Asante et al., 2014) and other factors including availability, peer influence, religious beliefs, social norms, gender, age, homelessness and social linkages (Nada & Suliman, 2010). Quite a number of literature have acknowledged the use of alcohol and tobacco amongst senior high school students and out of school adolescents both in high income countries and low and middle resourced countries (LMIC) ((Embleton et al., 2013; Asante et al., 2014). The use of tobacco and alcohol constitutes an important public health worries and regarded as a global occurrence affecting almost every nation with varying characteristics and prevalence depending on the nation in question. Scholars illustrate that there is a growing trend in the incidence and an early of age of commencement, of these substances (Fatoye et al., 2002: Fatoye et al., 2006). Research has it that the youth start the use of drugs with alcohol and cigarettes and later advance to the use of more perilous drugs including cannabis and cocaine (Abiodun et al., 1989 cited in Kanyoni et al., 2015). The WHO (2018) reported a disturbing causal correlation between the use of these substances and infectious diseases such as HIV/AIDS and Tuberculosis which are major public health concerns.

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2.1.1 Prevalence of Alcohol Use

On the global front, estimates of alcohol consumption among adolescents in European countries vary remarkably from a percentage of 6 to 23% for weekly alcohol intake (Green et al., 2013; Richter et al., 2006), and from 27 % to 70 % for monthly binge drinking (i.e. drinking large amounts of alcohol in a single occasion (Danielsson et al., 2012). Again, in Australia, the National Drug Strategy Household study predicted that alcohol consumption by age 15 and about 16% of older persons born amid 1940-1944 was more likely to increase. Relatedly, about 56% of the households reported alcohol consumption among those born in 1980-1984 (Degenhardt et al., 2000). In the United State of America (USA), according to Kerr et al., (2009), observations made from a national survey from 1979 to 2005 shows a significant upsurge in the extent to which alcohol is consumed on daily basis with about five and more drinks of alcohol amongst persons aged between 18-25 years. Current literature in China, also suggested a 36 percentage increase in alcohol "per capita" consumption measured in litres of wholesome alcohol amongst adolescents, with ages starting from fifteen (15) years between 2003–2005 and 2008–2010 in China (World Health Organization, 2014; Feng & Newman, 2016). Likewise, it was also observed that the per capita consumption of alcohol aged 15 and above in 2010 was 18.7 L of pure alcohol for males and 7.6 L of pure alcohol for females comparatively(WHO, 2014; Feng et al., 2016). This is suggestive that, male adolescents are more vulnerable in the use of alcohol paralleled with their female counterparts. Feng et al., (2016) submitted in the study that more than a quarter (24.3 %) of the male study participants and about 2.5% of the females study participants were involved in substantial occasional drinking, that is the ingestion of a minimum of about 60 grams (g) and more of wholesome alcohol at least one occasion in the last 30 days (WHO, 2014).

In sub-Saharan African countries, available literature from Rwanda illustrates a substantial use of alcohol amongst adolescents with a prevalence rate of approximately 34% (Kanyoni et

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al., 2015). Related survey in Uganda from 2003 also portrayed that about 14% of male and 12% of female teenagers within the age brackets of 13-15 years correspondingly indicated that they ever consumed considerable quantity of alcohol that got them drunk (Uganda Global School-based Student Health Survey, 2003). Another study piloted among school-going teenagers aged between 11-17 years in Uganda, estimated that approximately 18% of the study respondents (adolescents) said that they had ever consumed alcohol (Rudatsikira et al., 2007). In Nigeria, Fatoye (2003) reported a 13% of current alcohol consumption amongst students in second cycle schools in south-western Nigeria and a 26% of previous alcohol consumption. As indicated in the World Health Survey data in 2003, prevalence of alcohol consumption estimates varied from about 1% in Ghana, 5% in Malawi to approximately 8% in Burkina Faso, amongst adolescents' males within the age brackets of 18-24 years.

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Studies conducted among senior high schools (SHS) in Ghana with a nationwide characteristic sample of "in- and out-of-school" adolescents indicated a 25% prevalence rate of alcohol consumption (Adu-Mireku, 2003). Subsequent studies in Ghana also indicated about 15.3% and 14.6% prevalence of alcohol use among senior high school students who reported consuming two or more drinks/day (Owusu, 2008). Nimako (2012) also reported a 25% prevalence rate of alcohol consumption amongst SHS students in the Kintampo Municipality in the now Bono East Region of Ghana. Comparatively, the prevalence rate was higher in male senior high students (62%) than their female counterparts. This observation made by Nimako is no different from other countries described elsewhere. This is a sharp increase of about10% from Owusu's (2008) study. Dissimilarities in the environmental context, combined with by-laws regulating the use and alcohol sales may account for the differences in consumption patterns. A cross-sectional study amongst 227 street children in Ghana also reported a 12% prevalence rate of alcohol consumption daily with about 70.1 % using alcohol in the previous month to the start of the study (Asante et al., 2014). Again,

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Asante et al., (2014) maintained that about 81.3% of the study participants reported ever using alcoholic beverages (Asante et al., 2014).

Alcohol use among in senior high schools with students who are often adolescents illustrates a solemn public health worry due to the possible acute to protracted consequences that are associated with the use of alcohol in any form including the effect on the wellbeing as well as the safety of the persons involved and other related confrontational societal concerns (WHO, 2018: Woods, 2011). In the United States, one out of every four adolescents within the age brackets of 12 to 20 years at least consumes alcohol on monthly basis (Newes-Adeyi et al., 2007). Similarly, Newes-Adeyi et al., (2007) acknowledged in the study that students in their 12th grades also consumed about five (5) or more drinks of alcohol at a minimum of once every two weeks. Other literature have also maintained that alcohol use amongst SHS students constituted a major problem faced by many second cycle institutions. Underage drinking in schools remains a common phenomenon, and are linked to the developing processes connected with self-identification combined with beliefs and perceptions held by adolescents as well as experimentation and risk-taking behaviour (Schulenberg et al., 2002). Other related factors have been linked and include reduced and poor monitoring by parents towards wards, especially among students who are either living alone in hostels (Schulenberg et al., 2002).

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Emphasis must also be made that alcohol consumption poses substantial mental, social and academic consequences for students who consume alcohol (Hingson et al., 2002). Other associated consequences of alcohol consumption have been found to also include unintentional injuries, physical and sexual assaults, risky sex behaviours, well-being problems, police arrest, and to a larger extent death (Hingson et al., 2009).

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A number of studies have also indicated effects of alcohol use amongst students and include the tendency to negatively affect the educational achievement of these students by resulting in school dropout or even increasing the years of completing school (Chatterji et al., 1993; Yamada et al., 1996; McCluskey et al., 2002; Koch et al., 2005; Renna, 2007; Gil-Lacruz et al., 2007). It has also been acknowledged in many literatures a link connecting alcohol use and many other public health concerns comprising of suicidal ideations, violence and road traffic accidents (Stolle et al., 2009). O"Malley et al., (1998) emphasized in a study that alcohol constituted a major commonly used substance amongst adolescents. Additionally, alcohol use amongst SHS students globally has increased considerably, with an early age of commencement of drinking, (Coffie, 2010). This can be likened to the availability and the ease of getting alcohol by students. As argued erstwhile, a person's alcohol use and his harms with alcohol arise and progress in a cultural perspective, and social values can enthuse or dishearten adolescents' alcohol use (Guo et al., 2016).

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According to the WHO (2018), nearly three million deaths (5.3%) occur annually owing to the destructive usage of alcohol. Again, alcohol use as well as abuse has been identified as an underlying cause in over 200 diseases and injuries as well as substantial societal and economic harms to the individual and the society to some extent with about 5.1 % disability-adjusted life years-DALYS (WHO, 2018). Regardless of the extensive public health measures to promote and create consciousness of the destructive effects of alcohol consumption, worldwide data submit proliferation in alcohol consumption particularly amongst the youths (Jernigan, 2001: Global Status Report on Alcohol, 2004).

2.1.2 Prevalence of Tobacco Use

Research has it that, adolescent stage is regarded as a transitional stage where one transits from childhood to adolescent and is recognized to be characterized with risks taking and

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engaging in more challenging activities (Bandason et al., 2010). It is acknowledged that tobacco use especially amongst adolescents predates history (Thun et al., 2003). The prevalence rate of smoking varies broadly amid populations globally (Eriksen, Mackay & Ross, 2012). Research has also observed several influencing factors to smoking and drifts in smoking prevalence, counting individual factors including educational status, nation-level elements including the economic progress and execution of anti-tobacco control measures (Gilmore et al., 2001; Pomerleau et al., 2004). The WHO in 2011 estimated more than a billion smokers globally (WHO, 2011), with about 150 million being adolescents and younger (WHO, 1999), with a prediction of more than a third of the adolescents becoming habitual smokers and half dying too early (USDHHS, 2012; USDHHS, 2010). Statistically, trends of tobacco consumption are shifting among low- and medium- income countries (LMICs), with about 80% or more of the global smokers (WHO, 2011). Lando et al., (2005), asserted that evaluating the challenges and conceptualizing applicable solutions in these LMICs are perplexing for the reason that there are limited country specific statistics to effectively deal with tobacco consumption especially at early stages of life.

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Statistically, tobacco consumption among both basic and intermediate students in China revealed that the occurrence of ever-smokers and current smokers was 19.0% and 5.4%, respectively (Zhang et al., 2014).Meta-analysis study that considered the rate of smoking amongst adolescents in China also presented an increased smoking attitudes amongst males with a corresponding rise in smoking amongst female in 1981 and 2010 (Han et al, 2015). Freeman et al., (2014) also maintained that the prevalence of daily smoking reduced from about 60% in the years 1980 to 2012 amongst Mexican men and women. Other studies have also established a significant decrease in tobacco smoking prevalence rates particularly in the United Kingdom and the Nordic countries (Freeman, et. al., 2014). The rate of smoking in the United Kingdom declined in the years 1950 and 1970 from about 80% to 40% in both men

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and women respectively (Peto et al., 2000) to about 20% among both men and women in the year 2012 (Freeman, et. al., 2014). Even though rates of smoking has seen some level of decline in most European countries, the issue of smoking still remains a disturbing health concern as Eastern Europe and Southern Europe are still witnessing increased rates (Islami, Stoklosa, Drope, Jemal, & Catto, 2015).

In some sub-Saharan African countries, assessed prevalence of smoking in the year 2010 was seen to be about 14% and 2% amongst males and females respectively (Bandason et al., 2010). However, studies on the prevalence rate of ever-smoked were 28.8 % amongst SHS students in Zimbabwe. Again, the rates of ever-smoked among males was 37.8% and suggestively greater amongst females with a proportion of 18.5% (Bandason et al., 2010). Even though it is acknowledged that there is no tobacco manufacturing company in Gambia (Jallow, Britton, & Langley, 2017), smoking rates are observed to be 24% amongst men and 0.8% among women in 2012 (Freeman et al., 2014). In addition, statistics on tobacco consumption among adolescent students showed that about 9% of girls and 13% of boys within the age bracket of 13–15 years in Greater Banjul Area in Gambia have been engaged in smoking in the last 30 days (Manneh, 2008). In another study by Jallow et al., (2017) that attempted to consider the rates and determinants of tobacco use amongst Gambian adolescents involving 10392 student participants with a age range of 12-20years, the observed proportion of "ever smoking cigarettes" remained as 16.7% constituting about 25.7% boys and 9.4% girls. Again, it was recognized in the same study that "current smoking" was about 4.5% which also involved about 7.9% boys and 1.5% girls respectively (Jallow et al., (2017). In Nigeria, a study among students showed that 9.7 % of the study participants had commenced tobacco use with the leading form comprising of cigarettes (7.3%). Again, males together with those more pro-smoking attitudes were more likely to have started smoking. Study participants with family history of smoking were 3.47 %

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amongst parents and 2.26% among friends more probable to initiate smoking. Also , the study observed that non-smoking students in non-government secondary schools are predisposed to smoking later in life (Odukoya et al., 2013).

Ghana, like many other African countries, is not free of tobacco consumption. Report in the Ghana Demographic and Health Survey (GDHS) (2003) indicated a 9% smoking rate amongst Ghanaian men, with significant notable regional and district dissimilarities with the Northern Region recording as high as 17.7% and about 15.3% in the Upper East Region. Contemporary study to assess smoking use and its rates in Ghana comprising of 7096 study participants inhabitant in the sampled households, the prevalence rate of "self-reported current smoking" was 3.8%t and sex stratification rates of about 8.9% amongst males and about 0.3% amongst females respectively (Owusu-dabo et al., 2009). In addition, it was indicated that amongst "ever smoking" was about 9.7% (resulting in 22.0% amongst males and 1.2% amongst females) (Owusu-dabo et al., 2009). In a study to establish tobacco use amongst students in the age brackets of 11–17 years in Ghana, Mamudu, (2013) identified significant rates amongst males and females with about 6.7 % and 4.4% amongst "ever cigarette smoker"; 2.4% and 1.4% amongst "current cigarette smoker" ; 6.8% and 5.2 % for "user of non- cigarette tobacco products" among males and females respectively.

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The Global Youth Tobacco Survey (GYTS) 2006, indicated amongst Ghanaian students in the junior high schools within the age brackets of 13 – 15 years, the rates of smoking amongst "ever smokers" as well as "current smokers" of cigarettes as 14.3% and 4.8 % correspondingly. These JSS students are the ones that will be admitted to the senior high schools in the country. Additionally, ever- smoking male students' rates were noted to be 14.8% and were considerably higher than female students (13.0 %). The percentage of ever-smokers by class stratification in JSS 1 stood at 16.2 %, which was statistically higher than ever-smokers in JSS 2 (13.0 %) and JSS 3 (13.5 %). The proportion of ever-smokers aged

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less than 12(25%) was considerably greater than those aged 16 years of age and older (16.7%). These statistics portray a disturbing phenomenon, as the youthful age of the country (Ghana) are gradually been eating away with tobacco consumption and the likelihood of an increase in both communicable and non-communicable diseases such HIV/AIDS and respiratory diseases respectively.

Tobacco consumption in any form amongst adolescents constitute a serious public health worry for the reason that it poses both medium and long-term effects on its users (Odukoya et al., 2013). Smoking has been associated with modifications in blood serum cholesterol, nicotine dependence, and withdrawal in children (Mamudu, 2013). Secondhand smoke is also associated with respiratory diseases in children, including bronchial diseases (IARC, 2002; USDHHS, 2006). It is also estimated that, of the 603,000 mortalities attributable to second-hand smoking in about one-hundred and ninety-two (192) countries worldwide in 2004, 28% were children (Oberg et al., 2011), and therefore making tobacco consumption and regulations essential public health issues for all walks of life including children, predominantly because 80percent to 90 percent of smokers initiate smoking during childhood (USDHHS, 2012).

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2.2. Factors that influence tobacco and alcohol use among senior high

Several factors are recognized to impact and encourage tobacco smoking and patterns in its prevalence, from individual-level influences such as educational status to the country-level influences such as national economic development and availability and enforcement of anti-tobacco control policies (Gilmore et al., 2001). This explains that several variables operate concurrently to influence an individual's chances of commencing the use, abuse and addiction of alcohol and tobacco.

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For the purposes of this paper, the researcher considered these influential variables in terms of Agent, Host and the Environment.

2.2.1 Variables of alcohol use

Substances (drugs) have varying potentials in generating "pleasurable or good feelings" in their users. Thus, drugs that consistently yield an extremely satisfying feeling (euphoria) are more likely to be taken repetitively. Alcohol has reinforcing abilities that make users wish to use them and it is associated with the ability of alcohol to increase neuronal (euphoria) activities in the brain (Goodman et al., 2008). According to Feinstein et al., (2012) the widespread availability of alcohol also contributes to the initiation as well as the continual use of addictive drugs among adolescents.

Scholars hold that, for both pharmacological and psychological reasons, an adolescent who attempts a certain type of substance is more probable to use that substance again if he or she appreciates the effects. If unpleasant experiences are however, associated with the use of the substance, it is unlikely that one would try it again. However, continued substance use by adolescents is commonly associated with a predisposition toward rebelliousness, nonconformity, and independence (Kelly et al., 2012). Pleasant effects of substances used by the youth which encourage continuous use include altered perceptions, feeling, states or behaviour. Users of cigarette and alcohol are believed that it has the potential to lessen tension and frustration as well as relieving boredom and fatigue (Hepworth et al., 1998). Relatedly it is believed that alcohol and tobacco use aid adolescents to get away with harsh realities of their world. Alcohol and tobacco may offer pleasure by some level of "inner peace, joy, relaxation, kaleidoscopic perceptions, surges of exhilaration, or prolonged heightened sensation." These emotional highs and imitated sense of well-being only temporarily supplant such tensions and feelings of frustration (Hepworth et al., 1998).

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2.2.2 Host variables of alcohol use

The host variables are the characteristics of the individual including age, sex and other biological factors. Biological factors do influence adolescents into the commencement of substance use. This has largely been associated with the fact that the anatomic characteristic of the adolescent brain, predominantly the prefrontal cortex and the reward pathways are still evolving, and therefore they show an intensified tendency towards taking the risk, comprising risk of smoking, alcohol use and or using other drugs (Feinstein et al., 2012). Studies acknowledge that during the adolescent stage, it is characterized by a transition of cognitive, biological, physiological and psychological function (Crockett & Petersen, 1993). The adolescent stage, which is normally in the age brackets of 10-19 years (Crockett, et. al., 1993) is when most children find themselves in junior and senior high schools.

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In Ghana senior high school students are frequently in the early to late adolescent stages with ages extending from about 12-18 years. The psychological and social transitions of adolescence are prerequisite for self-identity realization, self-reliance and recognition amongst peers (Bauman et al., 1999). All of these facilitate the risk-taking behaviours of adolescence, of which substance use is the most damaging (Fergusson & Horwood, 1995). Substances (including alcohol) have varying effects on their users. Polymorphisms of genes that encode enzymes for absorption, metabolism and excretion as well as receptor-mediated responses influences degrees of reinforcements observed in individuals on substances including alcohol (Goodman et. al., 2008).

