Practices of Substance abuse and Risky Sexual Behavior

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ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY STUDENTS

BY TADESSE GEDEFA MEKONNEN

A THESIS SUBMITTED TO THE DEPARTMENT OF PSYCHOLOGY

SCHOOL OF EDUCATIONAL SCIENCE AND TECHNOLOGY TEACHERS EDUCATION

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER

OF ARTS IN SOCIAL PSYCHOLOGY

DECEMBER, 2013

ADAMA-ETHIOPIA

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DECLARATION

I, Tadesse Gedefa Mekonnen, hereby declare that this thesis is my own work. It is being submitted for the partial fulfillment of the degree of Master of Arts degree in social psychology to the Department of Psychology at Adama Science and Technology University that it had not been submitted before for any other degree or examination in any other university. All sources I have used or quoted have been indicated and acknowledged by complete references.

_____   _____

Name and Signature   Date

This Thesis has been submitted to the department of psychology under my approval as university Advisor.

_____   _____

Advisor's Name and Signature   Date

DEDICATION

This research thesis is dedicated to my father, Ato Gedefa Mekonnen Nagawo, and my mother, W/ro. Asnakech Jebessa Jilcha, who showed me the values of education without learning. You are the most prominent in my life.

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TABLE OF CONTENTS

LISTS OF TABLES

CONTENTS   **PAGE**

ACRONYMS AND ABBREVIATIONS

AIDS   Acquired Immunodeficiency Syndrome

ASTU   Adama Science and Technology University

EPHA   Ethiopian Public Health Association

FHAPCO   Federal HIV/AIDS prevention and Control Office

HEIs   Higher Education Institutions

HIV   Human Immunodeficiency Virus

MoE   Ministry of Education

MoH   Ministry of Health

MoY   Ministry of Youth

UNFP   United Nations Population Fund

UNDP   United Nation Development Program

PPS   Probability Proportionate to Sample size

SPSS   Statistical Package for Social Sciences

UN   United Nations

W H O   World Health Organization

ABSTRACT

The purpose of this research was to assess the practices of substance abuse and risky sexual behavior among Adama Science and Technology University (ASTU) students in the academic year of 2012/13. A total of 447 respondents were selected to fill the questioners by using stratified, systematic and random sampling. From the total respondents only 426 (95.3%) were completed the questioner correctly and the analyses of results were based on 426 respondents. The results were analyzed by using descriptive statistics such as frequencies and percentage, and inferential statistics such as chi-square (χ^2) and binary logistic regression. Informal interview with five key respondents were also conducted for triangulation of results. The finding of the study reviled that the overall prevalence of substance abuse among ASTU students were about 43.9%. The most commonly abused substances were alcohol (35.7%), khat (20.2%), Cigarette (15%) and hashish/shisha (9.2%) in decreasing order. Further, The study revealed that prevalence of substance abuse was statistically significant with previous place of residence, gender and school attended before joining the university while no significant relationship with current place of residence. There was no statistically significant association between the first practices of sexual intercourse and any of the selected demographic variables while risky sexual behavior was statistically significant with previous place of residence and gender. Likewise, risky sexual behavior was statistically significantly higher for respondents who abuse hashish/shisha and other illegal substances than none abusers in their life time. In addition, practice of inconsistent condom use was statistically significant with current alcohol consumption, khat, shisha/hashish and other illegal substances except cigarette smoking. Based on the findings of the result, recommendations were made on behavioral, structural and biomedical intervention.

CHAPTER ONE

INTRODUCTION

1.1.   BACKGROUND OF THE STUDY

Substance abuse is the most major persistent problem facing many people nowadays. It has been existed and practiced by all societies across the world (UN, 2011). However, their abuse may come at the cost of various psychological, social and economic problems in the societal level in general, while the individual abuser may face with different risky behaviors of which youths have been the most vulnerable age groups (Yigzaw et.al, 2005; Hibret et al, 2007).

According to the United Nations Office on practices of substance abuse, UN (2011) document, substance abuse have been worsened by complex psycho-social and behavioral challenges such as unemployment, poverty, crime, unwanted pregnancy and sexual assault. Despite of its psycho-social and behavior challenges, substance or drug dealers have been forcing young people into taking substances so that once they are addicted, they further influence their friends into taking substances. As a result these problems have been overwhelming many families and communities across nations (ibid).

On the other hand, young people particularly those aged 15-24 years are generally at high risk of behavioral problem including substance abuse practices and risky sexual behavior due to their developmental stage (Hibret et al., 2007; Ram & Arvind, 2012). For instance, Madu and Matla (2003) revealed that, many youths seem to think of experimentation with substance abuse as an acceptable part of transition into adulthood. Only few take seriously the negative consequences of substances dependency.

Likewise, different literature suggests that there are many reasons why young people are at high-risk group with respect to practices of substance abuse. However, Steven et al. (2011) have identified two reasons. The first reason could be individual reasons which include age, genetics, psychological health and freedom of life. In line with this, most college and university students are young in their age and it is the time when to start abusing substances because of curiosity and other personal factors (ibid). In the same document Steven et al. further stresses that university life, with its significantly high opportunities for autonomy and self-governance, provides a vital new milieu in which students learn to manage their sexual relationships and their sexuality.

The second reason according to Steven et al. could be social reasons. Social reasons may be peer pressure, tradition, availability and stressful life events. For instance, Windle et al. (2008) have identified three types of peer pressure - direct, self-sustaining and over estimation of peer pressure which may occur during adolescence especially during university and college life. Direct peer pressure, according to Windle et al. (2008), is direct encouragement of young people to abuse substance through verbal communication while self-sustaining peer pressure - meaning that relationships with friends who have similar mind (similar thinking habit) can encourage group members to act similarly and refuse to accept change in respect to practices of substance abuse (ibid). Over estimation of peer pressure occurs when adolescents consistently and significantly overestimate the prevalence of their peers abusing substance. Such type of peer pressure is mostly common among university student (ibid).

World Health Organization (2007) also explains that adolescents who spend more time with peers who abuse substances are more likely to engage in similar behavior. As a result, adolescents who encircle themselves with peers who consistently engage in deviant behavior put

themselves at much greater risk for personally engaging in deviant behavior (ibid). This is also very common among university students.

In addition to practices of substance abuse, students of higher institutions are also assumed to be exposed to many risky sexual behaviors (WHO, 2007). Multiple sexual partners, unprotected sexual intercourse, engaging in sex with older partners and non-regular partners such as commercial sex workers are the most common risky sexual behavior in the university/ college (HEIs Partnership Forum, 2012). For instance, Caron and Halteman (1993) revealed that students of higher education institutions practice sexual behavior due to their age and environment. According to Caron and Halteman, one-third of freshmen students have had sexual intercourse with at least two new partners since arriving at campus due to practices of substance abuse in university or college. If this is a pattern that persists throughout higher education institutions, at least one-third of university freshmen students are at high-probability for acquiring risky sexual behaviors (ibid).

Likewise, survey was conducted on practices of substance abuse and its predisposing factors in Addis Ababa and in three public universities from 2005-2011 across Ethiopia (HEIs partnership Forum, 2012). All categories of respondents agreed that the problem of practices of substance abuse and its predisposing factors was becoming increasingly serious in the country. For instance, study done in Addis Ababa University showed that about 25.7% of respondents had multiple sexual partners (Nugussu et al, 2009). Similarly another study finding from Haramaya University showed that 38% had sexual intercourse with a commercial sex worker without using a condom (Tariku et al, 2012).

Therefore, in a situation where consistent endeavor is sought to break the vicious circle of practices of substance abuse and risky behavior among higher education students, conducting such an ongoing empirical research appears to be trying the hard way which rewards both individual and societal progresses. It is not important to undermine the urgency of the problem to take effective measure for intervention. Hence the purpose of this research is to assess the current practices of substance abuse and risky sexual behavior among Adama Science and Technology university students.

1.2.   RATIONALE FOR THE STUDY

The study is very important for the following reasons: The expansion of un-conducive surrounding environment such as bars, shisha houses, khat houses, brokers (students who are engaged in sex negotiation trader), modernity and others around ASTU compound seems increasing. The miracle is that the spearheads for such a practice of abuse are students (boys and girls) in a university who rely on such substances as khat, alcohol, narcotics and others. The other reason is that as cost sharing allows some students to have some money, there is opportunity to rent a house outside of the campuses and this may increase the probability to access students for substances (abused substances) and to practice risky sexual behavior. Additionally, non- café and non-dormitory life styles may also another reason to engage in this misbehavior.