2.2.3 Environmental variables of alcohol use

Commencing and continuing the use of alcohol is under the con-influence of a host of environmental factors including conducive-environment. The environment includes the immediate neighbourhood, which has been predominantly been defined in research cycles as

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a social system (Frisbie, 1988; Wellman, 1979). Similarly, concepts relating to neighbourhood influences evidently established the disturbing influence of the neighbourhood on the whole range of behaviours amongst adolescent (Coleman, 1998). These influences are conveyed via conduits such as local organizations, informed social control, forming deviant peer groups, helping of social network and parents' features. Alcohol consumption is higher in societies in which alcohol and its products are cheap and easily accessible. According to Crum (1996), being a dweller in underprivileged community intensifies the likelihood that adolescents were offered or exposed to numerous substances of abuse including alcohol and develops substantial alcohol consumption patterns (Karvonen & Harja 1997). The variety of drink, amount and place, rate of intake, time, sex, age and accompanying ceremonials may perhaps be sketched to a socio-cultural setting (Owusu, 2008; Heath, 1991).

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According to Rowe et al., (2006), hold the contention that families do show an essential role in the use of alcohol and other drug-related harms amongst adolescents. Parental encouragement has also been acknowledged as a key influence in adolescent alcohol consumption as described elsewhere (Kim et al., 2010). A study conducted amongst SHS students in Wisconsin shows an approximately 53.3% of students linking parental influence as a factor in either to use or not to use alcohol (Nash et al., 2005). Ethan, (2000) also observed that in the USA, approximately 7 million persons under the age of 18 years have their parents as alcoholics. Research sanctions that children with poor parental corrections are more likely to end up as regular alcoholics (Jackson et al., 1999; Yu, 2003). Other studies have also made known the relationship between adolescent behaviours such as social vices, health difficulties and academic challenges and parents who abuse alcohol (Adger, 2001).

Additionally, peer pressure influences have been recognized as a determining factor of public drunkenness (Kelly et al., 2012). Influential peers who use alcohol have been recognized as a

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causal factor of alcohol use amongst other adolescents. The social norm approach is a model used to describe the influence of social norms on behaviour. Social norms describe caregivers and peers. The theory further explains that human behaviours are influenced by inappropriate insights of how members of social groups thinks or acts. The applicability of the of the theory is reflected in adolescents who may consider that the alcohol use amongst other adolescents are more accepting and that other adolescents consume more than what they really consume further motivates them to consume alcohol.

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Relatedly, alcohol availability and advertising produce a significant role in supporting and advancing an environment in which alcohol consumption is acknowledged as normal and also adolescent assertiveness to alcohol use (Gerbner, 1995). Publicity on alcohol is an essential contributor to encourage adolescents to consume alcohol (Saffer et al., 2006). For adolescents who have not commenced alcohol intake, the hopes‟ of these youths are influenced by a normative assumption about the teenage habit of drinking as well as in observing parents, peers and other role models and celebrities are on the various media to increasingly portray the use (Anderson, 2009). Past studies have also made mention that, the media which the youth are predisposed to also influence adolescents and makes them more vulnerable and increases the probability of experimenting alcohol usage (Strasburger, 2002; American Academy of Pediatrics, 2007). The media, consisting of the audiovisual media, print and electronic (internet) are commanding channels in motivating alcohol usage through eye-catching and fascinating modus. Austin et al., (2000), asserted that there is a positive relationship between adolescents' consumption of alcohol and exposure to social media alcoholic advertisement. For instance, research has it that amongst adolescents amid the age brackets of 14-18 years with disorders related to alcohol use, there is substantial brain activation to alcoholic visuals or pictures that significantly influence adolescent to use alcohol (Tapert et al., 2003). Primarily, it is also acknowledged that alcohol excites brain

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areas that are connected to reward or desire centers which have positive effect on alcohol consumption (Tapert et al., 2003). As an emphasis, Chen et al., (2002) posited that adolescent are more characterized with positive emotional reactions alcoholic products and therefore tends to adopt behaviours that encourages them to use alcohol and also accepts more readily the use of alcohol as a social recognition especially amongst peers that use alcohol. It is also known that devoting some level of concentration to adverts have some level of reward on the viewer, thus positive or negative benefits. The rewards are most often construed to be right and therefore influence the viewer to want to use the product being advertised (Aitken et al., 1998).

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2.2.4 Substance variables of tobacco use

Tobacco comes with varying products and may include it products cigarettes for smoking, pipes, cigars or hand-rolled tobacco. Tobacco smoking is considered very injurious to ones' health as well as people within the immediate environment where the tobacco is being smoked for the reason that the burning of the tobacco courses the release of very harmful compounds of about 7,000 compounds of which about 70 compounds are known to be carcinogenic agents (USDHHS 2005; 2010).

2.2.5 Host and environmental influences of tobacco use

Several studies including DiFranza et al., (2006) and Pierce et al., (1998) observed that irrespective of sex, tobacco-consumption attitudes amongst school-going adolescents have strongly been linked to tobacco industry advertisings, and has been confirmed by previous studies elsewhere and probably suggests the consequences of tobacco establishments' diffusion of developing countries (Yach et al., 2000). According to Owusu-Dabo et al., (2009) school-going adolescents are easily influenced by tobacco industries and their agents by giving out free cigarette. Owusu-Dabo et al., (2009) emphasized that it is mostly seen

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among the male current cigarette smokers than the female counterparts. Likewise, descriptions and images exhibited by tobacco manufacturers persuade most people especially adolescents who are considered most vulnerable to tobacco use (WHO, 2009). These descriptions are considered to have a stronger influence and correlation on female adolescents who are into tobacco supply have a high probability to smoke cigarettes (Mamudu, 2013).

In addition to the above, Hesketh et al., (2001) and Hiscock et al., (2012) identified the influences of sociodemographic characteristics such as gender, ones' economic position and family or associates that smoke together the economic development and psychosocial dynamics of families in relation to divorce or single parenting. Wang et al., (2016) established an association between adolescent personal sociodemographic factors both biological characteristics such gender and age, and social characteristics such as the ones' education and environmental settings together with the threats of current smoking, initiation and continuation. Wang et al., (2016) was found to be consistent with other studies observed elsewhere (Anderson et al., 2006; Tang & Loke, 2013).

History of family influence associated with adolescent smoking have been recognized in research cycles. Parent-smoking is recognized to increase the possibility of youthful smoking (Mashita et al., 2011; Xie et al., 2013). This assertion was confirmed by Wang et al.,(2016). Wang et al., (2016) observed some level of consistent indication that parent-smoking statistically influences their adolescents' present smoking acts, more importantly, adolescents with both father and mother with tobacco smoking attitudes have a higher possibility and influences adolescents who are present smokers compare to adolescents who have only either the father or mother smoking tobacco. Brathwaite et al, (2015) also observed varying gender range of current smoking and attributed them to the existence of strong socio-cultural values, customs and taboos which daunt females to smoke. Conversely, these socio-cultural values may present smoking amongst males in some cultures as acceptable and appropriate, and as a

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pictogram of prominence and societal authority (Waldron et al., 1988; Kaplan et al., 2011). In Ghana Owusu et al., (2009) recognized religion as a substantial confluence of tobacco smoking. Ghana is mostly Christian (70 %) denominated and Muslim (17 %) populations, (GDHS, 2003) amongst whom tobacco consumption in any form was relatively unusual in a study by Owusu et al., (2009) however, this sharply differs with persons who belief in the presence of smaller gods (mostly referred to as traditionalist) and with observance to traditional beliefs and values in Ghana.

Occasional experimental tobacco smoking among adolescents is recognized to considerably intensify the possibility of smoking in later life as an adult (Breslau et al, 1990; Tyas et al., 1998). Emphasis must also be made that once smoking has commenced, stopping becomes seemly difficult and a predictor for substance dependence (Pierce et al., 1996). As has maintained that, should the present trend of tobacco smoking amongst adolescents remain, there will be an appreciable deaths of about 250 million adolescents and young people with a higher proportion of these adolescents coming from developing countries including Ghana (World Health Organization 2012).

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2.3. Perception and effects of alcohol and tobacco consumption among students

The use of alcohol and tobacco amongst students has been acknowledged more than two decades literatures including Hu et al., 1994, Batel et al., 1995, and Burton et al., (1997) who asserted that the use of alcohol and tobacco happen concurrently. Hermand et al., (1995, 1997, 2000) submitted that several people including those who smoke, consume alcohol as well persons who do not smoke or take alcohol, recognize the pooled consequences on the healthiness of smoking and the use of alcohol as sub-additive. Once one substance (alcohol or tobacco) is previously used either moderately or in higher quantities, the incorporation of other substance is acknowledged to have minimal impact on health threats (Kabiru et al.,

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2010). This sub-additive model allows little similarity to be projected in epidemiological surveys. The associated medical perils of conjoining consumption of alcohol together with tobacco smoking, primarily increases the chances of developing cancer, and the effectives are also known to be multiplicative (Tuyns et al., 1977; Rosengren et al., 1988; Zambon et al., 2000). Adolescent-alcohol and tobacco consumption are associated with a considerable burden of illness, injury (Hoof, Zanten, & Lely, 2013; Rehm et al., 2008/2009) and contributes substantially to the growing proportions of non-communicable diseases (Toustad et al., 2006). Alcohol and tobacco use by adolescents have been maintained by many literature that these substances increases the odds of engaging in unsafe sexual behaviors, comprising of non-condom usage together with numerous sexual partners which also has the tendency to increase the risk of contracting sexually transmitted infections including HIV/AIDS (Kayembe, Mapatano MA, Fatuma et al., 2008; Nada & Suliman, 2010; Embleton et al., 2013). The global associated effects of alcohol use is known to cause about 3·3 million mortalities yearly (5·9% of crude mortalities) and adds to approximately 4·6% of disability-adjusted life years (Rehm et al.,2009; WHO, 2014; Breet, Goldstone, & Bantjes, 2018). Proportions of mortalities associated with alcohol are nearly twice amongst males (7·6 percent) when paralleled with females (4 percent) globally (WHO, 2014). Contemporary studies have made known that tobacco smoking-is associated with several physiological consequences, comprising of cancer, emphysema, organ damage, and heart disease (Jarvis et al., 2009).

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Studies that have attempted to study students' reasons for drinking and smoking have cited reasons such as pleasurable feelings and social pressure(Jarvis et al., 2009). Adolescents, as a population cluster, combine the social context and appreciate the environment which they are incorporated. For example, adolescent alcohol use is associated with behaviours that are characteristic to groups and usually of same age mates hence adolescents within such groups

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can be swayed by peers, and regarded an enabler as well as a prerequisite of collaboration and permanence within the group (Efigenia et al., 2015). The risk of adolescents starting the use of alcohol is considered to increase as results their vulnerability in the social network of peers. (Gil-Lacruz et al., 2010- ; Mundt, 2012). This consumption is positively and considerably associated when household members are also consumers. Parenting lifestyles, parental attitudes and conducts are noteworthy influences accompanying binge drinking (Jones & Magee, 2014; Stafström, 2014).

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2.4. Anti-tobacco Policies

The existing social transition in many countries especially in Africa combined with the rise in urbanization which pushes the majority of youths to urban centers exposes them and increases their risk of tobacco smoking and other risky deeds (Magitta, 2018). The prevailing anti-tobacco control policies and regulations in most African countries permit the exponential advance of the incident cases in Africa. The lack of operational legal framework predisposes children to tobacco exposures at early stages of their life and consequently catches it easy to involve in smoking at the adolescent stage (Magitta, 2018). For an illustration, it is very common in Africa to identify and considered usual for the smoking parent or even school teachers to send a child of any age to the nearby kiosk for buying him cigarettes. Anti-tobacco policies are therefore needed to prevent the consumption of tobacco and its products.

Stopping tobacco consumption amongst the masses, especially among adolescents, several nations have employed robust anti-tobacco programs (Aslam et al., 2015). Research acknowledges policies such as tax increment on tobacco and its products, controlling tobacco sales, together with stringent implementation of tobacco restrictions at public spaces reduces the use of alcohol especially amongst adolescents (Jha et al., 2000). Studies described elsewhere have shown the relevance of anti-tobacco policies in decreasing substantially, the

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rates of tobacco use (Wakefield et al., 2008). Wakefield et al., (2008) mentioned that increment in cigarette and its product excise taxes correspondingly increases the cost price, and consequentially decreases cigarette consumption.

Relatedly, Wakefield et al., (2008) indicated that advertising tobacco control measures also reduce smoking prevalence. Research has it that individuals are able to recollect adverts done long ago with the intention to end and educate the public on harmful effects of certain behaviours; however, there is a positive behavioural change with recent media exposures with campaigns seeking to address the harmful effects of certain behaviours. For example, Sly et al., (2005) noted that adolescent-smoking proneness in Minnesota declined in the course of adolescence smoking avoidance media campaign.

Anti-tobacco control and regulation policies are recognized to reduce tobacco consumption and associated hazards (Islami et al., 2015). As indicated in 2003 by the World Health Assembly (WHA) accepted the WHO Framework Convention on Tobacco Control (WHO FCTC), the first international agreement conveyed in the umbrellas of the WHO. Subsequent to that, in 2008, the WHO acknowledged six operational evidence-based actions towards decreasing tobacco consumption and began to implement these policies under an acronym MPOWER (WHO, 2013). In the year 2011, majority of states under the United Nations (UN) committed towards decreasing untimely deaths associated with non-communicable ailments from about 25%t in the 2010 to the year 2025 by tackling the main casual factors, and considering about 30 % comparative decrease in the rates of present tobacco consumption in individuals from 15 years and above (Kontis et al., 2014). In the year 2011, Ghana agreed and endorsed the WHO FCTC (Wellington et al. 2013) which is aimed at controlling the use tobacco among the Ghanaian populace. Conferring to Article 5 of the FCTC, member-states are obliged to develop a national policy framework, implement, occasionally update and evaluate comprehensive multi-sectorial nationwide anti-tobacco regulations, plan and

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programme in harmony per the requirements of the FCTC. In 2012, the Government of Ghana passed the Public Health Act, Act 851, which stipulates wide-ranging public health legislation in Ghana, and necessitates anti-tobacco control polices including the ban on smoking in public spaces and ban promotion, health cautionary on packages, as well as age restrictions on tobacco use and acquisition (Mamudu, 2013). Influences related to youth-smoking intents in Ghana have revealed that intensely implementing smoking prohibitions in schools have a protecting consequence on students' present and later smoking attitudes (Wakefield et al., 2000; Doku et al., 2012).

Doku et al., (2012) observed in a study that once tobacco smoking is allowed in and around the school's environment, there is a higher possibility by students to have the intent to smoke paralleled with schools forbidden smoking. It was acknowledged by the same study that amongst both "ever and never-smokers", the likelihood of later smoking intents was greater amongst persons who differed or were not certain concerning the assertion that smoking is injurious to one's health. Similarly, tobacco advertisement put forth a normative encouragement on adolescents (Fishbein et al., 2003; Hanewinkel et al., 2010), develops positive assertiveness in the direction of smoking and intents to smoke (Hanewinkel, et al., 2010). Again, as was noted amongst German adolescents experience with publicities on cigarette, on the other hand not with any other publicity, was acknowledged to contribute and increase the possibilities of one wanting to smoke (Hanewinkel, et al., 2010).

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2.5. Anti-Alcohol Policies

Alcohol consumption in adolescents is characterized by the considerable liability of ailment and injuries and a predictor of later risky behaviours including, tobacco smoking, cannabis use, violence and low academic performance (Kuntsche et al., 2012) as well as risky sexual behaviours. To effectively address issues of alcohol consumption in adolescents necessitates

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the need for anti-alcohol control policies, especially among school-going adolescents. Anti-alcohol policies among the youth are key to lessen youthful alcohol use and its associated consequences (Bonnie et al., 2004). Engaging in control policies to consider age restrictions, the alcohol concentration that is allowed onto the commercial space, restrictions on areas where alcohol are to be sold as well as advertisement and increasing the prices of alcoholic beverages has a to reduce effect on alcohol consumption amongst students as well as adolescents (National Academies Press, 2004; Grube & Nygaard, 2005; Brand et al., 2007; Manuscript, Policies, & Study, 2010). The robustness and comprehensiveness of a country's regulatory programs may, therefore, be predominantly imperative towards decreasing alcohol consumption and associated harm among adolescents (Grube et al., 2005). Though several anti-alcohol policies towards the lessening of adolescent-drinking are youth-specific (DeJong & Blanchette, 2014) however studies acknowledge that some population-oriented policies (thus policies that are not directly targeted towards the youth) including alcohol taxes have had a significant impact towards reducing youthful-drinking and binge drinking (Paschall, Grube & Kypri, 2009). Relatedly, according to the Institute of Medicine to effectively to reduce the degree to which and medical as well as the social effects associated with amongst adolescents would be to lessening the degree and significances of adult alcohol consumption (Bonnie et al., 2004; Xuan et al., 2015).

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CHAPTER THREE

METHODOLOGY

This chapter of the thesis presents the methods that were used to collect the relevant data to answer the research questions. The methodology was discussed under the following sections; study area, study settings, research design, study population, sample size, ethical issues, selection and rejection criteria.

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3.1. Study Area

The study was conducted in the Tamale Metropolis in the Northern Region of Ghana. The Tamale Metropolitan Assembly came into been by the legislative instrument (LI 2068) in the year 2004. Tamale serves as the Metropolitan Capital city and the regional capital of the Northern Region (GSS, 2010). The Tamale Metropolis is composed of the Tamale Central, the Tamale South and the Tamale North constituencies. The Tamale Metropolis constitutes one of the twenty-six (6) administrative districts in the Northern Region. It is situated in the central part of the Region and borders with Districts including Sagnarigu District (west and north), Mion District (east), East Gonja (south) and Central Gonja (south-west). It is maintained that the Tamale Metropolis has a land size of about 646.90180sqkm and lies situated amid latitude 9º16 and 9º 34 North and longitudes 0º 36 and 0º 57 West (GSS-2010). The Tamale Metropolis is situated in the Northern Region and by this situation; it has a good market in terms of local goods and produce from the agricultural and business sectors from the other districts in the region. In addition to the relative setting of the Metropolis in the region, it has the advantage to gain from commercial activities within the West African sub-regions including countries like Burkina Faso, Niger, Mali as well as the northern Togo and also serves as a passageway to the south of Ghana(GSS-2010).

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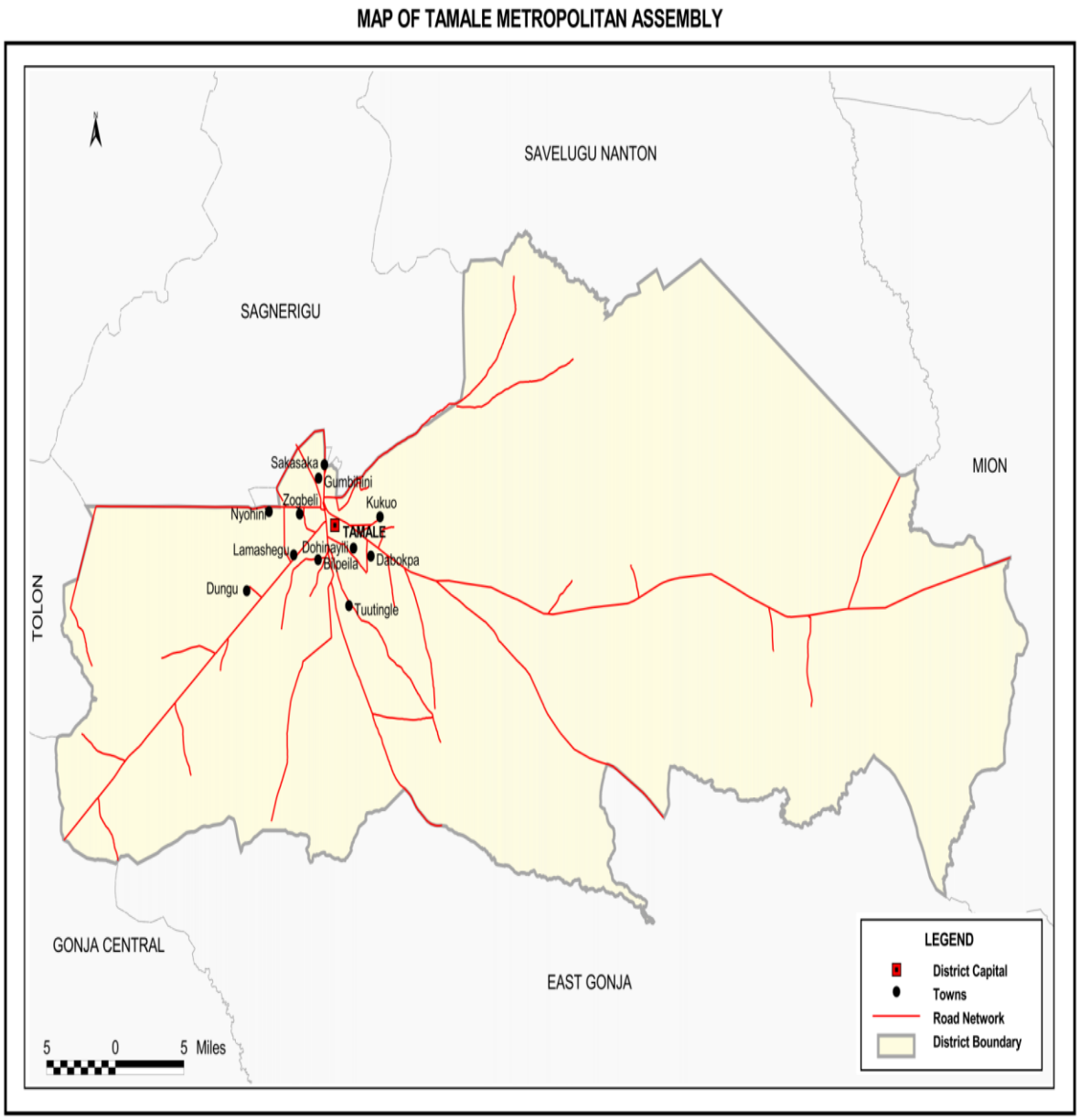

Figure 2: Map of Tamale Metropolis

Source: Population and Housing Census, 2010.

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3.1.2. Population size, structure and composition

Tamale Metropolis has a population of about 9.4% (233,252) of the region's estimated total population (GSS, 2010). Out of the estimated 233, 252 total population, males accounted for about 49.7 % whereas females constituted about 50.3 % of the population. Again, the percentage of the population in the urban areas was approximately 80.8%, a little higher than the population dwelling in the rural areas (19.1%) of the Tamale Metropolis (GSS, 2010).

The metropolis has a youthful population with about 36.4% below the age of 15 years. This represents a broad base population pyramid which points off with a lesser number of older people (that is 60 years and older) representing about 5.1%. The estimated age reliance percentage for the metropolis is 69.4, and the age reliance percentage for rural areas is greater (86.5) than that of urban neighborhoods (65.7) (GSS, 2010)

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3.1.3. Household Size, Composition and Organization

Tamale Metropolis is endowed with aggregate households of 219,971, existing in 19,387 houses. Average household proportions in the metropolis are about 6.3 persons/household (GSS, 2010). Children accounted for the major percentage of the household configuration constituting about 40.4% with heads of household constituting about 16.1% of the household population. Relatedly, partners (husband and wife) constituted about 9.4% as well as other relatives representing approximately 12.9% of the total population. Also, the percentage of households who dwell in "extended household construction (that is, head, spouse(s), children and head's relatives)" accounted for the leading percentage (46.1%) compared to that of any other type of household construction. Additionally, "nuclear households (head, spouse(s) and children)" accounted for about 19.5% of households in the metropolis (GSS, 2010).

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3.1.4. Economic Activity Status

According to the Ghana Statistical Service (2010), approximately 63.3% of the population aged 15 years and above in the Tamale Metropolis is considered as part of the workforce and about 36.7% are economically inactive. Among the workforce population, about 92.6% are engaged in one form of work whereas about 7.4% are jobless. In lieu of persons who are economically inactive, a greater proportion of them constituted the students' population (56.0%). Again, about 20.9% carry out household responsibilities and 12.4% are either too young or old to work. Nearly 5 out of 10 (52.9%) of jobless individuals in the metropolis are in search of work for the first time.

3.1.5. Social and Cultural Structure

Generally, the Northern Region is noted for its large land cover and lesser population proportions. The metropolis started experiencing an increase in population growth when several persons with diverse cultural and ethnicity begun migrating from other parts of the country to dwell in the metropolis, as a result creating a cosmopolitan area. It is acknowledged that, the Dagombas constitute the main ethnic group. Other ethnic groups in metropolis are noted to include the Gonjas, Mamprusis, Akan, Dagaabas as well as groups from the Upper East Region. Besides, it is acknowledged that other nationals from neighboring African countries are also found in the metropolis. The cultural practices of the people are echoed in several events including yearly festivals, outdooring rites, marital rites and other related activities. Notable festivals performed by the people include Damba, Bugum (fire festival) and the two Muslim Eid festivals (Eid Fitr and Eid Adha). The Metropolis has Muslim dominance, however there other religious sects including Christians, spiritualists and traditionalists (GSS, 2010).

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3.1.6. Health Facilities and Educational Institutions

Health facilities in the metropolis consist of both private-owned and government owned medical facilities. The medical facilities in the metropolis consist of government owned (the Tamale Teaching Hospital, the Tamale Central Hospital, the Tamale West Hospital), and private owned health facilities include, the Seven Day Adventist Hospital (SDA), Builpela Health centre, Vitting Health centre and Kabsad Scientific Hospital, among others.

The metropolis is also endowed with several schools, comprising both private-owned and government owned schools. There are good Senior High, Junior High, Basic and kindergarten Schools in the metropolis. The literacy rate is about 60.1% whereas illiteracy rates constitute about 39.9% of the population. Similarly, the percentage of literate males (69.2%) is significantly greater compared to the females (51.1%) (GSS, 2010).

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3.1.7. Road Network

The road network system in the metropolis is fairly good; especially among the roads that links the metropolis to the neighboring districts. This makes it motor-able and more convenient in shuttling from one place to the other. Traffic jamming is less noted in the metropolis and there is sometimes the practice of over speeding among motorist. Majority of the nearby communities are connected to the major market centers via feeder roads. The road accessibility, especially the ones' connecting major farming communities to the major market centres, allows agrarians to transport their farm yields to the city marketing centres. As a result, there is appreciable reduction in post-harvest problems (GSS, 2010).

3.1.8. Relief Features and Climatic Conditions

Climatically, it is known that metropolis is about 180 meters above sea level. The metropolis has a flat land with few isolated hills. This greatly have negative implications on agricultural

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activities in the metropolis. There is also a variation in the day-to-day temperature from season to season. For the period of the rainy season, occupants of the metropolis experience high humidity, considerable sunshine with heavy thunder storms, paralleled to the dry season where occupants experience dry Harmattan winds in the months of November to February as well as high sunshine from the months of March to May. The climatic characteristics give exceptional prospect for industries that want to tape into solar and use sunshine as a natural preservative. Additional unexploited prospect of the Metropolis is the development of recreational centres including "artificial parks and gardens that could take the advantage of the high sun rays by building swimming pools, parks for both children and adults to relax during the excessive sunshine period" (GSS, 2010).

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3.1.9. Occupational Activities

The occupation of the people in the Metropolis includes service and sales workers constituting about 33.0%. Other occupation included those in the craft and related trades works which also constitute about 21.5%. The percentage of persons engaged in skilled agricultural, forestry and fishery constituted about 17.6 %, which accounts for the third-largest occupation in the Tamale Metropolis. Comparatively, males have more dominance in almost all the occupational activities, except occupations related to service and sales where about 16.5 % of males are engaged, paralleled to a great percentage of 50.3% for females. Similarly, in the elementary occupational activities it is observed that females (11.3%) constituted the majority compared to their male counterparts (6.1%) (GSS, 2010).

3.1.10. Proportions of Fertility, Mortality and Migration

It is estimated that the Tamale Metropolis has a total fertility rate (TFR) of 2.8%. Comparatively, the metropolis' TFR is slightly lower to that of the TFR for the region (3.5%). The overall fertility rate for the metropolis is estimated at 79.9 births/ 1000 women

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aged between 15-49 years. It is also acknowledged that the crude birth rate (CBR) exists as 21.2/1000 population. On the other hand, the CBR for the metropolis is 5.6 death/1000. Accident/violence /homicide/suicide account for 9.6% of all deaths whiles other causes contribute to 90.5% of deaths (GSS, 2010).

Most of the migrants (54.9%) residing in the metropolis were born in other towns in the region whereas about 45.1% were born in other regions.

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3.2. Study setting

Tamale metro has eight senior high schools under its jurisdiction namely; Tamale Girls (Pagha Naa), Anbariya SHS, Vitting SHS, Ghana SHS, Dabokpaa Tech/Vocational SHS, St Charles SHS, Business SHS and Presby SHS.

The study was carried out in four selected schools out of the eight, namely; Ghana Senior High (Ghanasco), Business Secondary School (Bisco), Vitting Senior High School (Vittin), and Anbayira Senior High School. The schools were purposively selected. The schools are all located in the Tamale Metropolis. These schools were chosen purposively because they have greater students population with students from all parts of the Northern Regions and Ghana. This makes these schools culturally diverse and therefore, will help the researcher to unravel students' understanding and usage of tobacco and alcohol. Again, all the selected schools are mixed senior high schools. This will allowed the researcher to collect data from both male and female senior high students and dealt extensively with the use of tobacco and alcohol use amongst high school students in the Tamale Metropolis.

3.3. Study design

The researcher used a descriptive cross-sectional study design, using self-administered questionnaires to generate data to gain insight into the prevalence of tobacco and alcohol use

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amongst some selected senior high students in the Tamale Metropolis. The researcher collected basic characteristics from participants including socio-demographic data, prevalence and use of tobacco and alcohol together with their effects.

3.4. Study population

The study population included students from the selected senior r high schools in the Tamale Metropolis

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3.5. Sample size determination

To ensure representativeness, Yamane's formula for sample size determination was employed in determining the sample size for the study. Given by the equation; "n = N/1+ N (e) ^{2} " The selected schools and their populations are presented in the below table

Name of School	Population
Ghanasco	2793
Vitting SHS	1875
Business Secondary School	2544
Ambariya SHS	2215
Total	9427

Source: Students Population of each School, 2019.

The 'n' denoted the sample size, with "N" representing the population size (that is the population of students in the selected senior high schools in the Tamale Metropolis), and 'e' also denoting the level of precision. The students' population of the four schools is 9427.

Now, using a confidence level of 95%, precision (e) of 0.5% and population size (N) of 9427 students, the expected study participants was 400.

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$$n = N/1 + N(e)^2$$

$$= 9427/1 + 9427(0.05)^2$$

$$= 383.9 =$$

Allowing 5% for contingency brought the sample size to 403. We recruited a minimum of 400 students to be part of the study.

3.15. Sampling technique

The questionnaires were administered across the four selected schools using probability proportionate size and simple random sampling techniques in recruiting the various forms/classes and participants. The diagram below gives a detailed presentation of the sampling techniques.

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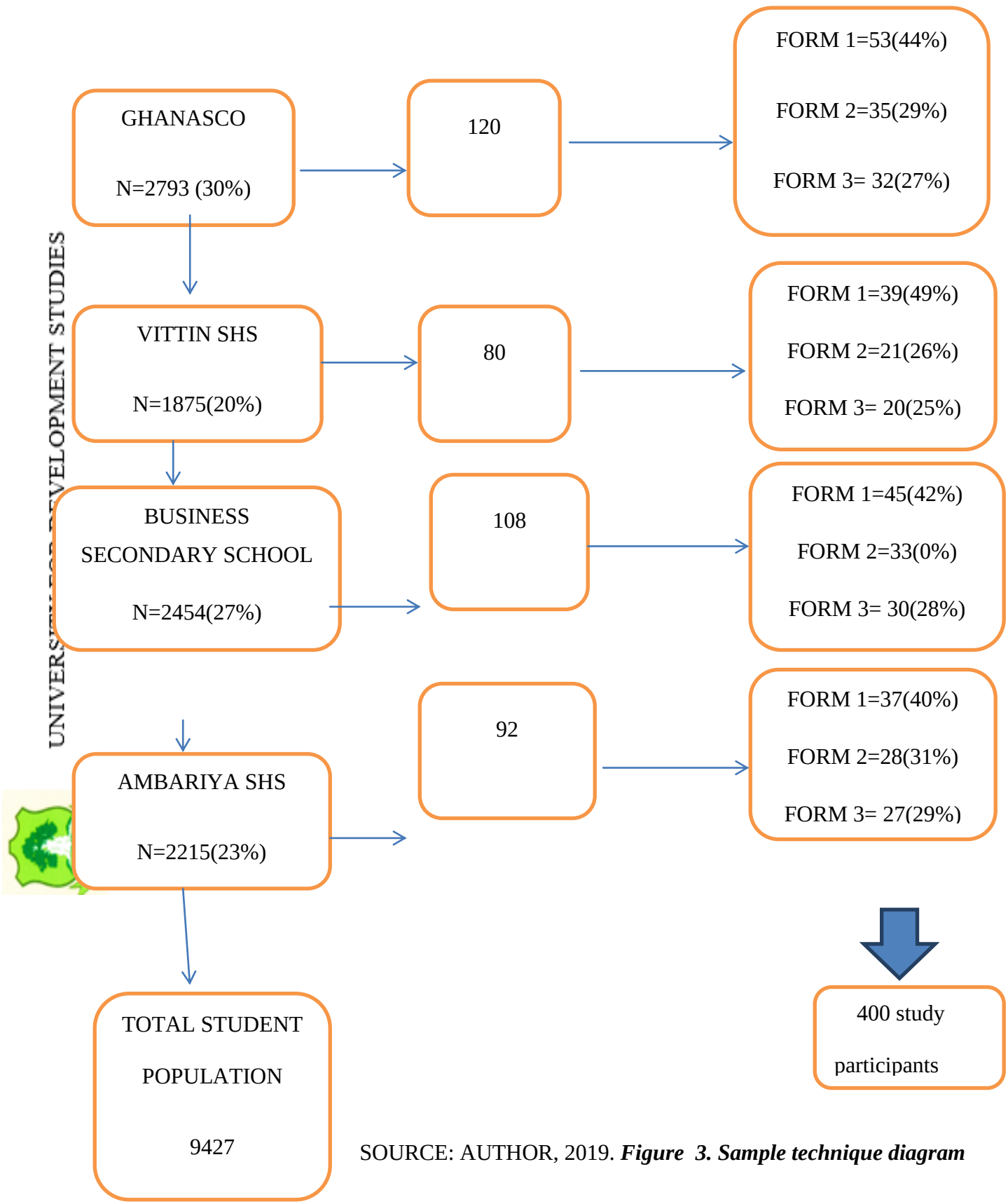

SOURCE: AUTHOR, 2019. ***Figure 3. Sample technique diagram***

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3.16. Pretesting

The survey questionnaire was pre-tested in January, 2019 in the Tamale Senior High School to determine the responds of 10 respondents to the questions. Questions were being modified where necessary based on the outcome of the pretesting.

3.17. Ethical Issues

Permission was obtained from the various Heads of the four schools to conduct the study.

3.18. Data Quality Control

The following measures were instituted at various stages of the study to ensure quality data generation. The data was entered into Microsoft Excel, and checked to identify errors and/or omissions and corrective action made. The data was then validated and exported to Statistical Package for Social Sciences (IBM SPSS version 21 on windows 10, Illinois, USA) for data analysis.

3.19. Data Analysis

The Statistical Package for Social Sciences (IBM SPSS version 21 on windows 10, Illinois, USA) was used for the data analysis. Descriptive statistics such as frequencies, percentage and charts were employed to summarize the data. Pearson Chi-square test was employed to test for associations between respondent's variables and use of alcohol or tobacco. Statistical significance was assumed when *p*-value was less than 0.05 at 95% confidence level.