Different stakeholders including ASTU's higher health center are trying their best to discourage students from using substances and practices of un-safer sax, yet their efforts seem to be ineffective. Instructors are reporting that some of the students who abuse substances do not perform well in their studies because of absence from the class. Others drop-out from their study.

This adds to the number of unemployment and even unhealthy youth development. This unhealthy youth development further leaves unbearable scar on socio-economic development of the country.

Therefore, with the increasing number of sellers and users of addictives, it is not a mere assumption to underline the hard blow the country will face if current practices are not tackled through ongoing empirical research to take effective measure for specific intervention.

1.3.   STATEMENT OF THE PROBLEM

Substance abuse and risky sexual behavior remains the most persistent challenges among youths. Different literature reviled that, many student abuse substances and acquires risky sexual behavior during their stay at campus due to their propensity to engage in exploratory behavior and their needs for peer social approval and false sense of non-vulnerability (WHO, 2007; Hibret et al., 2007 & HEIs partnership Forum, 2013). In addition, different international researches revealed that practices of substance abuse among university students have been associated with unplanned sexual activity, physical and sexual assaults, criminal violations, poor academic performance, and cognitive impairment and relational issues which may vary according to demographic characteristics and local context (Hibret et al., 2007 & UN, 2009).

Despite the fact that the problem is serious among university students, most of the research conducted in Ethiopia addressing practices of substance abuse and risky sexual behavior tends to focus primarily on high school and out-schools youth population. In addition, even though there was similar study on the practices of substance abuse and risky sexual behavior, it is very important to measure the current magnitude of the problem to take effective intervention.

Therefore, this research is intended to fill the gap by expanding available research in order to implement more effective prevention programs.

1.4.   RESEARCH QUESTIONS

This study was planned to study the practices of substance abuse and its associated sexual risk behaviors among higher education institutions. Therefore, the study was intended to answer the following research questions.

I.   What is the current prevalence of substance abuse in Adama Science and Technology University?

II.   What are the types of substances abused by ASTU students?

III.   What are the factors that cause students to abuse substances?

IV.   Is there a relationship between practices of substance abuse and selected demographic variables (gender, previous place of residence, school attended and current place of residence) among ASTU students?

V.   Is there a relationship between risky sexual behaviors and selected demographic variables (gender, previous place of residence, school attended and current place of residence) among ASTU students?

VI.   Is there a relationship between substance abuse and risky sexual behavior among Adama science and Technology University students?

1.5.   OBJECTIVES OF THE STUDY

The main objective of this study is to assess the current prevalence of practices of substance abuse and its associated risky sexual behavior among Adama Science and Technology University students. Specifically, the study is to:

- Asses the current prevalence of substance abuse among ASTU students

- Identify the type of abused substances among ASTU students.

- Identify the reason of substance abuse among ASTU students.

- To determine whether there is a relationship between substance abuse and selected demographic variables (gender, previous place of residence, school attended and current place of residence) among ASTU students.

- To determine whether there is a relationship between risky sexual behavior and selected demographic variables (gender, previous place of residence, school attended and current place of residence) among ASTU students.

- To determine the relationship between substance abuse practices and risky sexual behavior among ASTU students.

1.6.   SIGNIFICANCE OF THE STUDY

This study has the potential to make significant contributions to the literature on substance abuse and risky sexual behavior among university students. First and for most, the result of this study may be beneficial to various stakeholders' which is governmental or nongovernmental organizations working on practices of substance abuse and risky sexual behavior intervention in the study area. Therefore, it is intended to add the existing body of knowledge to the existing literature.

In addition, the study provides information about the current prevalence of the practices of substance abuse and its contribution to risky sexual behavior among higher education institutions particularly among ASTU students. Secondly, the outcome may help to design effective and appropriate intervention strategies on risk reduction method and promotion of sexual health

among youth in the designated study area and similar set ups by giving clear explanations for different stakeholders for interventions. The study may also help to provide base line information for further research as a reference.

1.7. LIMITATION

It is assumed that higher education institution students join the university from different back ground, and this may determine the practices of substance abuse and risky sexual behavior. For this reason, it may be difficult to generalize the findings of this study to other similar settings.

The second limitation of this study is that, as one of the traditional methods used to measure the prevalence of substance abuse in a population is a survey based on random sampling of the population, however, there are some types of substances which often cannot be assessed reliably by this method, notably rarer and/or more stigmatized or problematic patterns of substance abuse, such as injecting drug or heroin addiction (Cress Well, 1994). Thus, all students might not give genuine answers to the questions they were asked.

The other limitation of this research is that self-reported information is subjected to reporting errors, missed values and biases. Therefore other alternative strategies are needed to complement the information obtained from population for this research.

1.8. SCOPE OF THE STUDY

This study was delimited to Adama Science and Technology University (ASTU) main campus undergraduate regular students who were registered for 2012/13 academic year. ASTU was chosen because of the proximity of the researcher to the study site, the experience of the researcher in the study area and resource limitation. All undergraduate regular students were

included except postgraduate, extension, summer, distance education students. This was because of their nature of their class attendance. Furthermore students with hearing and seeing impairments were also not included because of the nature of the questionnaire designed to carry out the study.

1.9. OPERATIONAL DEFINITIONS OF KEY TERMS

The following operational definitions were given for the key terms used in this research process. All the definitions for the key terms were adapted from World health organization definitions.

Substance: Any non-medical drugs that affects the way people feel, think, see, and behave. Due to its chemical nature, substance affects physical, mental and emotional functioning. It can enter the body through chewing, inhaling, smoking, drinking, rubbing on the skin or injection.

Substances abuse: the uses of any non-medical drugs (substances) by study subjects (such as alcohol, khat, tobacco, hashis/shisha and other illegal substances) to alter their mood or behavior.

Illegal/legal substances: In this study illegal substances refer to the substances that the government regards as harmful to the mental and physical well being of the individual, hence controlling or discouraging their consumption by law. Legal substances refer to those such as alcohol, Khat and tobacco that are potentially dangerous but whose consumption the government allows.

Risky Sexual behavior: In this study risky sexual behavior is defined as one of the following: Not using condom (inconsistent use of condoms), having multiple sexual partner, starting sex before age 18 years and sex with commercial sex workers.

CHAPTER TWO

2. REVIEW OF RELATED LITRATURE

In this chapter, literature relating to practices of substance abuse and risky sexual behavior is discussed. The review focus on the historical background of the practices of substance abuse, types of substances abused among adolescents, causes for practices of substance abuse, inter-relationships of substance abuse with risky sexual behavior, stages of substance abuse involvement and prevalence of substance abuse in higher education institution. In addition, the gaps identified and theoretical perspective (guiding principles) for this research and final conclusion for the reviewed related literature is made.

2.1. HISTORICAL BACKGROUND OF SUBSTANCE ABUSE

Different literature shows that substance abuse has a long history of human kind. For many centuries, it was seen as a religious experience, as providing creative inspiration, self-medication and/or recreation, with little or no moral condemnation or social control (Bennett and Holloway, 2009). Medicinal use of cannabis in China and the chewing of coca leaves for energy and strength in South America for example have been documented as dating back several thousand years (Asare, 2009). Throughout history, the use of alcohol, cocaine and opium was unexceptional among people of all classes and backgrounds, including great poets, writers, artists and medical professionals and until the 1960s most known 'addicts' in Britain were 'professionals' (doctors, dentists and pharmacists) who had direct access to the substances (Bennett and Holloway, 2005; Davenport and Hines, 2004). In the eighteenth and first half of the nineteenth century, Britain had a well-established and commercial opium trade primarily with Turkey and imported stocks of opium and associated paraphernalia that was distributed throughout pharmacies around the country (Strang and Gossop, 2005). Alcohol has played and

continues to play an important role in many civilizations around the world (Lloyd, 2010). The use of substances throughout history was seen as normal, and there was very little if any moral judgment of it. It was only later that health and social concerns leading to medicalisation and then a criminalization of substance abuse transpired.

2.2. TYPES OF SUBSTANCES ABUSE AMONG ADOLESCENTS

It is believed that healthy young people are the precious resource and manpower, which will bring the country to sustainable development. Despite this fact, the young people are at high risk of acquiring different mal behavior due to the biological, social and physical changes (Hibret et al., 2007). Most of this high risk comes from individual's behaviors and ways of living. Although young people in general are often perceived as constituting a 'risk group' because of lack of comprehensive knowledge and susceptibility towards experimentation with risk behaviors (Ibid).

Young people's abuse both legal and illegal substances. Legal substances are socially acceptable psychoactive substances (Miranda, 1987; William & Parry, 1998), and include over the counter and prescription medicines. This includes substances such as alcohol, cigarette and khat. Illegal substances are prohibited and the abuse, possession or trading of these substances constitute a criminal offence (Miranda, 1987). These substances include cocaine, heroin, ketamine, cannabis, morphine, methaqualone (Mandrax), opium, flunitrazipam (Rohypnol), methamphetamine and Wellconal (Craig & Baucum, 2001; Miranda, 1987; William & Parry, 1998).

According to Ministry of health (2003), the common drugs/substances of abuse among adolescents in Ethiopia include Alcohol, tobacco, khat, hashish, shisha, cannabis, cocaine, heroin, benzene sniffing and other prescribed drugs.

Alcohol abuse is linked with the socio-cultural life of Ethiopia. According to Peter Hammond (2006), its abuse in Africa is largely due to ignorance and increased efforts in its advertisement. In the same document Peter explains that psychiatric complications such as Delirium Tremens, alcoholic hallucinosis, Alcoholic Paranoia, Wernicke's encephalopathy and Korsakoff's psychosis occur due to alcohol abuse. But unfortunately, many do not receive psychiatric attention.

Cigarette is smoked, chewed or ground into small pieces and inhaled as snuff. Nicotine is the addicting agent of tobacco. The most probable harmful components in the smoke from burning tobacco are nicotine, carbon monoxide and tar (Davison et al., 2004). Cigarettes discolor teeth, affect skin color and make breath, body and clothes smell unpleasant. In addition to that, smoking increases heart rate, constricts blood vessels, irritates the throat and deposits foreign matter in sensitive lung tissues, thus limiting lung capacity (Cicchetti, 2007; Miranda, 1987). Years of smoking can lead to premature heart attacks, lung and throat cancer, emphysema, and other respiratory diseases. Even moderate smoking shortens a person's life by an average of 7 years (Craig & Baucum, 2001).

Cannabis is the main narcotic substances of abuse (WHO, 2007). Its cultivation is on the increase and Morocco remains the World's largest producer. According to Peter (2006), the plant grows wild throughout most tropical and temperate regions of the World. Prior to the production of synthetic fiber, the cannabis plant is Cultivated for the tough fiber of its stem (ibd). He identified three illicit substances that are produced from cannabis are *Marijuana, hashish and cannabis Oil*. The producers of cannabis are small scale farmers while the distributors are young people from urban centers (WHO, 2007). The consumers represent the youth and adults from different strata of the economic ladder. However the traffickers are people who are well established with lots of

connections. The production of cannabis may be related to unemployment and the fact that it is a profitable activity with a better economic reward than the traditional crops (WHO, 2007).

According to Peter (2006) explanations, *Marijuana* is the leaves and flowering tops of the cannabis plant that are dried to produce a tobacco-like substance that is smoked. *Hashish* consists of (Peter, 2006), Tetrahydrocannabinol (THC)-rich resinous material of the cannabis plant which is collected, dried and then compressed into balls, cakes, or cookie-like sheets. Pieces are then broken off, placed in pipes and smoked. Marijuana contains known toxins and cancer causing chemicals (WHO, 2007). Some of the effects of Marijuana use include palpitations, reddening of the eyes, impaired concentration and hunger (Peter, 2006; WHO, 2007). Long term chronic use is associated with a motivational Syndrome characterized by apathy, impairment of judgment, memory and concentration and loss of interest in personal appearance and pursuit of personal goals (WHO, 2007).

2.3. STAGES OF SUBSTANCE ABUSE INVOLVEMENT

In developing an understanding of substance use, and the reasons for it, it is useful to know something about the sequential nature of involvement in drug abuse. Accordingly, substance abuse involvement tends to follow a typical sequence (Johnston, 1998). People do not just start smoking marijuana or using heroin that is very rare. The sequencing tends to follow a pattern, which is not invariant, but 80 to 90 percent of all the youngsters who abuse substances fit this kind of pattern. According to Johnston, they start either with alcohol or tobacco and usually go on to the other one. The widely recognized as a next step in substance-use progression is marijuana use, but less widely recognized as an early step is the use of inhalants, which are used mostly among younger adolescents.

2.4. PREVALENCE OF SUBSTANCE ABUSE

Different literature shows that, the prevalence of substance abuse varies considerably from region to region and even from country to country throughout the world. According to WHO (2011) reports, there are many different factors for the varying levels of prevalence's of substance abuse. The consumption level among adults and their attitude towards substance abuse is one factor that affects substance abuse among youths. Another may be the magnitude of information and preventive efforts. WHO further stresses that the availability, not only in physical terms but also in financial terms, is another factor. Other, less substance-related, factors sometimes mentioned in this respect include the general level of health awareness in a population and the social and economic structures and conditions of individual societies (WHO, 2011).

A study conducted by Digambar, Mohan and Prashant (2011) shows that alcohol and tobacco are most commonly used substances throughout the world. Other substances that can be used are Ganja (Cannabis), Cocaine, Inhalants, Hallucinogens, Sedatives, Tranquilizers and intravenous substances (drugs). WHO (2011) report shows that cannabis is the second most widely abused substances in all parts of the world, with an estimated 141 million people (or 2.4 per cent of the world's population). According to this report, in particular, large numbers of young people experiment with cannabis: as high as 37 per cent (one time use over the past year) of school children and young adults in some countries.

A study conducted in Haromaya University shows that, among 725 participants, 390 (53.8%) have used at least one substance in their lifetime (Andualem, 2011). Alcohol (41.7%), khat (30.3%), cigarette (11.3%) and illicit drugs (3.9%) were the most commonly used substance among Haramaya university students (Ibid). Of the total respondents (Andualem, 2011), 243 (33.5%) had sexual experience in their lifetime. In the same document, Andualem further states

that abuse of khat, alcohol and cigarette was significantly and independently associated with risky sexual activities.

Another study conducted at Hawassa University (HU) shows that alcohol (10.0%), cigarette (3.3%), Khat (6.8%) and shisha (2.2%) (HU, 2011) were the most commonly abused substance in decreasing order. The study further stresses that students are engaged in risky sexual behavior with no difference between high school and university in its extent. In the same year another study conducted on the magnitude of substance use among Mekele University students were 20.1% (Kidan, 2011). The commonly abused substances were alcohol 16.6% followed by khat 14.8% and cigarette and cannabis each were abused 8.8 %. In the same research, Kidaan (2011) identified that substances abuse in males were two times higher than female respondents. In addition, those who started to abuse substance through peer pressure were 15 times more likely to abuse substances as compared to those who did not.

2.5. SUBSTANCE ABUSE VERSUS RISKY SEXUAL BEHAVIOR

According to Duke (2012), association between substance use and risky sexual behaviors has often been discussed from two main theoretical perspectives. One argues that both risky sexual behavior and substance use are examples of risk-taking behaviors and constitute deviance that share common causes. Thus, the relationship between substance abuse and risky sexual behavior is spurious (fake). Others hold the view that substance abuse precedes risky sexual behavior, because, for instance, people tend to have risky sex when under influence of substance abuse or because they exchange sex for drugs. Consequently, the latter theoretical perspectives conclude that substance abuse acts as a gateway for sexual behavior (Duke, 2012).

Cooper (2002) also revealed that heavy drinkers are more likely to engage in high-risk sexual behaviors, such as having many sexual partners and engaging in sex without condoms. According to Cooper, problems associated with mixing sex and alcohol have been significantly magnified since the advent of HIV and the realization that HIV is a disease that affects all groups of people, regardless of sexual orientation, age, socioeconomic status, gender, race, or religious affiliation.

Another study conducted in the United States shows that travelers (migratory youths aged from 15-24) were almost twice as likely as non-travelers to exhibit recent heavy drinking, 37% more likely to exhibit recent marijuana abuse, and five times as likely to have injected drugs (Steven et. al., 2011). Steven et al. further suggest that travelers also had more recent sex partners and were more likely to report having casual or need-based sexual partners and combining sex with substance abuse. Steven et al. conclude that differences in sexual risk behaviors are likely attributable to demographic differences between the travelers and non-travelers youths.

Another longitudinal study conducted in United States shows that adolescent substance abuse is significantly predicts risky sexual behavior at age 21 years (Jie et.al., 2002). According to Jie et.al., early binge-drinkers had significantly more sex partners than non-binge drinkers. Late onset binge-drinkers and marijuana users had significantly more sex partners and were less likely to use condoms consistently than those who did not binge drink or use marijuana (Jie et.al, 2002). In the same document Jie et al. explains that experimenters in cigarette smoking, who did not escalate smoking, were more likely to use condoms consistently than nonsmokers. He also further reports that in contrast, the use of other illicit drugs in adolescence did not predict risky sexual behavior at age 21 years.