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CHAPTER FOUR

RESULTS

This chapter presents the results for the study and discusses the analysis for achieving the primary objectives of the study. The study involved a total of 400 Senior High School (SHS) students selected from the Business Secondary School, Vitting Senior High School, Ghana Senior High School, and Anbariya Islamic Senior High School all located in the Tamale Metropolis. The study incorporated students from Forms one (1), two (2) and three (3) from the selected schools. The main findings of the study are presented in tables and figures.

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4.1 Socio-demographic characteristics of study participants

Table 1 describes the age, sex, income, living history, class/form, ethnicity, religion, work history and source of income among the study participants. The age distribution of the study participants showed that the age characteristics ranged from 11-25 years and has completed information for the purpose of this study. Amongst the recognized age groups in the current study, it was observed that most of the study participants were within the age group of 16-20 years representing 86.3% (345), followed by those within the age group of 11-15 years constituting 7.0% (28) and lastly, 21-25 years representing 6.8% (27). In addition, among the age groups, the mean age was 17.9 (SD 1.80). With regards to the sex characteristics of the 400 study participants, it was found that more than half of the study participants were males with a frequency of 233 (58.3%).

Ethnicity wise, the study found that the majority (59.82% (239) of the participants were Dagombas or Other ethnic groups were also represented, including Hausa, Konkombas, Akan and Others with corresponding proportions of 8.0%(32), 4.8%(19), 3.0%(12) and 24.5%(98) respectively.

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The distribution of participants according to their religious affiliation showed that more than half of the participants were Muslims (75.5% (302)). Other religious affiliations included Christians and Traditional with proportions of 23.8% (95) and 0.5% (2) respectively.

On the work history of the participants, approximately 32.0% (128) of the study participants reported working aside schooling. It was also found that, more than half (81.3% (325) of the study participants received their source of income from their parents.

On the living history of study participants, it was observed that majority (40.8%) (163)) of them lived with both parents (mother and father) and those who lived with both parents and siblings constituted about 29.5% (118). Participants with single parenting constituting only mother or father recorded 13.8% (55) and 5.0% (20) respectively. Living alone, living with other relatives also recorded 1.3% (5) and 9.3% (37) respectively.

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Table 1a. Socio-demographic characteristics of study participants

Age (years)	Frequency(N=400)	Percentage (%)
11-15	28	7.0
16-20	345	86.3
21-25	27	6.8
Sex		
Male	233	58.3
Female	167	41.8
Daily Expenditure (Ghc)		
1.00-2.00	131	32.8
2.10-3.00	49	12.3
3.10-4.00	31	7.8
4.10-5.0	115	28.8
5.10>	74	18.5
Living History		
Only Father	20	5.0
Only Mother	55	13.8
Both Mother and Father	163	40.8
Both parents and siblings	118	29.5
Other Relatives	37	9.3
Living alone	5	1.3
Others	1	0.3
Class/level		
SHS1	193	48.3
SHS 2	109	27.3
SHS 3	98	24.5

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Table 1b. Socio-demographic characteristics of study participants

Variable		
Ethnicity	**Frequency(N=400)**	**Percentage (%)**
Dagomba	239	59.8
Hausa	32	8.0
Komkomba	19	4.8
Akan	12	3.0
Others	98	24.5
Work History		
Yes	128	32.0
No	272	68.0
Religion		
Christian	95	23.8
Muslim	302	75.5
Traditional	2	.5
Others	1	.3
Source of income		
Parents	325	81.3
Guardians	37	9.3
From working	16	4.0
Mother only	16	4.0
Father only	6	1.5

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4.2 Prevalence of alcohol and tobacco use among students

4.2.1. Prevalence of alcohol consumption among study participants

Out of the 400 study participants, it was observed that 29.8% (119) of the participants were involved in alcohol consumption as given in F**igure 3.**

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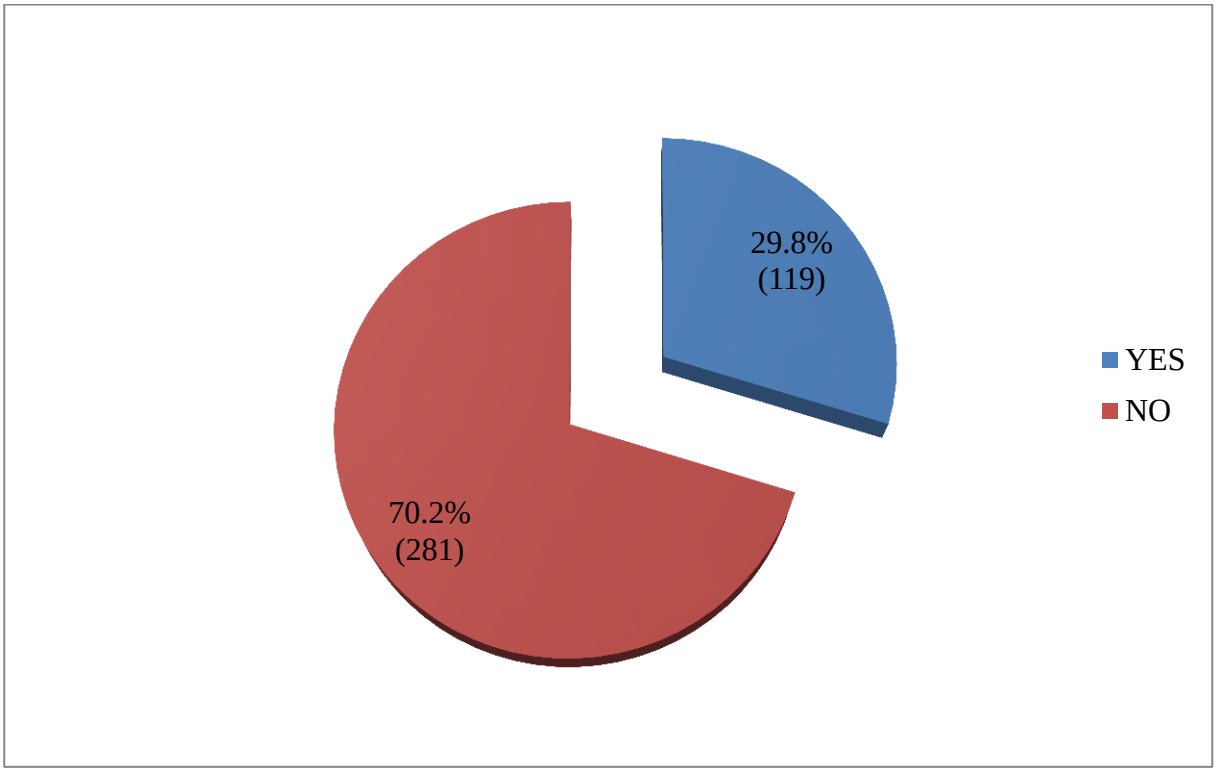

Figure3. Prevalence of alcohol use among study participants

Source, field data, 2019

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Prevalence of Alcohol Consumption among Males and Female Respondents

The proportion of participants involved in alcohol consumption with regards to sex is presented in Figure 4. Among the 119 participants who admitted taking alcohol, the data shows that the proportion of consumption among males 63.9 % (76/119) was higher than females 36.1% (43/119) who admitted taking alcohol.

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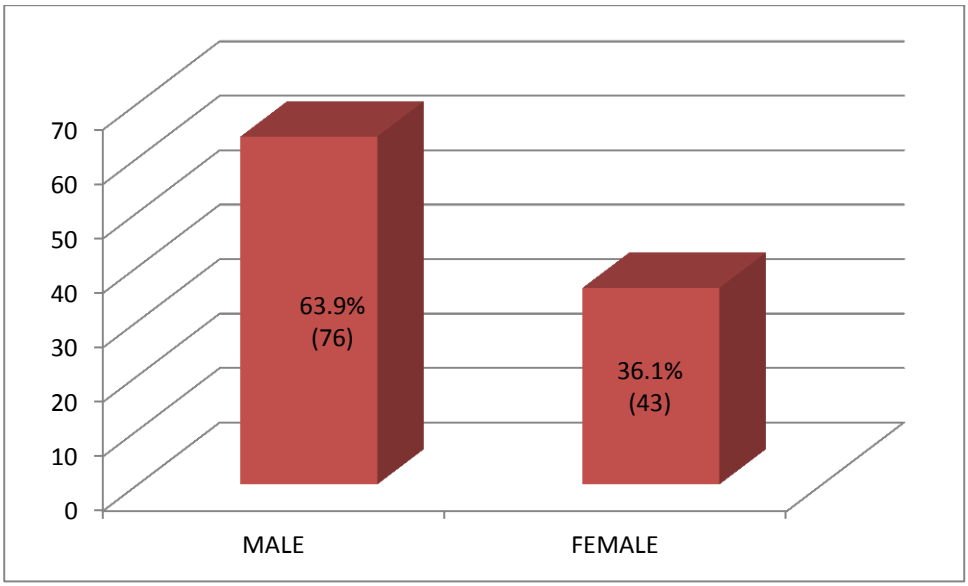

Figure4. Prevalence of alcohol use among male and female study participants

Age pattern of alcohol consumption among study participants

The proportion of participants involved in alcohol consumption according to age is shown in Figure 5. Among the 119 participants who admitted consuming alcohol, the data shows that the age range for alcohol consumption was from 11-25 years. Majority of the participants were among the 16-20yrs (84.0%), followed by 11-15yrs (8.4%) and 21-25yrs (7.6%), respectively.

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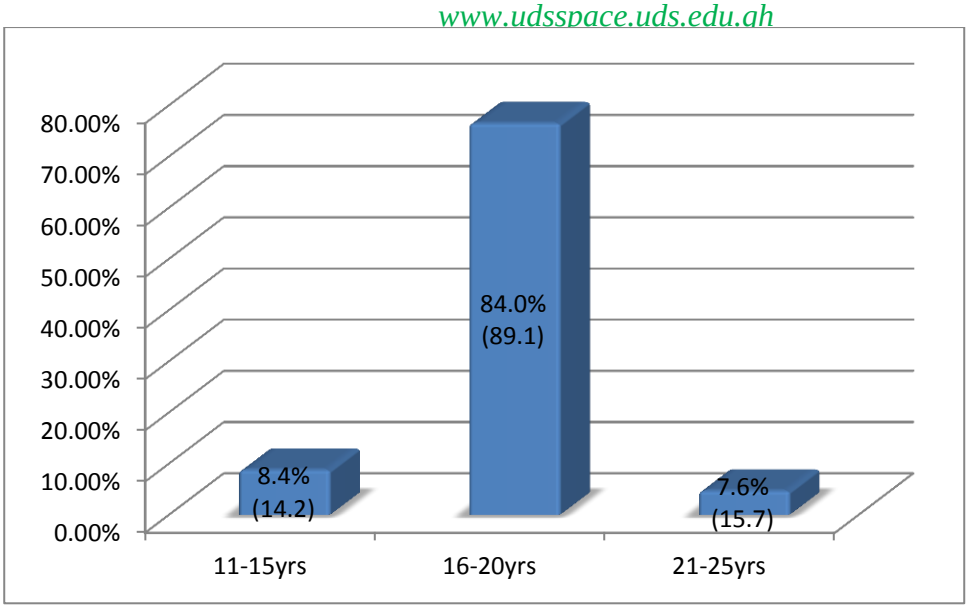

Figure 5: Age pattern of alcohol consumption among study participants

Pattern of Alcohol Consumption

Table 2 discusses the pattern of alcohol consumption among participants. To determine the intervals at which participants consume alcohol, it was observed that majority 44.6% (53/119) of the participants do consume alcohol occasionally, followed by 31.9% (38/119) of the participants who consume alcohol on monthly basis. 14.3% (17/119) of the participants also consume alcohol on weekly basis.

The number of drinks consumed per sitting showed that majority 82.4 % (98/119) of the participants do take one (1) drink of alcohol per sitting, followed by two (2) per sitting 14.3% (17/119) and three (3) per sitting 2.5% (3/119). 91.6% (109/119) of the participants knew someone who drinks alcohol.

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Table 2a. Pattern of Alcohol consumption among study participants,

Alcohol Users (n=119)		
Question	Response	Frequency (%)
How often do you take alcoholic beverages (palm-wine, Alomo, Kpokeke etc?	Once a week	17(14.3)
	Once a month	38(31.9)
	More than a month	11(9.2)
	Occasionally	53(44.6)
How many drinks do take in a sitting?	1 drink	98(82.4)
	2 drinks	17(14.3)
	3 drinks >	3(2.5)
Do you know someone who drinks alcohol?	Yes	109(91.6)
	No	10(8.4)
Total		119(100)

Source: Field data, 2019

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32.8% (39/119) of the participants had their neighbours as alcohol consumers, followed by Friend only 15.1% (18/119), Classmate only 14.3% (17/119), Relative only 10.9% (13/119), Classmate only 17(14.3% (17/119) and relative only 10.9% (13/119). Majority (57.1 %(68/119) of the participants indicated that they have reasons for taken alcohol and top two reasons for taken alcohol included; For fun 29.4 %(35/119) and for relaxation 24.4% (29/119). About 38.7%(46/119) of the alcohol consumers indicated that they took alcohol for the first time due to curiosity. 16.8% (20/119) of the alcohol consumers also indicated they took their first drink due to encouragement from friends and to get away from my problems.

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Another 16.0% (19/119) also indicated that they took their first drink through alcohol offers from parents and relatives.

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Table2b. Pattern of alcohol consumption among study participants

	Alcohol Users (n=199)	
Question	Response	Frequency (%)
Who is he/she to you?	Friend only	18(15.1)
	Classmate only	17(14.3)
	Parents only	8(6.7)
	Neighbor only	39(32.8)
	Teacher only	2(1.7)
	Relative only	13(10.9)
	Classmate/Teacher/ Neighbour	4(3.4)
	Friend/Classmate/Relative	2(1.7)
	Relative/Schoolmate/Classmate	5(4.2)
	Classmate/Neighbour/Teacher	2(1.7)
	Classmate/Relative/Teacher/Parent/Friend	2(1.7)
	None	7(5.9)
Any reason for drinking alcohol?	Yes	68(57.1)
	No	45(37.8)
	Not known	6(5.1)
Reason for drinking alcohol?	For fun	35(29.4)
	I like the good feeling	15(12.6)
	To Relax	29(24.4)
	To cope with stress	10(8.4)
	To be like my friends	2(1.7)
	Boredom	6(5.0)
	sad for myself	15(12.6)
	None	7(5.9)
Total		119(100)

Source: Field data, 2019

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Table2c. Reasons for Alcohol consumption among study participants

	Alcohol Users (n=119)	
	Response	Yes n=119 (%)
Reason for first drink of alcohol	Curiosity	46(38.7)
	Parents/Relative offer	19(16.0)
	Friends encouraged	20(16.8)
	To get away from my problems	20(16.8)
	To get drunk	9(7.6)
	I do not know	5(4.2)
Total		119(100)

Source: Field data, 2019

4.2.2. Prevalence of tobacco consumption among study participants

The overall prevalence of tobacco consumption was found to be 24.75% (99) out of the 400 study participants as shown **figure 6.**

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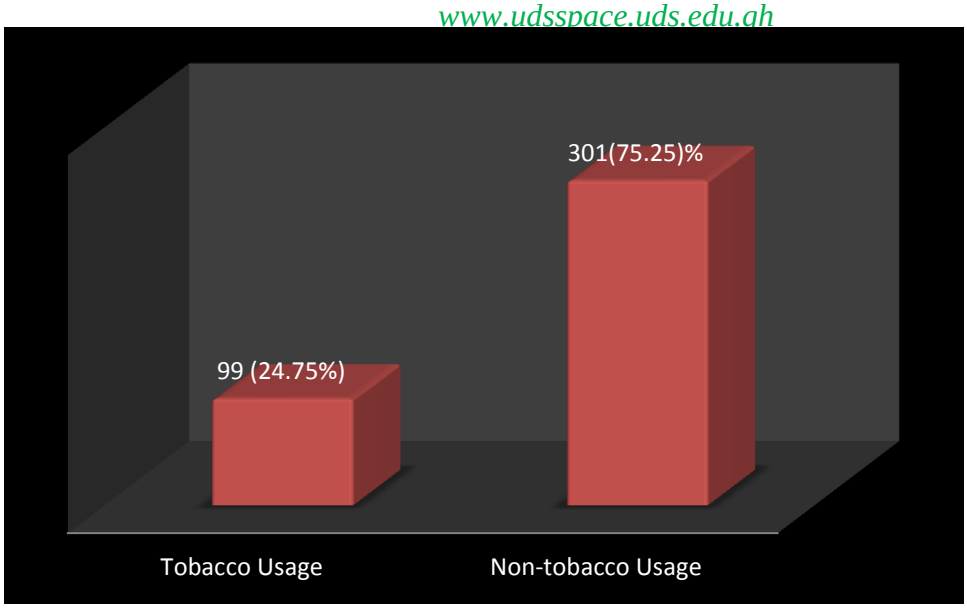

Figure 6: Overall prevalence of tobacco consumption. Source: field data, 2019.

Figure 7 presents the prevalence of the specific-tobacco product used among the study participants. Out of the 400 study participants, the crude prevalence of tobacco consumption was found to be 24.75 %(99). The various forms from which tobacco was used by study participants were as follows; smoking cigarette (containing tobacco) 34(8.5%), Chewed tobacco 20(5.0%), Used snuff made of tobacco 26(6.5%) and Used or smoked "bonto" (raw tobacco) 19(4.8%).