A study conducted on problems associated with alcohol abuse in Botswana indicated that 24% of adults aged 15–49 years who abuse alcohol are infected with HIV (WHO, 2009). In the same year the study in India has found that sensation seeking as a personality variable was significantly associated with sexual risk taking behavior among heavy alcohol users (WHO, 2009).

2.6. THEORETICAL PERSPECTIVES

Bronfenbrenner's (1979) developmental theory, which focuses on ecological systems and the interaction between the individual and his/her context and Social learning theory of Bandura (1977) are the theoretical framework for this study.

Ecological Model

According to this model risk behavior can be related to individual psychological factors such as self-esteem, locus of control, need for acceptance, anxiety levels and eagerness to act like adults (Millar, 2006). Risk behavior is, however, also closely linked to social and community factors such as access and exposure to substances, social norms that tolerate risk behavior, peer pressure, socio-economic status, educational opportunities, social support and involvement with a social network (Levine, 1998; Jessor, 1992; Plant, 1992).

Social learning Theory

Social learning theory explains both desirable and undesirable behavioral outcomes (Miller, 2002). It includes a broad array of theory and practice in learning and change, and encompasses both cognitive and behavioral approaches. As stated in Miller (2002) cognitive learning assumes that there are psychological factors that influence behavior. However, Social learning theory also holds that behavior is influenced by environmental factors, and not just psychological or

cognitive factors. Thus, social learning assumes that psychological and environmental factors combined to influence the development of specific behaviors. It stresses the importance of attending to and modeling the behaviors, cognitions (e.g., attitudes and beliefs) and emotions of others. It further sees an interactive process between cognitive, behavioral, and environmental influences (Miller, 2002).

From this we can understand that social learning theory can be used to explain the development of substance use /abuse/ and its risky sexual behavior. Theoretically, if an individual never observed the practices of substance use, then those behaviors would never be learned by the individuals (miller, 2002). Once it is adopted, the behavior leads to positive or negative consequences or outcomes which may be risk, e.g., acceptance by the group, sense of power, attention of peers, establishment of a group role that instills a sense of pride, etc.(Miller, 2002).

CHAPTER THREE

3. RESEARCH METHOD

The intention of this research is to assess the practices of substance abuse and its risky sexual behavior among university students. The types of substance abuse; the level of prevalence of substance abuse; the reason why students abuses substance as well as the association between substance abuse and risky sexual behavior among university students were also part of the objectives. In order to achieve this research objective, the researcher decides to obtain the basic information from university students. Accordingly, the planned study area (geographical location), study design, study population, sampling size, sampling techniques, methods of data collection, study variables, data quality assurance (validity and reliability), methods of data processing and analysis of results are explained in this chapter. Ethical considerations for this particular research study are also detailed.

3.1. STUDY SITE

To understand the research problem more clearly, it is necessary to give some necessary background information of the study location in which the study conducted. Accordingly, the study was conducted at Adama Science and Technology University (ASTU). ASTU is located in Adama city which is about 100 kilometers to the south east of the capital city of Ethiopia. ASTU was first established in 1993 as Nazareth Technical College (NTC), offering degree and diploma level education in technology fields (ASTU, 2011). Later, the institution was renamed as Nazareth College of technical Teacher Education (NCTTE), a self-explanatory label that describes what the institution used to train back then: candidates who would become technical teachers for TVET colleges/schools across the country.

The host city, Adama, is much known for its main tourist, commercial and industrial center in the country. The city and its environment are endowed with hotels, recreations centers, small and heavy industries. Practices of substance abuse are the most popular in the city. Students are easily accessible to the practices of these substances. The city is also known for the trafficking abused substances.

3.2. RESEARCH DESIGN

Cross-sectional study designs were employed for this research. This is because as, Creswell (1994) stated that cross-sectional study design is used when the purpose of the study is descriptive, often in the form of survey. According to him usually descriptive study is used to describe a population or a subgroup within the population and to find out the prevalence of the outcome of interest, for the population or subgroups within the population at a given time point. In view of this, the study was adopted the cross-sectional survey to collect quantitative data. Quantitative approaches were used to collect much information from the respondents at a time while informal interviews (qualitative approaches) were used for exhaustive investigation and triangulation for quantitative findings.

3.3. STUDY POPULATION

All undergraduate regular students who were registered for 2012/13 academic year at Adama Science and Technology University at main Campus were the study populations which were about 14,725 students (ASTU, 2012/13). The University has seven schools, namely: School of Business and Economics, School of Engineering and Information Technologies, School of Humanities and Law, School of Natural Sciences and School of Educational Science and Technology Teacher Education in the main campus and two schools at Assela Campus, namely; School of Health and Hospital and School of Agriculture. In the Academic year 2012/13, ASTU

had a total of about 16,300 undergraduate students including Assela schools of Health and School of Agriculture of which about 1,000 post graduate students. The reason why the two satellite schools were not included was that of the geographical differences of the study areas.

3.4. SAMPLE SIZE

Sample sizes were estimated by using Levin's formula of Israel (1992) and Krejcie and Morgan (1970) sample determination techniques. Accordingly, assuming the population (N) of ASTU undergraduate students of the main campus 14,725, the required sample size at 95 % level of confidence and a maximum discrepancy (d) of 5% of the total population, the sample size were determined by using the formula

$$s = \frac{N}{1+N(d^2)} \quad \text{.... Levin's formula}$$

Where; s=the desired sample size

d= the maximum discrepancy (0.05)

N=the total population

$$s = \frac{14725}{1+14725(0.05^2)} = 389$$

Additional 15 % of the desired sample sizes were included to reduce the non response rate which is;

Sample size = [desired sample size (s) + (s*15% of s)]

$$389 + (389 \times 0.15) = \underline{447}$$

Hence, the sample sizes for the study were 447.

3.5.   SAMPLING TECHNIQUES

For this research study multi-stage sampling technique were used in order to select the study sample. First, students were divided into respective schools. Then, they were further stratified based on year of study and gender (sex). Finally, systematic random sampling techniques by using probability proportionate to sample size (PPS) were applied to select individuals in each year of study from the list of students by name in their respective batch. Students from each year of study were selected proportionally to their class size (See Annex 1).

3.6. DATA COLLECTION INSTRUMENTS

Data were collected by using self-administered questionnaires which were prepared in simple English to ensure its consistency. As stated by Creswell (1994), good format of instrument is vital for both simplicity of answering or administering the questionnaire and the quality of the answers in a research process. Considering the ideas of Creswell, the questionnaires were adopted and modified from different literatures and researches conducted on substance abuse and sexual behavior in similar settings (WHO, 2007; Andualem, 2011; Abraha, 2011) based on the objective of the research.

The questionnaire designed to collect the information from the respondents were prepared having four parts by considering logical sequences. The first part tells about demographic variables of the respondents. It includes age, sex, year of study, Residence before joining the university, religion, ethnicity, marital status, monthly income (expenditure) of the respondents. The second part of the designed questionnaire helps to identify practices of substance abuse among respondents which contains eleven (11) questions. The third part of the instrument tells about sexual behavior of the respondents which were six (6) questions. Finally, the last part of the

instrument contains practices of substance abuse with risky sexual behavior which were nine (9) questions.

3.7. DATA COLLECTION PROCEDURE

The overall quantitative data were collected within five consecutive days, except that of informal interview (qualitative). Following every necessary precaution such as securing permission to inter the class and the subjects (sample), the questionnaire was distributed to the selected students (sample) in the classroom by researcher together with data collector and classroom representatives. Some clarifications were made for the respondents by the researcher as the participation is voluntary and they have the right not to fill the questionnaire before they were participated in the research. Finally keeping the confidentiality of data filled by the subject from unauthorized persons, the distributed questionnaires were collected in the next day to avoid time constraints to fill the question in the specified period of time. Informal interviews (qualitative) were also conducted with five key informants (three students, one bar house owner and one Bajaj driver) after the quantitative data were collected. The selections of informal interview participants were purposive hence it was for intensive investigation and triangulation of quantitative results.

3.8. DATA QUALITY ASSURANCE (VALIDITY AND RELIABILITY)

In order to assure data quality, high emphasis were given to minimize errors using the following strategies: First, the instruments were examined by three university lecturers including the advisor of the study to judge the items on their appropriateness of content and to determine all the possible areas that needs modification so as to achieve the objectives of the study. The experts were determined whether the items in the questionnaires and interview guides adequately represent all the areas that need to be investigated. Accordingly, three pre designed questions

were omitted from the questionnaire to insure the content validity of the instruments as supported by Fraenkel and Warren (2000). Secondly, the questionnaire was pretested (pilot test) to insure its reliability. Responses to the instrument include clarity of directions; clarity of questions; relevancy of the question as an important aspect of a major issue; and narrowness or constraint of response. In addition, participants were asked whether any other issues that may be included in the survey.

Accordingly, after the pilot test were conducted some contents of the questionnaires were modified based on its relevance's of the questions to gather the information. In addition, as stated under the title 3.6 of this research, the types of substances abused across the country were identified from different literature sources and listed from one to ten including cocaine, benzene sniffing and heroin. Then after, due to low response rates of cocaine, benzene sniffing and heroin from the pilot study participants, the researcher collapsed into single category as *other illegal substances*.

Finally, the pilot test data were reviewed checked and relevance of the questions in the questionnaire was evaluated for completeness. Subsequent correction and modification was done according to the feedback from the pilot test. Finally, the pretested data results were analyzed by using SPSS to see Cronbach's Alpha results for its reliability. Accordingly, the results show that Cronbach's alpha = 0.738, which indicates a high level of internal consistency (reliability) for the item used as supported by Moskal, B.M., and Leydens, J.A. (2000).

3.9. STUDY VARIABLES

The independent variables were demographic characteristics of the respondents such as age, sex, year of study, Residence before joining the university, religion, ethnicity, monthly income

(expenditure) of the student and practices of substance abuse (khat, alcohol, cigarette, hashish/shisha or other illicit drugs). The dependent variables were inconsistent use of condom and multiple sexual partners.

3.10. TECHNIQUES OF DATA PROCESSING AND ANALYSIS

First, data were coded, edited and entered in to SPSS version 16. Second, the data were checked for error by using SPSS and ready for analysis of result. All demographic variables of the respondents and prevalence of substance abuse were presented by using frequencies and percentage.

Statistical associations were done between substance abuse with selective demographic variables (gender, previous place of residence, school attended before joining the university and current place of residence); Sexual behavior with selective demographic variables (gender, previous place of residence, school attended before joining the university and current place of residence); risky sexual behaviors (inconsistent use of condom) with selective demographic variables (gender, previous place of residence, school attended before joining the university and current place of residence) and risky sexual behaviors (inconsistent use of condom) with substance abuse behavior (Alcohol, Khat, Cigarette, hashsish/Shisha and other illegal substances) by using Pearson's chi-square with 95% confidence intervals to show bi-variate association.

Next, to identify the independent contribution of each variable on practices of substance abuse and risky sexual behavior, binary logistic regression (Adjusted odd ratio) models were used. Finally, the results were evaluated at $P<0.05$. The informal interview data (qualitative) were transcribed into English language word for word, read critically and essential themes were identified. Then ideas were organized into concepts and presented using narratives. The results

of informal interview (qualitative) were presented in discussion part of this research for tri-angulations with the quantitative survey results.

3.11. ETHICAL CONSIDERATIONS

Ethical clearances were secured from the School of Educational Science and Technology Teachers Education for the permission to conduct the study. The students were given any information they need verbally and in writing. Participation was voluntary and they were informed that they could withdraw from the study at any time without explanation. Confidentiality was assured and no personal details recorded or produced on any documentation related to the study.

CHAPTER FOUR

4. RESULTS

In this chapter, the results of the respondents are described according to the following procedures. First, demographic characteristics of the respondents were analyzed by using frequency and percentage statistics. Second, the practices of substance abuse and sexual behavior among the respondents were analyzed by using frequency and bi-variate statistics (chi-square). Finally, practices of substance abuse and risky sexual behavior among respondents are described by using binary logistic regression (Odd Ratio) to show the degree of relationship.

As stated in chapter three, by using Levin's formula, the planed number of samples (subjects) selected to fill the questionnaire were 447 of which 353 were male and 94 were female respondents. Even though the sample sizes were 447, the total number of respondents who were completed the questionnaire correctly and consistently were 426(95.3%) of which 336 were male and 90 were female. The rest (21) respondents were rejected due to incomplete and absence of the respondents during data collection. Therefore, the results were analyzed based on 426 subjects.

4.1. DEMOGRAPHIC CHARACTERISTIC OF THE RESPONDENTS

As stated in chapter three of this research paper, the background information of the respondents include gender, age, year of study, ethnic group, religion, marital status, school attended before joining the university and current place of residence of the respondents. Table-1 shows the background characteristics of the respondents by gender. The study sample includes 78.9 % men and 21.1% women. This was consistent with the university registrar's gender composition proportion report of students in the academic year of 2012/13 (ASTU Registrar Report,

2012/13). The overall age of the sample ranged from 18 to 29 years, with the majority (44.6%) being between 21 to 23 years.

Regarding the year of study, the participants were selected proportionally from first year to fifth year from undergraduate regular students in the academic year of 2012/13. Accordingly, the majority (34.5%) were from first year students. The rest (65.5 %) of the respondents were selected proportionally from 2nd year to fifth year (See Table-1). The number of participants selected from second year and third year were almost similar (21.6 and 20.4% respectively) this is because the number of students in second year and third year almost similar. The other is that, about 82.6% were attended government/public school before they join the university. About 26.7% of female respondents, compared to 14.9% male participants were attended private school before joining the university.

The majority of the respondents (39.7%) were Amahara in ethnicity followed by Oromo ethnic group (34.5%). The rest were from Tigrie (13.1%), Gurage (3.8%) and others (8.9%). About 73% and 14.3% of the total sample were Orthodox and Protestant, respectively, followed by Muslims which were about 9.4% (See Table-1). Regarding the marital status of the respondents, the majorities (80.5%) were never married and about 16.9% were in a relationship. About 31.1% of female participants, compared with 13.1% of male participants were in a relationship status. With regard to the area of original residence, most participants (62.4%) were from urban background and the remaining (37.6%) were from rural areas. About 33.3% of females students compared with 38.7% of males, were from rural areas (See Table-1). Similarly the majority of the respondents (94.6%) were living in campus dormitory during data collection. About 7.8% of female respondents compared to 4.8% male respondents were living in campus dormitory during data collection.

Table -1 Demographic characteristics of the respondents by gender

		Gender		
		Male n (%)	Female n (%)	Total n (%)
Age Range				
	18-20	100 (29.8)	46 (51.1)	146 (34.3)
	21-23	162 (48.2)	28 (31.1)	190 (44.6)
	24-26	46 (13.7)	11 (12.2)	57 (13.4)
	27-29	28 (8.3)	5 (5.6)	33 (7.7)
Year of study				
	1st year	99 (29.5)	48 (53.3)	147 (34.5)
	2nd year	73 (21.7)	19 (21.1)	92 (21.6)
	3rd year	74 (22.0)	13 (14.4)	87 (20.4)
	4rth year	53 (15.8)	7 (7.8)	60 (14.1)
	5th year	37 (11.0)	3 (3.3)	40 (9.4)
Ethnic Group				
	Oromo	126 (37.5)	21 (23.3)	147 (34.5)
	Amahara	124 (36.9)	45 (50.0)	169 (39.7)
	Tigrie	45 (13.4)	11 (12.2)	56 (13.1)
	Guragie	10 (3.0)	6 (6.7)	16 (3.8)
	Others	31 (9.2)	7 (7.8)	38 (8.9)
Religion				
	Orthodox	242 (72.0)	69 (79.7)	311 (73.0)
	Protestant	53 (15.8)	8 (8.9)	61 (14.3)
	Muslim	29 (8.6)	11 (12.2)	40 (9.4)
	Others	12 (3.6)	2 (2.2)	14 (3.3)
Marital Status				
	Single	281 (83.6)	62 (68.9)	343 (80.5)
	In a relationship	44 (13.1)	28 (31.1)	72 (16.9)
	Married	11 (3.3)	---	11 (2.6)
Where have you been grown up?				
	Urban	206 (61.3)	60 (66.7)	266 (62.4)
	Rural	130 (38.7)	30 (33.3)	160 (37.6)
With whom did you grown up?				
	With my father and Mother	248 (73.8)	78 (86.7)	326 (76.5)
	With my mother only	29 (8.6)	8 (8.9)	37 (8.7)
	with my father only	24 (7.1)	2 (2.2)	26 (6.1)
	Others relatives	35 (10.4)	2 (2.2)	37 (8.7)
School attended before joining the university				
	Public/Gov't school	286 (85.1)	66 (73.3)	352 (82.6)
	Private school	50 (14.9)	24 (26.7)	74 (17.4)
Current Place of residence				
	In Campus	320 (95.2)	83 (92.2)	403 (94.6)
	Out of Campus	16 (4.8)	7 (7.8)	23 (5.4)

The respondents were also asked whether they were grownup with their mother and fathers, with father only, with mother only or with other relatives. Accordingly, the result shows that 76.5% were grown up with their Mother and father and about 8.7% of the respondents were grown up with neither of mother nor father. About 2.2% less female respondents, compared with 7.1% of male respondents were grown up with their mother only (See Table 1).