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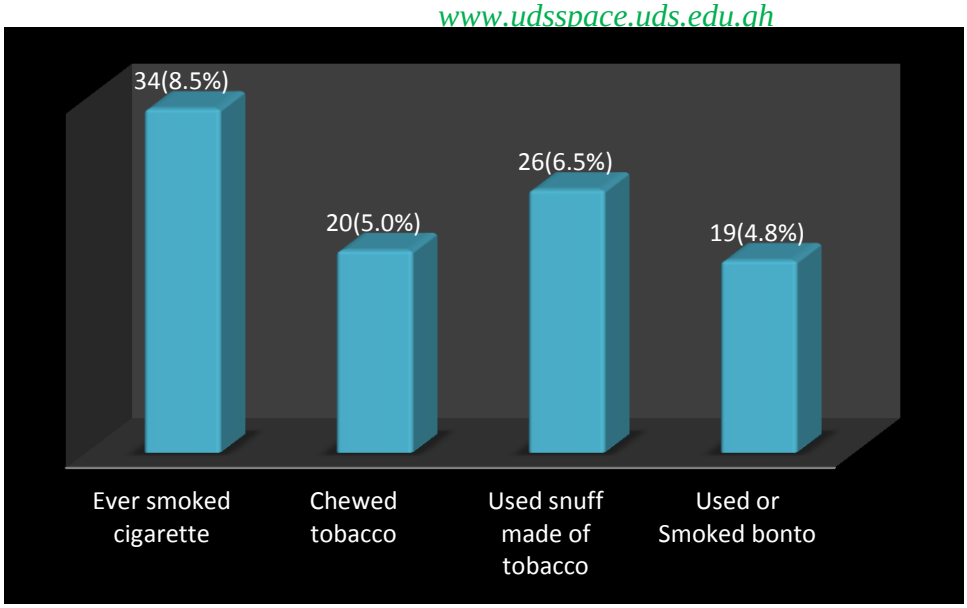

Figure 7: Prevalence of specific-tobacco product used among study participants

(Source: Field data among four senior high schools in Tamale Metropolis, 2019).

Cross-tabulation of Tobacco consumption among the sexes

Out of the 99(24.75%) participants who used tobacco, 74(74.75%) were males and 25(25.25%) were females. Among the sexes, it was observed that the proportion of male participants who smoke cigarette, chewed tobacco, snuffed tobacco and used/smoke bonto were 27(36.5%), 14(18.9%), 19(25.7%) and 14(18.9%) whereas the observed tobacco usage among female study participants were as follows; smoke cigarette 7(28.0%), chewed tobacco 6(24.0%), snuffed tobacco 7(28.0%) and used/smoke bonto 5(20.0%) as shown in **Table 3.**

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Table 3: Cross-tabulation of Tobacco Consumption among male and female study participants

	Tobacco Consumption (n=99)	
	Male(n=74)	Female(n=25)
Item	Frequency (%)	Frequency (%)
Smoke Cigarette	27(36.5)	7(28.0)
Chewed tobacco	14(18.9)	6(24.0)
Snuff tobacco	19(25.7)	7(28.0)
Used/smoke bonto	14(18.9)	5(20.0)
Total	74(100)	25(100)

Source: Field data among four senior high schools in Tamale Metropolis, 2019.

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Age pattern of tobacco consumption among study participants

The proportion of participants involved in tobacco consumption was found to be approximately 25.75% (99) out of the total 400 study participants. Among the 99 participants who admitted consuming tobacco, the data showed that the age pattern of tobacco consumption included 11-25 years. Majority of the participants who smoked, use snuff, chewed tobacco and ever used/smoked "bonto" were in the16-20 years age category with proportions of 76.5%(26/34), 69.2%(18/26), 70.0%(14/20) and 68.4%(13/19) respectively as shown in **Table 4.**

Table 4. Age distribution of tobacco consumption among the study participants

	Tobacco consumption (n=99)			
Age	Smoked cigarettes (%)	Usage of snuff (%)	Chewed tobacco (%)	Ever used/smoked "bonto" (raw tobacco) (%)
11-15	3(8.8)	1(3.8)	1(5.0)	1(5.3)
16-20	26(76.5)	18(69.2)	14(70.0)	13(68.4)
21-25	5(4.7%)	7(27.0)	5(25.0)	5(26.3)
Total	34(100)	26(100)	20(100)	19(100)

Source: Field data among four senior high schools in Tamale Metropolis, 2019.

Pattern of tobacco consumption among study participants

Table 5 describes the pattern of usage of the various forms (cigarette smoking, chewing of tobacco, snuffing of tobacco products and use/smoked bonto) by participants.

Out of the 34/400 study participants who smoke cigarette, it was observed that 23/34 (67.6%) consume one stick of cigarette per day, followed by 2 sticks per day 9/34(26.5%) and 2/34(5.9%) did not respond to the number of sticks consume per day. The study could not determine the number of tobacco chewed, snuffed as well as the use/smoking of the bonto. On the frequency of cigarette smoking, the following were observed; Daily smokers 5/34(14.7%), Occasional smokers23/34(67.6%) and none response constituted 6/34(17.6%). Additionally, the frequencies of chewing tobacco are Daily 7/20(35.0%), Occasionally 10/20(50.0%) and none response 3/20(15.0%). Similarly, the frequencies of snuffing tobacco are Daily 5/26(19.2%), Occasionally 14/26(53.8%) and none response7/26(27.0%) and smoked tobacco are Daily 5/19(26.3%), Occasionally 13/19(68.4%) and none response1/19(5.3%).

11/34(32.4%) of the participants smoked cigarette(s) on school premises and 14/19(73.7%) also smoked tobacco on the school premises as shown Table 5.

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Table 5 Pattern of tobacco consumption among study participants

Question	Cigarette smoking (n= 34) Frequency (%)	Chewed tobacco(n=20) Frequency (%)	Usage of snuff (n=26) Frequency (%)	Use/smoke "bonto" (n=19) Frequency (%)
Number of Sticks smoked/day				
1 stick per day	23(67.6)	-	-	-
2 sticks per day	9(26.5)	-	-	-
No response	2(5.9)	-	-	-
Frequency of cigarette smoking				
Daily	5(14.7)	7(35.0)	5(19.2)	5(26.3)
Occasionally	23(67.6)	10(50.0)	14(53.8)	13(68.4)
No response	6(17.6)	3(15.0)	7(27.0)	1(5.3)
Smoked cigarettes on school premises				
Yes	11(32.4)	-	-	14(73.7)
No	23(67.6)	-	-	5(26.3)
Total	34(100)	20(100)	26(100)	19(100)

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Environmental tobacco consumption

The environmental tobacco consumption looked at participants who consumed tobacco and their exposures to other persons who also consume tobacco and described in **Table 6**.

Out of the 34 study participants who smoke cigarette, 19(55.9%) knew of colleague(s) who also smoke cigarettes. 5(25.0%) out of the 20 study participants who chewed tobacco also knew of colleague(s) who also smoke cigarettes. 17(65.4%) out of the 26 study participants snuff tobacco also knew of colleague(s) who also smoke cigarettes and 16(84.2%) out of the 19 study participants who smoked tobacco indicated knowing colleague(s) who also smoke cigarettes.

Knowledge of colleague students who smoke 'bonto' among the various tobacco consumers are; cigarette smokers 18/34(52.9%), chewed tobacco 13/20(65.0), snuffed tobacco 16/26 (61.5%) and smoked tobacco 16/19(84.2%). Knowledge of other colleague students who applies snuff are cigarette smokers19/34(55.9%), chewed tobacco 14/20(70.0), snuffed tobacco18/26(69.2%) and smoked tobacco 14/19(73.7%).

It was also observed that majority of participants who consume tobacco also indicated that their fathers' were involved in tobacco consumption with observed proportions of cigarette smokers 8/34(23.5%), chewed tobacco 6/20(30.0%), snuffed tobacco 5/26 (19.2%) and smoked tobacco 6/19(31.6%) as shown in **Table 6.**

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Table 6. Environmental tobacco use

Question	Cigarette Smoking (n=34) Frequency (%)	Chewed Tobacco (n=20) Frequency (%)	Snuff Tobacco (n=26) Frequency (%)	Use/Smoke bonto (n=19) Frequency (%)
Do you know of a colleague(s) who smoke cigarettes?				
Yes	19(55.9)	5(25.0)	17(65.4)	16(84.2)
No	15(44.1)	11(55.0)	9(34.6)	3(15.8)
No response	-	4(20.0)	-	-
Do you know a student colleague who use or smoke 'bonto' ?				
Yes	18(52.9)	13(65.0)	16(61.5)	16(84.2)
No	16(47.1)	7(35.0)	10(38.5)	3(15.8)

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Do you know of a student colleague who chews tobacco?				
Yes	14(41.2)	16(80.0)	15(57.7)	16(84.2)
No	20(58.8)	4(20.0)	11(42.3)	3(15.8)
Do you know of a student colleague who applies snuff?				
Yes	19(55.9)	14(70.0)	18(69.2)	14(73.7)
No	15(44.1)	6(30.0)	8(30.8)	5(26.3)
Which of your relations smoke				
My father does	8(23.5)	6(30.0)	5(19.2)	6(31.6)
My mother does	0(0.0)	1(5.0)	1(3.8)	1(5.3)
My guardian does	2(5.9)	2(10)	1(3.8)	1(5.3)
None of my parent/ guardian smokes	24(70.6)	11(55)	19(73.1)	11(57.9)
Total	34(100)	20(100)	26(100)	19(100)

Source: field data, 2019 (Environmental Tobacco consumption).

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Participants' attitudes towards Tobacco Consumption

Table 7 presents a summary of attitudes and the association towards tobacco consumption for the 400 study participants who participated in the study. The varying forms of tobacco consumption were as follows; cigarette smoking 34/400 (8.5%), chewed tobacco 20/400 (5.0%), Snuffed tobacco products 26/400(6.5%) and use of "bonto" 19/400(4.75%).

From the results, it was observed that participants attitude on "once you start smoking, is it easy for the person to stop" was significantly associated with cigarette smoking p=0.007(9.987, 2) and chewing of tobacco p=0.001 (13.10, 2) with proportions of 44.1% (15/34) and 55.0% (11/20) indicating yes respectively. Additionally, participants attitude towards the allowance of cigarette smoking in public places, was found to be significantly associated with participants cigarette smoking p=0.001(32.119, 1) and participants chewing of tobacco p <0.001 (33.24, 1) with 85.3% (29/34) and 65.0% (13/20) indicating "No" respectively. It was also observed that teachers' tobacco use has influence on tobacco use among participants who chewed tobacco p= 0.025 (5.03, 1) with proportion a of 45.0% (9/20) indicating yes. Increasing the price of tobacco products p= 0.012 (6.24, 1) and tobacco industry deliberately encouraging the youth to use tobacco p= 0.017(5.65, 1) was found to be significantly associated with participants chewing of tobacco with proportions of 60.0% (12/20) and 50.0% (10/20) respectively.

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Table 7a: Participants' attitudes towards Tobacco Consumption

Question	Cigarette smoking (n= 34) Frequency (%)	P-value (X^2, df)	Chewed tobacco(n=20) Frequency (%)	P-value (X^2, df)
Is smoke from other people's cigarette harmful to health?				
Yes	25(73.5)	0.642(0.216, 1)	13(65.0)	0.202(1.63, 1)
No	9(26.5)		7(35.0)	
Once you start smoking, is it easy for the person to stop?				
Yes	15(44.1)	0.007(9.987, 2)*	11(55.0)	0.001 (13.10, 2)*
No	13(38.2)		7(35.0)	
No response	6(17.6)		2(10.0)	
Knowledge of risk from tobacco use				
Lung cancer	12(35.3)	0.718(3.695, 6)	6(30.0)	0.617(4.44, 6)
Heart disease	8(23.6)		7(35.0)	
Respiratory disease	7(20.6)		5(25.0)	
Lung Cancer/heart disease	2(5.9)		1(5.0)	
Lung Cancer/Respiratory Disease	3(8.8)		0	
Respiratory/heart diseases	2(5.9)		1(5.00)	
Should cigarette smoking be				

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allowed in public places?				
Yes	5(14.7)	0.019(5.500, 1)*	7(35.0)	<0.001 (33.24, 1)*
No	29(85.3)		13(65.0)	
Does teachers' tobacco use influence your tobacco use?				
Yes	9(26.5)	0.731(0.118, 1)	9(45.0)	0.025 (5.03, 1)*
No	25(73.5)		11(55.0)	
Which of the two groups of individuals have more friends?				
Boys who smoke	18(52.9)	0.184(7.532, 5)	13(65.0)	0.052(10.95, 5)
Girls who smoke	1(2.9)		1(5.0)	
Boys who do not smoke	6(17.6)		3(15)	
Girls who do not smoke	0.0		0	
Both boys and girls who do not smoke	5(14.7)		2(10.0)	
Don't know	4(11.8)		1(5.0)	
Policy or rule prohibiting tobacco use?				
Yes	21(61.8)	0.062(3.472, 1)	12(60.0)	0.112 (2.53, 1)
No	13(38.2)		8(40.0)	
Tobacco product advertising to be completely banned?				

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Yes	23(67.6)	0.054(3.734, 1)	13(65.0)	0.079 (3.09, 1)
No	11(32.4)		7(35.0)	
Price of tobacco products to be increased?				
Yes	24(70.6)	0.096 (2.777, 1)	12(60.0)	0.012 (6.24, 1)*
No	10(29.4)		8(40.0)	
Does tobacco industry deliberately encourage youth to use tobacco?				
Yes	21(61.8)	0.123(2.380, 1)	10(50.0)	0.017(5.65, 1)*
No	13(38.2)		10(10.0)	
Concerned about tobacco use?				
Very concerned	20(58.8)	0.747(0.583, 2)	8(40.0)	0.056(5.77, 2)
Somewhat concerned	3(8.8)		3(15.0)	
Not at all concerned	11(32.4)		9(45.0)	
Total	34(100)		20(100)	

Source; Field data, 2019. Note; * means statistically significant, df= degree of freedom, X^2 = Chi-square

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Table 7b: Participants' attitudes towards Tobacco Consumption

Question	Usage of snuff (n=26)	P-value (X^2, df)	Use/smoke "bonto" (n=19)	P-value (X^2, df)
	Frequency (%)		Frequency (%)	
Is smoke from other people's cigarette harmful to health?				
Yes	19(73.1)	0.647(0.210, 1)	15(78.9%)	0.82 (0.054,1)
No	7(26.9)		4(21.1%)	
Once you start smoking, is it easy for the person to stop?				
Yes	10(38.5)	0.141(3.916, 2)	12(63.2)	<0.001 (18.69,2)*
No	10(38.5)		5(26.3)	
No response	6(23.1)		2(10.5)	
Knowledge of risk from tobacco use				
Lung cancer	7(26.9)	0.473(5.573, 6)	5(26.3)	0.56 (4.9, 6)
Heart disease	8(30.8)		7(36.8)	
Respiratory	0.0		5(26.3)	

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disease				
Lung Cancer/heart disease	0.0		0.0	
Lung Cancer/Respiratory Disease	0.0		1(5.3)	
Respiratory/heart diseases	5(19.2)		1(5.3)	
Should cigarette smoking be allowed in public places?				
Yes	8(30.8)	<0.001(32.119, 1)*	6(31.6)	<0.001(24.56, 1)*
No	18(69.2)		13(68.4)	
Does teachers' tobacco use influence your tobacco use?				
Yes	12(46.2)	0.006(7.430, 1)*	9(47.4)	0.015(5.93, 1)*
No	14(53.8)		10(52.6)	
Which of the two groups of				

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individuals have more friends?				
Boys who smoke	12(46.2)	0.370(5.393, 5)	15(78.9)	0.002(19.21, 5)*
Girls who smoke	1(3.8)		0	
Boys who do not smoke	4(15.4)		2(10.5)	
Girls who do not smoke	1(3.8)		1(5.3)	
Both boys and girls who do not smoke	6(23.1)		1(5.3)	
Don't know	2(7.7)		0	
Policy or rule prohibiting tobacco use?				
Yes	20(76.9)	0.815(0.550, 1)	13(68.4)	0.497(0.46, 1)
No	6(23.1)		6(31.6)	
Tobacco product advertising to be completely banned?				
Yes	20(76.9)	0.659(0.194, 1)	12(63.2)	0.055(3.68, 1)

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No	6(23.1)		7(36.8)	
Price of tobacco products to be increased?				
Yes	19(73.9)	0.269 (1.219, 1)	13(68.4)	0.142 (2.12, 1)
No	6(23.1)		6(31.6)	
Does tobacco industry deliberately encourage youth to use tobacco?				
Yes	16(61.5)	0.173(1.853, 1)	11(57.9)	0.129(2.31, 1)
No	10(38.5)		8(42.1)	
Concerned about tobacco use?				
Very concerned	16(61.5))	0.447(1.611, 2)	10(52.6)	0.174 (3.49,2)
Somewhat concerned	3(11.5)		3(15.8)	
Not at all concerned	7(26.9)		6(31.6)	
Total	26(100)		19(100)	

Source; Field data, 2019 (Note; * means statistically significant, df= degree of freedom, X^2 = Chi-square)

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From Table 7, it was observed that participants attitude on "once you start smoking, is it easy for the person to stop" was significantly associated with smoking bonto <0.001 (18.69,2) and a proportion of 63.2% (12/19). Additionally, participants attitude towards the allowance of cigarette smoking in public places, was found to be significantly associated with participants usage of snuff <0.001(32.119, 1) and participants smoking bonto p <0.001 (24.56, 1) with 69.2% (18/26) and 68.4% (13/19) indicating "No" respectively. It was also observed that teachers' tobacco use has influence on tobacco use among participants who snuffed tobacco 0.006(7.430, 1) and smoked tobacco 0.015(5.93, 1) with proportions of 46.2% (12/26) and 47.4% (9/19) indicating yes respectively.

Participants acknowledgement of the two group thus boys, girls and both boys and girls having more friends was significantly associated with smoking of bonto at p=0.002 (19.21, 5) and a proportion of 78.9% (15/19) indicating boys who smoke.

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4.3.1 Attitudes and Perception of Alcohol Consumption

Table 8 discusses participants' attitudes and perceptions towards alcohol consumption. A cross-tabulation was performed to determine participants' (alcohol users) attitudes and perceptions towards alcohol consumption.

After a few drinks of alcohol, I would be more courageous; majority [61.3% (73/119)] of the respondents disagreed that after a few drinks of alcohol, they would be more courageous. This was followed by 23.5% (28/119) of the participants agreeing that after a few drinks of alcohol, they would be more courageous. 9.2% (11/119) and 5.9% (7/199) of the participants

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slightly disagreed and slightly agreed that after a few drinks of alcohol, they would be more courageous.