4.2.   ANALYSIS OF DATA

4.2.1. PRACTICES AND PREVALENCE OF SUBSTANCE ABUSE

Table 2 presents the life time and current prevalence of practices of substance abuse among Adama Science and Technology University students. Among the total participants, about 187 (43.9%) had ever abused substances at least once in their lifetime of which 15.5% were female. Out of the total respondents who have ever used substances at least once in their life time, about 92.5% had abused alcohol. The life time prevalence of alcohol consumption of male respondents, compared to females respondents were almost similar (92.4% and 93.1% respectively). About 46% have ever smoked tobacco /cigarette, 67.9% were chewing khat, 26.7% were abusing hashish /shisha and about 10.2% had ever been abusing other illegal substances. Shisha/hashish abusing 72.4% and cigarette smoking 55.2% for female life time prevalence were greater, compared to male who had ever been abusing the said substance (which was 18.4% and 44.3% respectively) (See Table-2A).

Out of the total participants who had ever abused substances in their life time, currently nearly about 81.3% had abuse alcohol and 34.2% were smoking cigarette. Furthermore about 46 % and 20.9% were abusing Khat and Hashish/Shisha respectively. The rest (6.4%) were abusing other illegal substances. Comparing to the life time prevalence of substance abuse with current

prevalence, life time prevalence of substance abuse is greater than that of current prevalence of the respondents (See Table-2).

Table-2A: Life time prevalence of substance abuse among ASTU students

Variable		Male n (%)	Female n (%)	Total (%)
		Gender		
Alcohol				
	No	12 (7.6)	2 (6.9)	14 (7.5)
	Yes	146 (92.4)	27 (93.1)	173 (92.5)
Cigarette				
	No	88 (55.7)	13 (44.8)	101 (54.0)
	Yes	70 (44.3)	16 (55.2)	86 (46.0)
khat				
	No	53 (33.5)	7 (24.1)	60 (32.1)
	Yes	105 (66.5)	22 (75.9)	127 (67.9)
Shisha/Hashish				
	No	129 (81.6)	8 (27.6)	137 (73.3)
	Yes	29 (18.4)	21 (72.4)	50 (26.7)
Other illegal substances				
	No	140 (88.6)	28 (96.6)	168 (89.8)
	Yes	18 (11.4)	1 (3.4)	19 (10.2)

Table-2 B: Current prevalence of substance abuse among ASTU students

Variables		Male (%)	Female (%)	Total (%)
		Gender		
Alcohol				
	No	33 (20.9)	2 (6.9)	35 (18.7)
	Yes	125 (79.1)	27 (93.1)	152 (81.3)
Cigarette				
	No	110 (69.6)	13 (44.8)	123 (65.8)
	Yes	48 (30.4)	16 (55.2)	64 (34.2)
khat				
	No	90 (57.0)	11 (37.9)	101 (54.0)
	Yes	68 (43.0)	18 (62.1)	86 (46.0)
Hashish/ shisha				
	No	132 (83.5)	16 (55.2)	148 (79.1)
	Yes	26 (16.5)	13 (44.8)	39 (20.9)
Other illegal substances				
	No	147 (93.0)	28 (96.6)	175 (93.6)
	Yes	11 (7.0)	1 (3.4)	12 (6.4)

Table-3 presents that the possible reason why students abuse substances. The commonly reported reason for substance abuse according to the data collected are: 31 % to increase effort or academic performance; 27.3% are due to availability of substances around university compound; 26.2% are to get acceptance from others (to be sociable); 15.5% are due to lack of comprehensive knowledge of the danger of substance abuse; 24.1% are due to cultural practice; 62.6% are to get personal pleasure; 27.3% are to increase pleasure during sexual practice; 24.6% are due to peer influence/pressure; 24.1% are due to academic dissatisfaction and finally about 14.5% are excessive pocket money to buy substances.

Table-3: Reason for substance abuse among ASTU students

	Reason	Frequency	Percentage (%)
1	To get personal pleasure	117	62.6
2	To increase effort or academic performance	58	31
3	Availability of substances around university compound	51	27.3
4	To increase my pleasure during sexual practice	51	27.3
5	To get acceptance from others (to be sociable)	49	26.2
6	Due to peer influence/pressure	46	24.6
7	Due to cultural practice	45	24.1
8	Due to academic dissatisfaction	45	24.1
9	Lack of knowledge of the danger of substance abuse	29	15.5
10	Excessive pocket money	27	14.5

Table-4 displays initiator of substance abuse among the respondents. About 71.1% of the total respondents who have ever abused substances are initiated by their peers (friends). About 9.6% of respondents are initiated by their families. The rest 19.3% of the total respondents do not know or not sure who initiated them to abuse substances. From the total participant's or respondents, majority 57.7% have relatives (mother, father, sisters, brother and/or friends) who abuse substances.

Table-4: Initiator and relative for substance abuse among ASTU students

	Frequency (f) (n=187)	Percent (%)
Who initiated you to abuse substances?		
Family members	18	9.6
Friends	133	71.1
others	36	19.3
Have you relatives who abuse substances?		
No	180	42.3
Yes	246	57.7

4.2.2. ASSOCIATION OF SUBSTANCE ABUSE PRACTICES WITH DEMOGRAPHIC VARIABLES

A Chi-square test was conducted to ascertain whether a statistically significant dependency (relationship) exists between substance abuse and selected demographic characteristics variables which includes gender, previous place of residence, school attended before joining the university and current place of residence. As presented in Table-5, there is statistically significant association between lifetime prevalence of substance abuse practices with gender ($\chi^2_{(6.315)} = .012$, P<.05); previous place of residence ($\chi^2_{(18.327)} = .000$, P<.05) and school attended before joining the university ($\chi^2_{(8.807)} = .003$, P<.05); while no significant relationship with current place of residence ($\chi^2_{(.152)} = .696$, P>.05). This implies that substance abuse is significantly dependent on sex of respondents, previous place of residence of the respondents and school attended before joining the university. Therefore a significant relationship exists between the variables (See Table 5).

Table- 5: Life time prevalence of substance abuse with socio-demographic variables of ASTU

Variables	Life time substance abuse n (%)	χ^2	P-Value
Gender			
Male	158 (47.0%)	6.315	.012*
Female	29 (32.2%)		
Previous Place of residence			
Urban	138 (51.9%)	18.327	.000*
Rural	49 (30.6%)		
School attended before joining the university			
Public/Gov't	143 (40.6%)	8.807	.003*
Private	44 (59.5%)		
current place of residence			
In campus	176 (43.7%)	0.152	0.696
Out of campus	11 (47.8%)		

*statistically significant at P< 0.05

Table-6 displays binary logistic regression to show the strength of associated factors in predicting practices of substances abuse. Binary logistic regression was performed to assess if associated factors characterizing the respondents would report the likelihood of their practices of substances abuse. The model contained nine independent variables (gender, year of study, Ethnic group, Religion, Marital status, place of residence before joining the university, close relatives, school attended and current residence). The full model containing all predictors was statistically significant, X' (20, N~ 426) ~ 60.477, $P < .001$, indicating that the model was able to distinguish between demographic characteristics of the respondents contributing to the practices of substance abuse. The model as a whole explained between 13.2 % (Cox and Snell R square) and 17.7% (Nagelkerke R squared) of the variance in practices of substance abuse status, and correctly classified 67.1% of cases.

As shown in Table-6, only four of the independent variables made a unique statistically significant contribution to the model (gender, place of residence before joining the university, close relatives and school attended). The strongest predictors of reporting practices of substance abuse are place of residence before joining the university, recording an odds ratio of 1.986. This indicated that respondents who came from urban areas are about 1.986 times more likely to report practice of substance abuse than those who came from rural areas, controlling for all other factors in the model.

The second strongest odd ratio of 1.963 indicates that female respondents are about 1.963 times more likely to practice substance abuse than male controlling all other factors in the model. The odds ratio of .187 for students who had been grown up with mother and father is less than one, indicating that for every student who had grown up with mother and father are .187 times less likely to report practices of substance abuse, controlling for other factors in the model. Similarly the odd ratio of .445 for students attended government /public school is less than one, indicating for every student who had been attended public / government school is less likely to report practices of substance abuse, controlling for other factors in the model.

Table -6: Binary logistic regression on practices of substances abuse among ASTU students (N=426)

Variable	Have ever used substances		P-Value	Crude OR (95%CI)
	No	Yes		
Sex				
Male	178	158	.020	1.963(1.114,3.458)*
Female	61	29		1
Year of study				
1st year	90	57	.146	.543 (.238,1.238)
2nd year	49	43	.446	.716 (.303,1.691)
3rd year	47	40	.678	.83 (.346,1.995)
4rth year	30	29	.29	.6 (.233, 1.544)
5th year	23	18		1
Ethnic Group				
Oromo	77	70	.087	2.131 (.895, 5.073)
Amahara	106	63	.51	1.342 (.559, 3.222)
Tigrie	26	30	.203	1.901 (.707, 5.113)
Guragie	10	6	.879	1.111 (.286, 4.314)
Others	20	18		1
Religion				
Orthodox	175	136	.628	.735 (.212, 2.552)
Protestant	35	26	.242	.449 .118, 1.715)
Muslim	22	18	.527	.639 .16, 2.557)
Others	7	7		1
Where did you grown up?				
Urban	128	138	.006	1.986 (1.216, 3.242)*
Rural	111	49		1
With whom did you grown up?				
With my father and Mother	195	131	.001	.187 (.073, .482)*
With my Mother only	19	18	.012	.231 (.074, .727)*
with my father only	17	9	.002	.136 (.038, .489)*
others	8	29		1
School attended				
Public/government school	209	143	.008	.445 (.245, .81)*
Private school	30	44		1
Place of residence				
In Campus dormitory	227	176	.759	.865 (.344, 2.175)
Out of Campus	12	11		1

*statistically significant at P< 0.05

4.2.3. SEXUAL BEHAVIOR OF THE RESPONDENTS

A. Description of the respondents sexual behavior

To know the sexual behavior of the respondents, the researcher was asked whether the participants had ever practiced sexual intercourse in their life. If they had ever practiced sexual intercourse in their life time, they were further asked about: their age of first sexual intercourse, the time when they have first sexual intercourse, the reason for first sexual intercourse, with whom did they have practiced the first sexual intercourse and the number of different partners with whom they had practiced intercourse in the past three months.

Accordingly, from the total respondents (426), 44.8 % have ever practiced sexual intercourse during the data collection of which 46.7% were females. The mean ages of the first sexual practices with a standard deviation of (*M=18.2, SD=1.67*). About 30.36 % of the respondents were started first sexual practices before the age of 18. The rest (69.6%) of the sexually active respondents started their sexual intercourse at or after the age of 18. The age of the first sexual practices of female is 35.7% earlier, compared to 28.9% male first sexual practices.

The majority of the respondents (50.3%) started their first sexual intercourse when they were in secondary school. About 9.4% (18) started when they were in primary school. The reset (40.3%) of the respondents started the first sexual intercourse after they had joined the university (See Table-7). About 54.8% of the female respondents, compared to 36.2% of the male respondents started their first sexual practice after they had joined the university (See Table-7).

Table- 7: Descriptive statistics of the practices of sexual behavior with gender variables

Variable	Gender		
	Male n (%)	Female n (%)	Total n (%)
Have ever sexual intercourse (N=426)			
No	187 (55.7)	48 (53.3)	235 (55.2)
Yes	149 (44.3)	42 (46.7)	191 (44.8)
Age of first sexual intercourse (n=191)			
<18	43 (28.9)	15 (35.7)	58 (30.4)
$\geq$18	106 (71.1)	27 (64.3)	33 (69.6)
When did you start your 1st sexual intercourse (n=191)			
When I was primary school	15 (10.1)	3 (1.1)	18 (9.4)
when I was in secondary school	80 (53.7)	16 (38.1)	96 (50.3)
After I joined the university	54 (36.2)	23 (54.8)	77 (40.3)
Reason for the 1st sexual intercourse (n=191)			
marriage	7 (4.7)	----	7 (3.7)
by force	4 (2.7)	13 (31.0)	17 (8.9)
personal desire	80 (53.7)	12 (28.6)	92 (48.2)
peer pressure	50 (33.6)	5 (11.9)	55 (28.8)
to get grade	----	6 (14.3)	6 (3.1)
substance use	3 (2.0)	5 (11.9)	8 (4.2)
Others reasons	5 (3.4)	1 (2.4)	6 (3.1)
With who did you practiced 1st sexual intercourse? (n=191)			
With my girl/boyfriend	82 (55.0)	24 (57.1)	106 (55.5)
With teacher	10 (6.7)	12 (28.6)	22 (11.5)
With stranger	11 (7.4)	5 (11.9)	16 (8.4)
With commercial sex worker	2 (1.3)	----	2 (1.0)
With peers	37 (24.8)	1 (2.4)	38 (19.9)
Don't remember	7 (4.7)	----	7 (3.7)

Out of the 44.8% sexually active respondents the majority (48.2%) have practiced the first sexual behavior to feel their personal desire. About 3.7% of the respondents practiced due to marriage; 8.9% of the respondents were forced to do (by force) first sexual intercourse; about 28.8% of the respondents practiced due to peer pressure; about 4.2% practiced to get grade from their respective teachers because their academic performances were low (all of them were female); about 4.2% practiced due to over intake of substances and forced to do sexual intercourse and the rest 3.1% practiced for unknown reason (See Table-7).

Out of the total respondents who have practiced sexual intercourse, the majority of the respondents (55.5%) had their first sexual practices with their boy/girl friends. About 11.5 % were practiced with their respective teachers; about 8.4% practiced with stranger; about 1.0% practiced with commercial sex worker (all are male respondents). About 19.9% of the participants started their first sexual practices with their peers. The rest (3.7%) don't remember (See Table-7).

B. Association of participants sexual behavior with their demographic variables

Table-8 presents chi-square analysis to indicate the association between practices of sexual intercourse and selected demographic variables. Accordingly, there is no statistically significant association between sexual behavior of respondents with gender difference ($\chi^2_{(.155)}$ = .694, P>.05); previous place of residence ($\chi^2_{(.122)}$ = .727, P>.05) and school attended before joining the university ($\chi^2_{(.092)}$ = .762, P>.05); and with current place of residence ($\chi^2_{(.088)}$ = .767, P>.05). This means that all selected demographic variables have almost equal contribution for the practices of sexual intercourse (See Table-8).

Table- 8: Association of practices of sexual behavior with the demographic variables

Variables	Had ever practices of Sexual intercourse n (%)	χ^2	*P-Value*
Gender			
Male	149 (44.3)	.155	.694
Female	42 (46.7)		
Previous Place of residence			
Urban	121 (45.5)	.122	.727
Rural	70 (43.8)		
School attended before joining the university			
Public/Gov't	159 (45.2)	.092	.762
Private	32 (43.2)		
current place of residence			
In campus	180 (44.7)	.088	.767
Out of campus	11 (47.8)		

*statistically significant at P< 0.05

4.2.4. RISKY SEXUAL BEHAVIOR OF THE RESPONDENTS

Table 7 and 9 present's risky sexual behavior of the respondents. Risk behaviors focused on age at first sexual intercourse, number of different sexual partners, abuse of substances during or before sexual intercourse, partners condom use, sexual intercourse with commercial sex worker (male only), sexual intercourse for economic purpose (female only) and history of sexual transmitted infections. Accordingly, summary of the findings on respondents sexual risk behaviors is presented in Table 7 and 9.

From Table-7, it is evident that about 30.4% of the respondents have started to have their sexual intercourse before the age of 18. The mean age of the first sexual intercourse was 18.2 with a standard deviation of 1.47 (*M=18.2, SD=1.47*). This is very important information because it gives us an indication of risky sexual behavior. Among the 44.8% sexually active respondents,

14.1% have practice sexual intercourse with three or more partners within three months. About 26.2 % of female sexually active respondents, compared with 10.7% of male respondents have more sexual partner within three months. Among these, about 27.2% of the respondents use substances before or during sexual intercourse.

About 71.2 % of the respondents did not use condom during sexual intercourse. About 32.2% of more male respondents, compared with 16.7 % of females, used condom during sexual intercourse. Similarly, about13.6% of the respondent experienced forced sexual intercourse. About 10.1% of male respondents, compared with 26.2 % of females, were experienced forced sexual intercourse. About 24.8 % of male sexually active respondents practiced sexual intercourse with commercial sex worker (CSW). Similarly about 16.7% of the female respondents have ever practiced sexual intercourse for economic purpose. About 6.3% of the respondents had ever experienced with sexually transmitted infections (See Table 9).