After a few drinks of alcohol, I am more likely to get into a fight with other people; 55.5% (66/119), representing majority of the participants disagreeing that after taken few drinks of alcohol one is more likely to get into a fight with other people. 16.8% (20/119), 5.9% (7/119) and 21.8% (26/119) also indicated slightly disagreed slightly agree and agreed that after taken few drinks of alcohol one is more likely to get into a fight with other people respectively.
After a few drinks of alcohol, I would be more likely to act sociable: About 44.5% (53/119) disagreed and 9.2% (11/119) slightly disagreed that after taken few drinks of alcohol one would be more likely to act sociable whereas 11.8% (14/119) and 34.5% (41/119) also slightly agreed and agreed that after taken few drinks of alcohol one would be more likely to act sociable respectively.

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Table 8a: Attitudes and Perception of Alcohol Consumption

Alcohol Consumption (n=119)		
Question	Response	Frequency (%)
After a few drinks of alcohol, I would be more courageous.	Disagree	73(61.3)
	Slightly Disagree	11(9.2)
	Slightly Agree	7(5.9)
	Agree	28(23.5)
After a few drinks of alcohol, I am more likely to get into a fight with other people	Disagree	66(55.5)
	Slightly Disagree	20(16.8)
	Slightly agree	7(5.9)
	Agree	26(21.8)
After a few drinks of alcohol, I would be more likely to act sociable	Disagree	53(44.5)
	Slightly Disagree	11(9.2)
	Slightly Agree	14(11.8)
	Agree	41(34.5)
Total		199(100)

Source: field data, 2019

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After a few drinks of alcohol, I would be more likely to talk to people more easily: 49.6% (59/119) and 5.9% (7/119) disagreed and slightly disagreed that after taken a few drinks of alcohol one would be more likely to talk to people more easily respectively. 16.0% (19/119) and 28.6% (34/119) also slightly agreed and agreed that after taken a few drinks of alcohol one would be more likely to talk to people more easily respectively.

After a few drinks of alcohol, I would be more likely to take risks: 47.9 %(57/119) and 5.0 %(6/119) disagreed and slightly disagreed that after taken a few drinks of alcohol one would be more likely to take risk respectively. 5.9% (7/119) and 41.2% (49/119) also slightly agreed and agreed that after taken a few drinks of alcohol one would be more likely to take risk respectively.

After a few drinks of alcohol, I would be more likely to miss a day at school: 36.1% (43/119) and 5.9% (7/119) disagreed and slightly disagreed that after taken a few drinks of alcohol one would be more likely to miss a day at school respectively. 5.9% (7/119) and 52.1% (62/119) also slightly agreed and agreed that after taken a few drinks of alcohol one would be more likely to miss a day at school respectivel

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Table 8 b: **Attitudes and Perception of Alcohol Consumption**

Alcohol Consumption (n=119)		
Question	Response	Frequency (%)
After a few drinks of alcohol, I would be more likely to talk to people more easily.	Disagree	59(49.6)
	Slightly Disagree	7(5.9)
	Slightly Agree	19(16.0)
	Agree	34(28.6)
After a few drinks of alcohol, I would be more likely to take risks.	Disagree	57(47.9)
	Slightly Disagree	6(5.0)
	Slightly Agree	7(5.9)
	Agree	49(41.2)
After a few drinks of alcohol, I would be to miss a day at school	Disagree	43(36.1)
	Slightly Disagree	7(5.9)
	Slightly Agree	7(5.9)
	Agree	62(52.1)
Total		199(100)

Source: field data, 2019

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4.4.1 Social demographic characteristics Associated with Alcohol and Tobacco consumption

In this study, bivariate analysis was carried out by using cross-tabulations in SPSS Version 21 program. The independent variable is cross-tabulated with dependent variables to examine the relationship between the two (2) variables. The strength of the relationship is tested by the X^2 value and the statistical significance of X^2 is tested by the p-value ($p<0.05$). The table shows the proportion of alcohol and tobacco usage in each respective group by Age, Sex, Class, Religion, Work History, Income and Ethnicity. Given the close association between the usage of alcohol and tobacco among the various age groups, it was observed that the highest proportion of study participants who consumed alcohol was among the age group of 16-20 years 84.03% (100).

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Table 9: Factors Influencing Alcohol and tobacco Use among study participants

	Cigarette Smoking (n=34)			Chewed Tobacco (n=20)		
Characteristics	Yes (%)	No (%)	p-value (X^2,df)	Yes (%)	No (%)	p-value (X^2,df)
Age						
10-15	3(10.7)	25(89.3)	0.130(4.073, 2)	1(3.6)	27(96.4)	**0.004(11.153, 2)***
16-20	26(7.5)	319(92.5)		14(4.1)	331(95.9)	
20-25	5(18.5)	22(81.5)		5(18.5)	22(81.5)	
Sex						
Male	27(11.6)	206(88.4)	**0.009(6.842, 1)***	14(6.0)	219(94.0)	0.274(1.195, 1)
Female	7(4.2)	160(95.8)		6(3.6)	161(96.4)	
Class/Form						
Form 1	15(7.8)	178(92.2)	0.534(1.256, 2)	7(3.6)	186(96.4)	0.238(2.870,2)
Form 2	8(7.3)	101(92.7)		5(4.6)	104(95.4)	
Form 3	11(11.2)	87(88.8)		8(8.2)	90(91.8)	

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Table 9b: **Factors influencing alcohol and tobacco use**

	Cigarette Smoking (n=34)			**Chewed Tobacco (n=20)**		
Characteristics	Yes (%)	No (%)	p-value (X^2,df)	Yes (%)	No (%)	p-value (X^2,df)
Religion						
Christian	7(7.4)	88(92.6)	0.197 (4.683,3)	6(6.3)	89(93.7)	**0.026(9.233, 3)***
Muslim	26(8.6)	276(91.4)		13(4.3)	289(95.7)	
Traditional	1(50.0)	1(50.0)		1(50.0)	(50.0)	
No response	0.0	1(100)		0.0	1(100)	
Work History						
Yes	18(14.1)	110(85.9)	**0.006(7.489, 1)***	12(9.4)	116(90.6)	**0.006(7.585,1)***
No	16(5.9)	256(94.1)		8(2.9)	264(97.1)	
Daily Average Income (GHC)						
1.00-2.00	5(3.8)	126(44.0)	0.133 (7.047, 4)	3(2.3)	128(97.7)	**0.037(10.228, 4)***

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2.10-3.00	5(10.2)	44(89.8)		3(6.1)	46(93.9)	
3.10-4.00	4(12.9)	27(87.1)		3(9.7)	28(90.3)	
4.10-5.0	10(8.7)	105(91.3)		3(2.6)	112(97.4)	
5.10>	10(13.5)	64(86.5)		8(10.8)	66(89.2)	
Ethnicity						
Dagomba	21(8.8)	218(91.2)	0.758(1.881, 4)	12(5.0)	227(95.0)	0.718(2.098, 4)
Hausa	3(9.4)	29(90.6)		3(9.4)	29(90.6)	
Komkomba	0(0.0)	19(100)		1(5.3)	18(94.7)	
Akan	1(8.3)	11(91.7)		0.0	12(100)	
Others	9(9.2)	89(90.8)		4(4.1)	94(95.9)	

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Table 10 discusses factors associated with the various forms of tobacco consumption among the study participants. A Pearson Chi-square analysis was performed to determine the factors associated with the of tobacco consumption. 233 males answered the question on smoking of cigarette, from the results, it was found that the males smoked cigarette (27/233 (11.6%)) more than the females (7/167 (4.2%)) and sex was associated with smoking p =0.009(6.842, 1).

Out of the 128 participants who indicated working apart from being a student, majority of cigarette smokers were noted to be working 18/128 (14.1%) as compared to the non-workers 16/281 (5.9). Working was found to be associated with smoking of cigarette at a p=0.006(7.489, 1). Age of participants was significantly associated with the chewing of tobacco p= 0.004(11.153, 2) with majority of the participants (14/345 (4.1%)) being in the 16-20 age brackets. Religion was noted to associated with the chewing of tobacco p=0.026(9.233, 3) with the majority of the participants found in the Muslim religion13/302(4.3%). Work history was found to be associated with chewing of tobacco at p= 0.006 (7.585, 1) with majority of the participants indicating working 12/128 (9.4) among the tobacco users. Daily average income was noted to be significantly associated with chewing of tobacco at p= 0.037(10.228, 4) with majority of the participants (8/74(10.8) earning above GHC 5.10.

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Age was found to be significantly associated with the use of Snuff and smoking of bonto at p<0.001(18.094, 2) and 0.002(12.134, 2) respectively. Majority of the participants were found in the 16-20 age brackets with proportions of 18/345(5.2%) and 13/345 (3.8%) respectively among participants who use snuff and smoke bonto respectively. Religion was found to significantly associated with the use of snuff and smoking of bonto at p <0.001(29.666, 3) and 0.027(9.171, 3) with majority of the participants being Muslims 20/302 (6.6%) and 14/302 (4.6%) respectively.

Working history was found to be significantly associated with snuffing and smoking of tobacco at p= 0.042 (4.140, 1) and p= 0.003 (8.900, 1) respectively with proportions of participants working 10.2% (13/128) and 9.4% (12/128).

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Table 10a: factors associated with the various forms of tobacco consumption among the study participants.

	Snuff use (n=26)			Smoke Bonto(n=19)		
Characteristics	Yes (%)	No (%)	p-value (X^2,df)	Yes (%)	No (%)	p-value (X^2,df)
Age						
10-15	1(3.6)	27(96.4)	**<0.001(18.094, 2)***	1(3.6)	27(96.4)	**0.002(12.134, 2)***
16-20	18(5.2)	327(94.8)		13(3.8)	332(96.2)	
20-25	7(25.9)	20(74.1)		5(18.5)	22(81.5)	
Sex						
Male	19(8.2)	214(91.8)	0.113(2.514, 1)	14(6.0)	219(94.0)	0.162(1.954, 1)
Female	7(4.2)	160(95.8)		5(3.0)	162(97.0)	
Class/Form						
Form 1	10(5.2)	193(94.8)	0.090(4.808, 2)	6(3.1)	187(96.9)	0.058(5.688, 2)
Form 2	5(4.6)	104(95.4)		4(3.7)	105(96.3)	
Form 3	11(11.2)	87(88.8)		9(9.2)	89(90.8)	

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Table 10b: factors associated with the various forms of tobacco consumption among the study participants.

Religion						
Christian	4(4.2)	91(95.8)	**<0.001(29.666, 3)***	4(4.2)	91(95.8)	**0.027(9.171, 3)***
Muslim	20(6.6)	282(93.4)		14(4.6)	288(95.4)	
Traditional	2(7.7)	0.0		1(50.0)	1(50.0)	
No response	0.0	1(100)		0.0	1(100)	
Work History						
Yes	13(10.2)	115(89.8)	**0.042(4.140, 1)***	12(9.4)	116(90.6)	**0.003(8.900, 1)***
No	13(4.8)	259(95.2)		7(2.6)	265(97.4)	
Daily Average Income (GHC)						
1.00-2.00	6(4.6)	125(95.4)	0.323(4.672, 4)	2(1.5)	129(98.5)	0.051(9.421, 4)
2.10-3.00	4(8.2)	45(91.8)		3(6.1)	46(93.9)	
3.10-4.00	3(9.7)	28(90.3)		1(3.2)	30(96.8)	
4.10-5.0	5(4.3)	110(95.7)		5(4.3)	110(95.7)	
5.10>	8(10.8)	66(89.2)		8(10.8)	66(89.2)	

Source; field data, 2019

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Table 10c: factors associated with the various forms of tobacco consumption among the study participants.

Ethnicity						
Dagomba	15(6.3)	224(93.7)	0.844(1.404, 4)	10(4.2)	229(95.8)	0.718(2.098, 4)
Hausa	3(9.4)	29(90.6)		4(12.5)	28(87.5)	
Komkomba	1(5.3)	18(94.7)		0.0	19(100)	
Akan	0.0	12(100)		0.0	12(100)	
Others	7(7.1)	91(92.9)		5(5.1)	93(94.9)	

Source; field data, 2019

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Factors Influencing Alcohol Use among study participants

Alcohol consumption and social demographic characteristics

Table 11 represent the factors associated with consumption of alcohol among the study participants. A Pearson Chi-square analysis was performed among alcohol consumers and their social demographic characteristics. From the results, it was observed that religion was significantly associated with the consumption of alcohol with p=<0.001(18.143, 3) with most of the alcohol consumers belonging to the Muslim religion 63.0 %(75). Equally, the ethnicity of the participants were found to be associated with the consumption of alcohol p= 0.002(17.293, 4) with most of the participants (45.5% (54) from the Dagomba ethnic group.

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Table 11: Factors Influencing Alcohol Use among study participants

Characteristics	Alcohol Consumption (n=119) Yes (%)	No (%)	p-value (X^2,df)
Age			
10-15	10(8.4)	18(6.4)	0.691(0.739, 2)
16-20	100(84.0)	245(87.2)	
20-25	9(7.6)	18(6.4)	
Sex			
Male	76(63.9)	157(55.9)	0.138(2.197, 1)
Female	43(36.1)	124(44.1)	
Class/Form			
Form 1	49(41.2)	144(51.2)	0.061(5.584, 2)
Form 2	32(26.9)	77(27.4)	
Form 3	38(31.9)	60(21.4)	
Religion			
Christian	42 (35.3)	53(18.9)	**<0.001(18.143, 3)***
Muslim	75(63.0)	227(80.8)	
Traditional	2(1.7)	0.0	
No response	0.0	1(0.4)	
Work History			
Yes	44(37.0)	84(29.9)	0.165(1.927, 1)

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No	75(63.0)	197(70.1)	
Daily Average Income (GHC)			
1.00-2.00	33(27.7)	98(34.9)	0.414(3.940, 4)
2.10-3.00	12(10.1)	37(13.2)	
3.10-4.00	9(7.6)	22(7.8)	
4.10-5.0	39(32.8)	76(27.0)	
5.10>	26(21.8)	48(17.1)	
Ethnicity			
Dagomba	54(45.5)	185(65.8)	**0.002(17.293, 4)***
Hausa	12(10.1)	20(7.1)	
Komkomba	9(7.6)	10(3.6)	
Akan	7(5.9)	5(1.8)	
Others	37(31.1)	61(21.7)	

Source; field data, 2019. Note; * significant association, df=degree of freedom

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Alcohol consumption and influences of other factors

Table 12 presents factors that are associated with participants' consumption of alcohol. A Pearson chi-square analysis was performed to determine the factors that are associated with alcohol consumption among the participants. From the results, peer pressure was found to be significantly associated with alcohol consumption at p< 0.001(10.248, 1) with 48.7% (58/119) of the participants indicating yes.

Having access to the mass media was found to be significantly associated with alcohol consumption at p= 0.041(4.157, 1) with majority (88.2% (105/119) of the participants having access to the mass media.

Alcohol advertisement was found to have significant influence on the consumption of alcohol at p=0.005 (7.969, 1) with majority 63.1% (73/119) of the participants indicating that they are influenced by advertisement of alcohol to consume alcohol.

The social media as a source of information on alcohol was found to be significantly associated with alcohol consumption at a p=**0.038 (4.311, 1) with about** 21.8% **(**26/119) of the participants indicating social media as their medium of information about alcohol.

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Table 12: Alcohol consumption and influences of other factors

	Alcohol consumption(n=119)	
	Frequency (%)	**p-value(X^2, d.f)**
What influences you to take alcohol?		
Peer pressure		
Yes	58(48.7)	**0.001(10.248, 1)***
No	61(51.3)	
Advertisement		
Yes	18(15.1)	0.301(1.068, 1)
No	101(84.9)	
Social media		
Yes	13(10.9)	0.161(1.968, 1)
No	106(89.1)	
Parental/sibling influence		
Yes	12(10.1)	0.084(2.991, 1)
No	107(89.9)	
Availability/accessibility to alcohol		
Yes	5(4.2)	0.087(2.934, 1)
No	114(95.8)	
Total	119(100)	

Source; field data, 2019.

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Table 12b: Alcohol consumption and influences of other factors

Alcohol consumption(n=119)		
Question	Frequency (%)	p-value(X^2,df)
Do you have access to the mass media?		
Yes	105(88.2)	**0.041(4.157, 1)***
No	14(11.8)	
Does alcohol advertisement influence you to drink alcohol?		
Yes	73(63.1)	**0.005(7.969, 1)***
No	46(38.7)	
Where do you get information on alcohol?		
Through friends/Peers		
Yes	22(18.5)	0.739(0.111, 1)
No	97(81.5)	
Through Advertisement		
Yes	68(57.1)	0.577 (0.312, 1)
No	51(42.9)	
Through Social media		
Yes	26(21.8)	**0.038(4.311, 1)***
No	93(78.2)	
None		
Which of the aspect of advertisement influence you to drink alcohol?		
Use of celebrities	30(25.2)	**0.013(12.739, 4)***
The musicals	24(20.2)	
The animation	7(5.9)	
Use of role models	13(10.9	
None	45(37.8)	
Total	119(100)	

Source: Field data, 2019.

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CHAPTER FIVE

DISCUSSION

5.0 Introduction

The aim of the study was to determine the prevalence of tobacco and alcohol use in senior high schools in the Tamale Metropolis by determining the prevalence of tobacco and alcohol use among senior high school students, assess the attitudes and perceptions of students' towards tobacco and alcohol use and finally examine the factors that influence tobacco and alcohol use among senior high school students in the metropolis. Accordingly, this section discusses the findings of the study in the areas of socio-demographic characteristics and its influence on alcohol and tobacco use, the prevalence of tobacco and alcohol, attitudes and perceptions of students' towards tobacco and alcohol use and factors that influence tobacco and alcohol use among senior high school students in the metropolis.

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5.1 Socio-Demographic Characteristics and Prevalence of Alcohol and Tobacco Consumption

The general demographic characteristics of study participants demonstrated an age distribution between 11-25 years, with a mean age of 17.88 and majority of the participants being males (58.3%). At the class/form basis of the study participants, the first years (48.3%) were highly represented paralleled with the second (27.3%) and third (24.5%) years respectively. The Dagomba ethnic group was the majority ethnic group (59.8%) and this finding is obvious as the Dagombas' are the largest ethnic group in the Tamale Metropolis. Again the study found that Muslims were more than half of the study participants (75.5%). This finding is not surprising as the Tamale Metropolis is Muslim dominated community (Ghana Statistical service, 2010). Emphasis must also be made that other religious groups

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such as Christians (23.8%) and Traditionalist (2.5%) were also acknowledged in the study. The presence of other religious groups in the study provides diversity and varying perspectives to alcohol and tobacco consumption among senior high students in the Tamale Metropolis (Ghana Statistical Service, 2010).

Apart from being a student, the study acknowledged the indication of some students working as well. Approximately 32.0% of the study participants reported working aside schooling. This could increase the risk and contribute to the consumption of alcohol and tobacco by most of the students. The working may serve as a source of extra income to some of these students, especially among students who are already consuming alcohol and tobacco. For example Wakefield et. al., (2008) and Mallie, (2012) mentioned that increment in alcohol and cigarette product excise taxes correspondingly increases the cost price, and consequentially decreasing cigarette consumption. However, this might not be the case for students who are already working and getting extra income, as they will be able to afford the price of both the alcohol and tobacco respectively from their earnings. Though the increment in prices of alcohol and tobacco will prevent most adolescents from consuming these substances, it will also be prudent to look at other effective measures such as the age restriction policies and school anti- alcohol and tobacco policies to effectively address the use of these substances among senior high school students.

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The prevalence of both alcohol and tobacco consumption among the students showed appreciable proportions with the observed prevalence rate of alcohol consumption being 29.8% and the observed prevalence rate of tobacco consumption being 24.75%. The various forms of tobacco consumption included smoking (34(8.5%), Chewed tobacco 20(5.0%), Snuff 26(6.5%) and Smoked “bonto” (raw tobacco) 19(4.8%). The study findings on alcohol consumption re-confirmed findings from other studies that also reported consumption of alcohol among senior high school students and adolescents in general with varying

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prevalence rates, depending on the sample size(s) involved in these studies. For instance, studies conducted among senior high school (SHS) students in Ghana and among nationally-representative samples of in- and out-of-school adolescents established that the prevalence rate of lifetime alcohol consumption was nearly 25 per cent (Adu-Mireku, 2003). Subsequently, another survey revealed that the prevalence of alcohol use among senior high school students was approximately 15.3 % with about 14.6 percent of the study respondents reported taking two or more drinks per day, (Doku, 2012). The current study also acknowledged that the majority of the study participants indicated taking 1drink per sitting (82.4%), with 2drinks (14.3%) and 3 or more drinks (2.5%). In another study conducted in a border town to the Northern Region, Kintampo, Nimako (2012) also observed a 25% prevalence rate of alcohol consumption among senior high school students in the Kintampo Municipality in the Bono East Region of Ghana.

On gender-wise consumption of alcohol, the study acknowledged a higher prevalence rate among male study participants. Out of the total 119 participants who admitted to, taking alcohol, the data shows that the proportion of consumption among males was 63.9 %. The current study finding corroborates with Nimako's (2012) observed prevalence rate of alcohol consumption in male senior high students (62%). The findings also re-establish the concept that females are less likely to consume substances (including alcohol and tobacco) paralleled with males (Mcfetridge, et. al., 2011; Mensah, 2016). Again, it has been maintained that males have a greater probability of becoming substance (including alcohol and tobacco) users is 3 times higher than that of females (UNODC, 2015). It is a common knowledge that males often take risky behaviours in our societies including alcohol consumption and could be a reason for the high prevalence of alcohol consumption among the male students' participants. Again, it is also acknowledged that the schools' environment can contribute to the use of substances (including alcohol and tobacco) use, together with belief and misconception

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among most students that the consumption of these substances could improve their academic achievements (WHO, 2000). Again, the WHO (2000) mentions that, the use and abuse of substances (including alcohol and tobacco) is higher among urban dwellers compared with rural settlers. This may partly explain the appreciable use of alcohol among the study participants, considering the current study settings, Tamale Metropolis, which is an urban centre; therefore coming by some of these substances (alcohol and tobacco) will be very easy.

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Alcohol use among senior high school students (who are often adolescents) is a solemn public health concern owing to possible medium to long term consequences for the health and safety of the individual as well as the number of related confrontational societal consequences (Woods, 2011; WHO, 2018). Other literature recognize that-, one in four persons between the ages of 12 and 20 consumes alcohol on a monthly basis, and a similar ratio of 12th graders consume 5 or more drinks in at a sitting at least once every two weeks (Newes-Adeyi et al., 2007). Alcohol use among senior high students has major consequences of both long and short term and therefore calls for strategies and policies to address alcoholism among students of levels, especially in the second cycle institutions. To reduce the prevalence of alcohol consumption among senior high students and for that matter, adolescents in general, there should be continuous and effective supervision for students who are often living away from home for the first time in their lives as well as the implementation of school anti-alcohol consumption.

5.2 Attitudes and perceptions of students' towards alcohol and tobacco use

Generally it was observed that there was significant associations with knowing that once an individual starts smoking, is it easy for the person to stop p=0.007 and chewing of tobacco p=0.001. Additionally, allowing of cigarette smoking in public places, was found to be significantly associated with participants cigarette smoking p=0.001 and participants chewing

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of tobacco p <0.001. It was also observed that teachers' tobacco use has influence on tobacco use among participants who chewed tobacco p= 0.025. Increasing the price of tobacco products p= 0.012 and tobacco industry deliberately encouraging the youth to use tobacco p= 0.017 respectively "Listen First-Listening to children and youth is the first step to help them to grow healthy and safe" (World Drug Day-2017), as a key approach towards addressing substance use and abuse among adolescents and for that matter, senior high school students, dictates a better understanding of adolescents' reasons for alcohol consumption is very essential in developing preventive and interventional programs. Therefore with the acknowledgement of attitudes and perceptions including taking alcohol to be courageous, sociable, to take risk more easily and to miss a day at school from the study participants should form the basis towards addressing alcohol consumption among students. The consumption of alcohol by adolescents has been associated with varying attitudes and perceptions including involvement risk-related activities such as smoking (Dennis-Antwi, (2003). It is also worth addressing the misconceptions with the intake of alcohol among adolescents that by creating awareness to rather increase information and knowledge of the harmful effects of alcohol use and abuse. With the evidence of increased access to the media, including television, frequency modulation (FM), mobile phones, among students and adolescents in the current study, there should be a deliberate attempt to target students and adolescents through these media to educate them on the undesired consequences of alcohol use such as cancer (Bowden, Delfabbro, Room, Miller, & Wilson, 2017). Again, consciousness about the association between alcohol and cancer remained protective against alcohol consumption among persons in the 14–17 age groups (Bowden, et. al., 2017).

Attitudes and perceptions towards tobacco consumption among the study participants demonstrated that there was a significant association between tobacco consumption and knowledge of the easiness of stopping smoking once started and smoking with a p-value of

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p= (0.007) and attitudes towards cigarette smoking in public places p= (0.019). With the majority (44.1%) of participants' among the tobacco smokers indicating that once you start smoking it is very easy to stop. This can result in the consumption of tobacco through experimentation with tobacco smoking or consumption in any form. Occasional experimental tobacco smoking among adolescents is recognized to considerably intensify the risk of adult smoking (Kanyoni et al., 2015) .Emphasis must also be made that once smoking has commenced, stopping becomes seemly difficult and a predictor for addiction (Pierce et al., 1996). It has been projected that if the current trend in tobacco smoking among adolescents continues, a lifetime of tobacco consumption would cause the deaths of 250 million children and young people alive today, of which majority of them will be in developing countries (World Health Organization 2012).

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Alcohol and tobacco consumption usually happen together (Kanyoni et al., 2015; Kelly et al., 2012). Hermand et al., (1995) submitted that several individuals, including non-smokers, smokers or alcoholics, recognize the pooled effects on the health of smoking and drinking as sub-additive. Once one substance (alcohol or tobacco) is previously used at a modest or high level, the ingestion of the other substance is estimated to have only a small incremental impact on health risk (Kabiru et al., 2010). This sub-additive model allows little similarity to what is projected on the basis of epidemiological studies. The health perils of combining drinking and smoking, predominantly the risk of cancer, are multiplicative (Corrao et al., 2000). Adolescent-alcohol and tobacco consumption adults are associated with a considerable burden of illness, injury (Hoof, Zanten, & Lely, 2013; Rehm et al., 2006) and major single known cause of non-communicable diseases (Toustad & Andrew-Johnston, 2006). Adu-Mireku (2003) revealed that 72.7% of Ghanaian senior high school students reported having initiated substance use by age 16 years. Doku (2012) added that substance use serve as access

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to risky sexual behaviours among the youth of Ghana which make them at risk of numerous diseases like STDs, cancers and so on.

5. 3. Factors that influence tobacco and alcohol use among senior high school students

First, the study considered that the sociodemographic characteristics and their associations with alcohol and tobacco consumption among the study participants. Among the socio-demographic characteristics were Age, Sex, Class, Religion, Work History, Income and Ethnicity. The socio-demographic characteristics of the study participants are important to this current study for the reason that, it allowed the researcher to discover significant and actionable understandings to the factors that influence alcohol and tobacco consumption among the study participants.

Secondly, the study considered that characteristics such as influences to drink (peer pressure, advertisement, social media, parental/sibling offer and availability of alcohol and tobacco), source of information on alcoholic beverages (advertisement, friends, and social media) and their associations with alcohol and tobacco consumption among the study participants. These characteristics are important to the current study for the reason that, it allowed the researcher to discover significant and actionable understandings to the factors that influence alcohol and tobacco consumption among the study participants in a more societal context. Peer influence, curiosity and a sense of growing and exercising freewill are the major reasons students use substances. Peer pressure, an age-old issue, remains one of the main predictors of adolescent substance use (Toumbourou et al., 2007). Peer pressure plays on the desire of wanting to be accepted by others. This desire makes saying ‘no’ particularly difficult due to fear of being laughed, teased, humiliated, rejected or even bullied (Mensah, 2016).

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5. 4. Socio-demographic factors that influence tobacco and alcohol use among senior high school students

Statistically, the study observed significant difference between alcohol consumption and age characteristics of the study participants (p-value= 0.002). However, there was no statistically observed significant association between tobacco consumption and age characteristics of the study participants. The observed significant difference in alcohol consumption and age is consistent with a similar study on substance abuse among junior high school students in Ghana by (Cofie, 2010). Adolescents, as a population cluster, combine sociocultural patterns that are appreciated in the environment in which they are incorporated. For example, alcohol consumption in adolescents is associated with specific-group behaviour and values of this age and may be swayed by peers, and regarded as an enabler and a prerequisite of collaboration and permanence within a group (Efigenia et al., 2015). The risk of adolescents beginning to consume alcohol rises because of their position in the social network of friends, and friends of friends (Gil-Lacruz et al., 2010; Mundt, 2011).

Though there was no observable significance between tobacco consumption and age of the study participants, it creates a frightening situation considering the age groups of persons involved in the consumption of tobacco 16-20 years (76.47%), 11-15 (8.82%) and 21-25 (14.71%). The observance of this finding could be explained partly, as a result of adolescents often being exposed to social environments (including peer pressure) where smoking is considered an acceptable Behaviour (Galanti et al., 2013). Therefore, creating an un-conducive environment for tobacco smoking may symbolize a fundamental approach towards avoidance and prevention (Kanyoni et al., 2015). Likewise, ensuring conventional environmental measures such as, increasing the selling prices and restrictions to sale also offer favourable cost-effectiveness to the prevention of tobacco consumption at early ages of ones' life (Asante et al., 2014).

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Also, with regards to the sex of study participants, there was no observable significant difference between sex and alcohol consumption. However it is common knowledge that males are more expected to drink alcohol compared to their female counterparts. This is suggestive that, male adolescents are more vulnerable in the use of alcohol paralleled with their female counterparts. Feng et al., (2016) submitted in the study that more than a quarter (24.3 per cent) of the male study participants and about 2.5% of the females study participants were involved in heavy episodic drinking, (which is well-defined as the ingestion of at least 60 grams (g) or more of pure alcohol on at least one occasion in the last 30 days (WHO, 2014).

Relatedly, the study found an observed significant association between sex and tobacco consumption among the study participants (p-value=0.009). A meta-analysis of smoking prevalence rate among Chinese adolescents presented high smoking levels among males with a rapid rise in female smoking amid 1981 and 2010 (Han et al., 2015). Estimated prevalence of smoking in sub-Saharan in 2010 was 14 %t in males and 2 %t in females. However studies on the prevalence rate of ever-smoked were 28.8 percent (95%t CI 25.3 to 32.3) among secondary school students in Zimbabwe. Again, the prevalence rates of ever-smoked among males (37.8 %) were significantly much greater than among females (18.5%) (Bandason et al., 2010).

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There was no significant association between alcohol and tobacco consumption by religion. However, on the religious affiliations of the study participants, the data set showed a majority of the participants who consumed both alcohol and tobacco were Muslims with proportions of (18.8 %) and (6.5%) respectively. The higher proportions of alcohol and tobacco consumption acknowledged among Muslims may be as a result of the study environment being dominated by Muslims and therefore becomes obvious that Muslims will record higher proportions on alcohol and tobacco consumption. The study found a significant difference

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between alcohol consumption and ethnicity (p-value= 0.002). The study confirms findings from a study that found an association between substance use and ethnicity (White et al., 2015). However, Mundt et. al., (2012) did not find a significant difference between respondents race/ethnicity, and substance use, including alcohol and tobacco use. The study did not observe significant association between alcohol consumption and work history of study participants, however, the study observed a significant association between tobacco consumption and work history (p-value=0.023). The evidence of some of the study participants working may contribute to the consumption of alcohol and tobacco.

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5. 5. Factors that influence tobacco and alcohol use among senior high school students

The results exhibited a significant relationship (p-value=0.014) between the consumption of alcohol and influences such as (peer pressure, advertisement, social media, parental/sibling offer and availability of alcohol and tobacco). Equally, among the influences, the study acknowledged that peer pressure is the major influencing factor (14.30%) in alcohol drinking which was immediately followed by alcohol advertisement constituting (4.5%) as an influential factor in alcohol consumption. Peer pressure influences have been recognized as a strong influential factor of open drunkenness (Kelly et al., 2012). Having very influential peers who are regular users of alcohol or tobacco is a predictor of alcohol use among adolescents. The social norm approach is a theory used to explain the influence of social norms on behaviour. Social norms refer to caregivers and peers. The theory states that human behaviours influenced by incorrect perceptions of how another member of our own social group thinks or acts (Kiburi, Molebatsi, Obondo, & Kuria, 2018). Applied to alcohol use among adolescents, an adolescent assumes that other adolescents attitudes towards alcohol are more accommodating than expected and that they assume that other adolescents consume more than what they really consume.

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In addition, the study recognized a statistical difference between alcohol consumption and alcohol advertisement with a p-value of p= 0.005. The study's observation on the source of information on alcoholic beverages through the advertisement of alcohol (17.0%) suggest that in constituting measures to reduce alcohol consumption among adolescents and senior high school students, there should be restrictions on the advertisements of alcoholic beverages. Again, there should also be a sponsored advertisement on the harmful effects of alcohol. This will go a long way to discourage adolescents and to larger extent adults from the consumption of alcoholic beverages. The study also showed the mechanisms employed to advertise alcohol also has an influence on the consumption of alcohol. It was observed that mechanisms such as the use of celebrities, musicals, role model and animations play a critical role in alcohol consumption (p-value= 0.013). Most of the participants who drink alcohol are influenced by the use of celebrities, and the use of musicals. To effectively deal with the prevention of alcohol consumption among students or adolescents, this mechanism (such the use of celebrities, musicals, role model and animations) should also be employed to discourage the use of alcohol among students or adolescents and larger extent adults. Advertising produces a significant role in supporting and advancing a cultural-environment in which alcohol consumption is recognized as customary and profiles adolescents' discernment and attitudes towards alcohol use (Saffer & Dave, 2006). Alcohol publicity plays an essential role in having to inspire adolescents to consumption alcohol (Saffer et al., 2006). For adolescents who have not commenced alcohol intake, the hopes" of these youths are influenced by a normative assumption about the teenage habit of drinking as well as in observing parents, peers and other role models and celebrities are on the various media to increasingly portray the use (Saffer et al., 2006; Kandel et al., 1992). A Significant effort in past studies observed that, the media which the youth are exposed to makes adolescents more vulnerable and increases the likelihood of experimenting alcohol use (Saffer et al., 2006). The

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media counting television, movies, billboards, and internet, are powerful conduits in stimulating alcohol use through eye-catching and fascinating modus. According to Saffer et al. (2006) there is a relationship between exposure to depiction of alcohol use on the media and positive alcohol consumption expectancies by adolescents.

Another revelation in this current study showed that there is a significant association between alcohol consumption and other influences (such as Peer pressure, Advertisement, Social media, Parental/sibling influence, and Availability/accessibility to alcohol) on other adolescents to drink (p-value= 0.030*). There is a higher proportion of other peers influencing others to drink 19.8%. The accounts in research conducted among older adolescents between the ages of 14 and 18 years with alcohol use disorders, presented substantially superior brain activation to alcohol beverage pictures that control youths, primarily in brain areas linked to reward, desire and positive effect (Tapert et al., 2003). Chen and Grube (2002) also emphasized that young people, having more positive emotional reactions to a substance called alcohol embrace more encouraging drinking expectancies, they observe a greater social appreciation for alcohol consumption. Most times, paying attention to advertising presupposes that the viewer is getting some reward or benefits from it, most basically that they are doing perceived right thing by consuming the advertised product (Tapert et al., 2003).

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Considering factors associated with tobacco consumption, the study found a significant relationship (p-value<0.001) between tobacco smoking and alcohol consumption. This is consistent with studies that acknowledge that the use of one substance may influence the other and also re-affirms the gate way theory. Drug use and abuse among adolescents is influenced by one substance facilitating as a ‘gateway’ for another, or through an underlying vulnerability to substance use in general, is unclear (White et al., 2015). The Gateway Theory theorizes that substance use commencement charts a chronological pattern, where the use of

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licit substances such as tobacco or alcohol lead to future risk of using marijuana, which in turn leads to future risk of using other illicit substances (Kandel, Yamaguchi & Chen, 1992).

Considering family smoking history among study participants, the study showed a significant difference between tobacco smoking and family tobacco smoking ($p<0.001$). It was found that among participants who smoke tobacco, the majority had their fathers' also smoking 23.5% with 5.9% indicating tobacco smoking among their siblings/relatives. Among participants who do not smoke, quite a significant proportion also indicated tobacco smoking among their fathers' 4.9 %, siblings/relatives 2.5% and mother 0.8% respectively. History of family influence associated with adolescent smoking have recognized in research cycles. Parent-smoking is recognized as a strong predictor of youthful smoking (Mashita, Themane, Monyeki, et al., 2011; Xie et-al, 2013). This assertion was confirmed by Wang et al.,2016). Wang-et-al-, (2016) observed a consistent indication that parent-smoking statistically influences their adolescents' current smoking behaviour, particularly adolescents having both parents smoking are at a greater current smoking risk than those having only one parent smoking. Brathwaite, et. al., (2015) also observed varying gender range of current smoking and attributed them to the existence of strong sociocultural values, customs and taboos which daunt females to smoke. Conversely, these sociocultural values may present smoking amongst males in some cultures as acceptable and appropriate, and as a pictogram of prominence and societal authority (Breet et al., 2018).

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Being present at entertainments where people smoke had a significant association between participants' tobacco smoking (p-0.001) with the most (58.8%) of the smokers indicating their presence at entertainments where people smoke. This may increase the risk and influence of one smoking. Measures and policies prohibiting individuals from smoking in public places should duly be enforced to reduce the influences of smoking. Research acknowledges policies such as tax increment on tobacco and its products, controlling the sale

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of tobacco to children and adolescents, and stringent implementation of tobacco bans at public places (Jha & Chaloupka, 2000). Studies described elsewhere have shown the relevance of anti-tobacco policies in reducing substantially, the prevalence rates of tobacco consumption (Wakefield, Durkin, Spittal et. al., 2008). In 2012 the Government of Ghana passed Public Health Act, Act 851, which stipulates comprehensive public health legislation in Ghana, and necessitates tobacco control measures such as the prohibition of smoking in public places, ban on tobacco advertising, health warning on tobacco packages, and minimum age restrictions (Mamudu, 2013). Influences related to youth-smoking intents in Ghana have revealed that intensely implementing smoking bans in schools have a protecting consequence on adolescents' present and future smoking (Wakefield et. al., 2000; Doku, Raisamo, & Wiium, 2012).

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CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0. Summary

The specific objectives which were addressed by the study included; to ascertain the level of tobacco and alcohol use among some selected students in some senior high schools in the Tamale Metropolis, the knowledge and perceptions of students towards tobacco and alcohol use, determine the factors that influence tobacco and alcohol use among senior high school students and to offer recommendations that could help minimize the usage of alcohol and tobacco amongst senior high students in the Tamale Metropolis.

A quantitative data collection method was used to collect the desired data from the study population. The findings of the study established the use of alcohol and tobacco among senior high students with prevalence rates of 29.8% and 8.5% respectively. Males were the majority in the consumption of alcohol and tobacco. Characteristics such age of a person, sex, religion, and ethnicity make one vulnerable to the use of alcohol and tobacco. Again other factors including peer pressure, advertisements, social media, availability, parental/relatives' influences, entertainment, and family history of smoking also contribute to students' consumption of alcohol and tobacco.

Findings also indicated that majority of the students are very much concerned about the use of these substances and therefore calls for proper school policies that will prohibit students from using alcohol and tobacco on school premises and to a larger extent, the larger community.

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6.1. Conclusion

The study highlights the importance of implementing policies intended to prevent substance (alcohol and tobacco) use at very early ages of life, targeting both in/out of school children. Generally, the observed prevalence of alcohol consumption was high and a relatively low prevalence of tobacco consumption among the four schools paralleled with other studies. However, the rate of the use of alcohol and tobacco still remains a major public health concern and needs urgent measures to prevent it use among students and adolescents in general.

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6.2. Recommendations

Based on the findings of this study, the researcher makes the following recommendations.

1. Ghana Education Service should implement early preventive measures at the school levels and in the general populace. The laws on restriction and prohibitions on the acquisition of these substances should, as a matter of urgency be implemented to reduce or prevent alcohol and tobacco as well as other substance use.
2. The study acknowledged the role of peer influences on the use of alcohol and tobacco among students and adolescents. Ghana Education service to adopt and implement the use of peer groups as an educational tool to prevent alcohol and tobacco use, will be of service in the fight against the useful substances in general.
3. The study also acknowledged that most of the information alcohol and tobacco were sourced from varying media, including advertisements, social media, and peers. The ministry information and entertainment sectors together with parents should monitor and implement preventive measures to the use of these substances and also employ such media in spreading messages to target students or adolescents to prevent substance use.

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4. Ghana Education service should include a better education on the perceptions (such as taking alcohol and tobacco to be courageous, sociable etc.) should be instituted to manage the misconceptions students hold about the use of substances in general.
5. Finally, Ghana Education Service to implement programs on substance use and abuse, which could be incorporated in the curriculum or extracurricular activities of students to better inform on the dangers of the use of substances including alcohol and tobacco.

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6.3. Implication for further Public Health Research

Addressing the use and abuse of substances (including tobacco and alcohol) in the general populace and especially among school-going children should be of public health concern to everyone, as the adverse health and social harms associated with their use have the potential for the spread of infectious diseases such as Human Immune Virus (HIV) and leading to other un-desirable consequences. Therefore a better understanding of the perceptions and attitudes held by all walks of life is a key step towards addressing substance use and abuse. Future research should therefore, focus on;

1. Out of school prevalence of the use and abuse of substances (including alcohol and tobacco use.
2. The effect of school substance use and abuse policies and student perceptions of enforcement on school substance use prevalence

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PARTIAL FULFILMENT OF THE REQUIREMENTS.

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LETTER OF INTRODUCTION

Huzematu Abdul-Karim

This is to introduce to you, ***Huzematu Abdul-Karim***, a Master of Public Health student of School of Medicine and Health Sciences of the University for Development Studies. Huzematu is a second year master of public health student and is currently working on her project titled: '**Prevalence of Tobacco and Alcohol use in Senior High Schools in the Tamale Metropolis**.' Huzematu want to have access to your school and students to help her carry out this important academic exercise. I would be grateful if you could grant her access to your school and students and any other information she may need to strengthen the quality of her work.

Thank you.

Dr. Yidana Adadow
SENIOR LECTURER H O D
. DEP. OF COM. HEALTH & FAM MED
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Yidana Adadow *(PhD)*
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21/01/2019

Office of the Head

The Headmaster
Vittin Senior High School
Tamale

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QUESTIONNAIRE NO: ……..

NAME / SCHOOL CODE: ……...

DATE OF INTERVIEW: ……..

Dear Respondent,

I am a final year postgraduate student at the University for Development Studies (UDS). I am conducting a research on the topic **"PREVALENCE OF TOBACCO AND ALCOHOL USE IN SENIOR HIGH SCHOOLS IN THE TAMALE METROPOLIS."** The purpose of the study is purely academic and is to determine the prevalence of tobacco and alcohol use in senior high schools in the Tamale Metropolis.

Remember your answers will be kept confidential

You have been given a copy of questionnaire and a pencil. Please use the pencil to tick the answers provided corresponding to the questions. If you make a mistake, carefully erase/rub out the pencil marks that were made incorrectly and then tick the answer you now choose. Please do **not** write your name or your school name on the questionnaire sheets given to you. Your information is confidential.

INSTRUCTIONS

Please answer all the questions. **PLEASE TICK (√) OR WRITE WHERE APPROPRIATE IN THE BOX FOR ANSWER.**

When you have completed the questionnaire please return it to the supervisor.

Thank you very much for participating.

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Questionnaire.

1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

Code	Questions	Response
1	What is your age? Write age in years in the box provided	……
1a	Sex	Male 1 [ ] Female 2 [ ]
1b	Form	SHS 1 1 [ ] SHS 2 2 [ ] SHS 3 3 [ ]
1c	Religious Denomination	Christian 1[ ] Muslim 2 [ ] Traditional 3 [ ] No Religion 4 [ ] Other, specify 10
1d	Ethnicity	Hausa 1 [ ] Dagbani 2[ ] Mossi 3 [ ] Other, specify 10
1e	With whom do you live with?	only father 1 [ ] only mother 2 [ ] both father and mother 3 [ ] both parents and siblings 4 [ ]

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		other relatives 5[ ] living alone 6 [ ] others specify……....10
1f	What is your father's occupation?	No work 1 [ ] Teacher 2 [ ] Farmer 3 [ ] Civil servant 4 [ ] Self-employed 5 [ ] Transport worker 6 [ ] Others specify.....10
1g	What is your mother's occupation?	No work 1 [ ] Civil servant 2 [ ] Trader 3 [ ] Teacher 4 [ ] Self-employed 5 [ ] Farmer 6 [ ] Others specify.....10
1h	Where do you get your pocket money from?	Parents 1[ ] Guardians 2[ ] From working 3[ ] Gifts 4[ ] from mother only 5[ ] From father only 6[ ] Others, specify 10

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1i	How much do you spend on average as pocket money?	Please specify in the box provided……10
1j	Do you also work apart from being a Student?	Yes 1 [ ] No 2 [ ]
	ALCOHOL USE	
2a	Have you taken any alcoholic drink like beer, wine, palm wine or liquor before?	Yes 1 [ ] No 2 [ ]
2b	How many drinks/cups of alcohol do you take per sitting	1 drink per sitting 1 [ ] 2 drinks per sitting 2 [ ] 3 drinks per sitting 3 [ ] 4 drinks per sitting 4 [ ] 5 or more drinks per sitting [ ]
2c	At what age did you take your first alcoholic drink?	……..
2d	How often do you take alcoholic drink?	At least once a week 1[ ] At least once a month 2[ ] Less than one a month 3[ ] Others, specify 10
2e	Do you know someone who drinks alcohol?	Yes 1 [ ] No 2 [ ]
2f	If yes, who is he/she to you?	Friend 1 [ ] School mate 2 [ ] Classmate 3 [ ] Parent 4 [ ]

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		Relative 5 [ ] Neighbor 6 [ ] Teacher 7 [ ] Other Specify …… ….10
2g	Are you aware that some of your Colleague students drink alcohol?	Yes 1 [ ] No 2 [ ]
2h	Do you have any reason for drinking alcohol?	Yes 1 [ ] No 2 [ ] Not known 3 [ ]
2i	If yes to Q2h, what is the main reason?	To have fun 1[ ] I like the feeling 2 [ ] To relax 3[ ] To cope with stress 4 [ ] To be like my friends 5 [ ] I am bored 6 [ ] I feel sad for myself 7 [ ]
2j	Why did you take your first drink?	Curiosity 1[ ] Parents or relative offer 2 [ ] Friends encouraged me 3 [ ] To get away from my problems 4[ ] To get drunk 5 [ ]

EFFECTS OF ALCOHOL USE

For the set of question in this section, indicate how many times this has happened to you

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while drinking in the last year.		
3a	After a few drinks of alcohol, I would be more likely to be courageous.	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
3b	After a few drinks of alcohol, I am more likely to get into a fight with other people (friends, relatives, strangers)	Disagree 1[ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
3c	After a few drinks of alcohol, I would be more likely to act sociable	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
3d	After a few drinks of alcohol during class sessions, I am more likely to go to school drunk or hig	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
3e	After a few drinks of alcohol, I would be more likely to talk to people more easily.	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
3f	After a few drinks of alcohol, I would be more likely to take risks.	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ]

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		Agree 4[ ]
3g		
3h	After a few drinks of alcohol, I would be more likely to miss a day at school	Disagree 1 [ ] Slightly Disagree 2[ ] Slightly Agree 3[ ] Agree 4[ ]
FACTORS INFLUENCING ALCOHOL USE		
4a	Generally, What influences you to drink?	Peer pressure 1 [ ] Advertisement 2 [ ] Social media 3 [ ] Parental/sibling influence 4 [ ] Availability/ accessibility to alcohol 5[ ] None 6 [ ]
4b	What do you think influences other adolescents to drink?	Peer pressure 1 [ ] Advertisement 2 [ ] Social 3 [ ] Media 4 [ ] Parental/sibling influence 5 [ ] Availability/ accessibility

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		to alcohol 6 [ ] None 7 [ ]
4c	Where do you usually get information on alcoholic beverages from?	Advertisement 1[ ] Friends and peers 2 [ ] Social media 3 [ ] Other, specify .....10 None 4 [ ]
4d	Do you have access to the mass media?	Yes 1 [ ] No 2 [ ]
4e	If yes to Q4d, what are your main media sources?	Television 1 [ ] Radio 2 [ ] Billboards 3 [ ] Magazines 4 [ ] Mobile phone 5[ ] Other, specify.....10
4f	Does alcohol advertising encourage you to use alcohol?	Yes 1 [ ] No 2 [ ]
4g	If yes to Q4f what aspects of advertisements encourage you to drink?	Use of celebrities 1[ ] Musical 2 [ ] Animation 3[ ] Role models 4 [ ] Other, specify 10
TOBACCO USE		

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5a	Have you ever smoked cigarettes?	Yes 1[ ] No 2[ ]
5b	How many sticks do you take per	1 stick per day 1 [ ] 2 sticks per day 2 [ ] 3 sticks per day 3 [ ] 4 sticks per day 4 [ ] 5 or more sticks per day 5[]
5b	Have you ever smoked cigarettes on school premises during the past year?	Yes 1[ ] No 2[ ]
5c	Do you now smoke cigarette daily, occasionally, or not at all?	Daily 1 [ ] Occasionally 2[ ] Not at all 3[ ]
5d	Have you ever chewed tobacco in the course of the year?	Yes 1 [ ] No 2 [ ]
5e	Have you ever applied snuff in the course of the year?	Yes 1[ ] No 2 [ ]
5f	Have you ever chewed tobacco on school premises during the past year?	Yes 1 [ ] No 2 [ ]
5g	Have you ever applied snuff on school premises during the past year?	Yes 3 [ ] No 4 [ ]
5h	Do you now chew tobacco daily occasionally or not at all?	Daily 1 [ ] Occasionally 2 [ ] Not at all 3 [ ]

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5i	Do you now apply snuff daily occasionally or not at all?	Daily 1 [ ] Occasionally 2 [ ] Not at all 3 [ ]
5j	Have you ever smoked 'bonto' (raw tobacco)?	Yes 1 [ ] No 2 [ ]
5k	Have you ever smoked 'bonto' on school premises during the past year?	Yes 1 [ ] No 2 [ ]
5l	Do you now smoke 'bonto' daily occasionally or not at all?	Daily 1 [ ] Occasionally 2 [ ] Not at all 3[ ]
5m	Do you know of a student colleague who smokes cigarettes outside the school or within the school premises?	Yes 1[ ] No 2 [ ]
5n	Do you know of a student colleague who smokes 'bonto' outside the school or within the school premises?	Yes 1 [ ] No 2 [ ]
5o	Do you know of a student colleague who chews tobacco outside the school or within the school premises?	Yes 1 [ ] No 2 [ ]
5p	Do you know of a student colleague who applies snuff outside the school or within the School premises?	Yes 1 [ ] No 2 [ ]

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ENVIRONMENTAL TOBACCO SMOKE.		
6a	Does any of your parent/guardian smoke in your presence?	My father does 1 [ ] My mother does 2 [ ] My guardian does 3 [ ] None of my parent/ guardian smokes 4[ ]
6b	Do your friends smoke while you are in their company?	Yes 1[ ] No 2 [ ] My friends do not smoke 3 [ ]
6c	Have you attended any entertainment occasion during which people have smoked freely?	Yes 1[ ] No 2 [ ]
KNOWLEDGE ON IMPACT OF TOBACCO USE ON HEALTH.		
7a	Do you think that smoke from other people's cigarettes is harmful to your health?	Yes 1 [ ] No 2 [ ]
7b	Once you start smoking, is it easy for the person to stop?	Yes 1 [ ] No 2 [ ] Don't know. 3 [ ]

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7c	What health risk results from tobacco use?	Lung cancer 1[ ] Heart disease 2[ ] Respiratory disease 3[ ] Others specify……10
ATTITUDE AND PERCEPTION OF STUDENTS TOWARDS TOBACCO AND ALCOHOL USE.		
8a	Do you think cigarette smoking should be allowed in public places?	Yes 1[ ] No 2 [ ]
8b	Do you think teacher tobacco use influences your tobacco use now or in the future?	Yes 1 [ ] No 2 [ ]
8c	Which of the two groups of individuals have more friends?	Boys who smoke 1 [ ] Girls who smoke 2 [ ] Boys who do not smoke 3[ ] Girls who do not smoke 4[ ] Both boys and girls who do not smoke 5[ ] Don't know 6[ ]
8d	Do you think schools should have a policy or rules specifically prohibit tobacco use among students on school premises?	Yes 1[ ] No 2 [ ]

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8e	Do you think schools should have a policy or rule specifically prohibiting tobacco use among school personnel on school premise?	Yes 1[ ] No 2[ ]
8f	Do you think schools should have a policy or rule specifically prohibiting tobacco use among school staff and teachers on school premises?	Yes 1[ ] No 2[ ]
8g	Do you think tobacco product advertising should be **completely** banned?	Yes 1 [ ] No 2 [ ]
8h	Do you think that the price of tobacco products should be increased?	Yes 1 [ ] No 2 [ ]
8i	Do you think the tobacco industry deliberately encourages youth to use tobacco?	Yes 1 [ ] No 2[ ]
8j	How concerned are you about tobacco use among the youth in your community?	Very concerned 1[ ] Somewhat concerned 2 [ ] Not at all concerned 3 [ ]

THANK YOU ONCE AGAIN.

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