Table- 9: Descriptive statistics of practices of risky sexual behavior with gender variables of ASTU

	Gender		Total
	Male n (%)	Female n (%)	
Do you or your partner abuse substances before or during sexual intercourse?			
No	110 (73.8)	29 (69.0)	139 (72.8)
Yes	39 (26.2)	13 (31.0)	52 (27.2)
During the past 3m with how many people you have practiced sexual intercourse?			
not at all	52 (34.9)	2 (4.8)	54 (28.3)
with only one person	55 (36.9)	17 (40.5)	72 (37.7)
with only two person	26 (17.4)	12 (28.6)	38 (19.9)
with three or more persons	16 (10.7)	11 (26.2)	27 (14.1)
Do you or your partners use condom during sexual intercourse?			
No	101 (67.8)	35 (83.3)	136 (71.2)
Yes	48 (32.2)	7 (16.7)	55 (28.8)
Have you ever experienced forced sexual intercourse?			
No	134 (89.9)	31 (73.8)	165 (86.4)
Yes	15 (10.1)	11 (26.2)	26 (13.6)
Have you ever forced someone to engage in sexual intercourse?			
No	129 (86.6)	33 (78.6)	162 (84.8)
Yes	20 (13.4)	9 (21.4)	29 (15.2)
Have you ever had sexual intercourse with sexual CSW (only male)?			
No	112 (75.2)	----	112 (75.2)
Yes	37 (24.8)	-----	37 (24.8)
Have you ever had sexual intercourse for economic purpose (only female)?			
No	----	35 (83.3)	35 (83.3)
Yes	----	7 (16.7)	7 (16.7)
Have you had ever STIs?			
No	140 (94.0)	39 (92.9)	179 (93.7)
Yes	9 (6.0)	3 (7.1)	12 (6.3)

A. Association of Risky Sexual Behavior With Selected Demographic Variable

Chi-square test was conducted to show whether a statistically significant association (relationship) exists between partners use of condom (risky sexual behavior) and selected demographic variables which includes gender, previous place of residence, school attended before joining the university and current place of residence. As shown in table 10, the variable "practices of risky sexual behavior" is statistically significantly higher for respondents who came from urban setting than from rural setting (36.4% vs. 15.7%; $\chi^2_{(9.222)}$ = .002, P<.05) . This implies condom use behavior of respondents who come from urban setting is significant higher than that of students who came from rural areas. Practices of risky sexual behavior also have a significant relation with gender showing that male have significant higher condom use behavior than that of female respondents (32.2% vs.16.7%; $\chi^2_{(3.863)}$ = .049, P<.05).

Table- 10: Association of risky sexual behavior with selected demographic variables of the participants

Variables	Partner use condom (% within variable)	χ^2	P-Value
Gender			
Male	32.2	3.863	.049*
Female	16.7		
Previous Place of residence			
Urban	36.4	9.222	.002*
Rural	15.7		
School attended before joining the university			
Public/Gov't	28.3	.113	.737
Private	31.2		
current place of residence			
In campus	30.0	2.21	.137
Out of campus	9.1		

*statistically significant at P< 0.05

In addition as presented in Table 10 there was no statistically significant association between partner use condom (risk behavior) with school attended before joining the university ($\chi^2_{(.113)}$ = .737, P>.05) and current place of residence ($\chi^2_{(2.21)}$ = .137, P>.05).

B. Association of risky sexual behavior with practices of substance abuse

As presented in Table-11, practices of risky sexual behavior is statistically significantly higher for respondents who abuse hashish/shisha and undefined (other illegal substances) (48.6% Vs 28.8%; ($\chi^2_{(4.401)}$ = .036, P<.05) and 88.9% vs. 30.6%; ($\chi^2_{(12.419)}$ = .000, P<.05) than none shisha/hashish and undefined (other illegal substances) abusers respectively in their life time. This implies that risky sexual behavior (inconsistent condom use behavior during sexual intercourse) is significantly associated with respondents' who abuse of shisha/hashish and other illegal substances during their life time.

There is no statistically significant association between the life time practice of Alcohol consumption ($\chi^2_{(.008)}$ = .928, P>.05), cigarette smoking ($\chi^2_{(.068)}$ = .794, P>.05) and khat chewing ($\chi^2_{(.141)}$ = .707, P>.05) with risky sexual behavior.

Table- 11: Association of risky sexual behavior with life time prevalence of substance abuse of the respondents

Variables	Partner use condom n (%)	χ^2	P-Value
Alcohol			
No	33.3	.008	.928
Yes	35.1		
Cigarette			
No	36.2	.068	.794
Yes	33.9		
Chat			
No	37.9	.141	.707
Yes	34.1		
Shisha/Hashish			
No	28.8	4.401	.036*
Yes	48.6		
Other illegal substances			
No	30.6	12.419	.000*
Yes	88.9		

*statistically significant at P< 0.05

Table-12 presents variation of partner's condom use behavior with current prevalence of substance abuse. The practice of condom use behavior is statistically significant with alcohol consumption ($\chi^2_{(5.492)}$ = .019, P<.05), khat ($\chi^2_{(4.838)}$ = .028, P<.05), shisha/hashish ($\chi^2_{(9.828)}$ = .002, P<.05) and other illegal substances ($\chi^2_{(11.670)}$ = .001, P<.05) except that of cigarette smoking ($\chi^2_{(.106)}$ = .745, P>.05). This implies that partner's condom use behavior is significantly dependent on current alcohol consumption, khat, shisha/hashish and other illegal substances and significant relationship exists between the variables. There was no statistically significant association between current prevalence of cigarette smoking and partner's condom use.

Table- 12: Association of risky sexual behavior with current prevalence of substance abuse of the participants

Variables	Partner use condom n (%)	X^2	P-Value
Alcohol			
No	57.1	5.492	.019*
Yes	30.2		
Cigarette			
No	33.8	.106	.745
Yes	36.7		
khat			
No	25.4	4.838	.028*
Yes	44.8		
Shisha/Hashish			
No	26.7	9.828	.002*
Yes	58.1		
Other illegal substances			
No	30.2	11.670	.001*
Yes	81.8		

*statistically significant at $P < 0.05$

Binary logistic regression is performed to assess the impact of a number of factors on the likelihood that respondents would report as they had a problem with consistent condom use behavior during sexual intercourse. The model contained five independent variables (Alcohol, cigarette, chat, Hashish/shisha and other illegal substances). The full model containing all predictors is statistically significant, X' (5, N~ 117) ~ 29.589, $P < .000$, indicating that the model was able to distinguish between respondents who reported and did not report about consistent use of condom (partner condom use during sexual intercourse). The model as a whole explained between 22.3% (Cox and Snell R square) and 30.8% (Nagelkerke R squared) of the variance in condom use status, and correctly classified 72.6 % of cases.

Accordingly, as shown in Table 13, all the independent variables made statistically significant contribution to the model (Alcohol, cigarette smoking, khat, Hashish/shisha and other illegal substances). The strongest predictor of reporting a problem of non-consistent condom use is Alcohol consumption, recording an odds ratio of 4.996. This indicates that respondents who consume alcohol have over 4.996 times more likely to report a problem of consistent condom use than those who did not consume alcohol during sexual intercourse, controlling for all other factors in the model. The second strongest predictor of reporting problem of consistent condom use was cigarette smoking, recording and odd ratio of 4.673. This indicates that respondents who smoke cigarette have over 4.673 times more likely to report a problem of consistent condom use during sexual intercourse.

The odd ratio of .311, .217 and .147 for khat, hashish/shisha and other illegal substances abuser is less than one, indicating that for every sexual contact respondents who do not abuse khat, hashish/shisha and other illegal substances are .311, .217 and .147 times less likely to report having a risky sexual behavior (inconsistent use of condom), controlling for other factors in the model respectively (See Table-13).

Table -13: Binary logistic regression Variation of risky sexual behavior (partner condom use) with current prevalence of substance abuse among ASTU students (N=117).

Variable	Partner use condom n (%)		P-Value	Crude OR (95%CI)
	No	Yes		
Alcohol				
No	9 (11.8)	12 (29.3)		1.00
Yes	67 (88.2)	29 (70.7)	.005	4.996 (1.643, 15.190)*
Cigarette				
No	45 (59.2)	23 (56.1)		1.00
Yes	31 (40.8)	18 (43.9)	.026	4.673 (1.201, 18.189)*
khat				
No	44 (57.9)	15 (36.6)		1.00
Yes	32 (42.1)	26 (63.4)	.049	.311 (.097, .994)*
Hashish/Shisha				
No	63 (82.9)	23 (56.1)		1.00
Yes	13 (17.1)	18 (43.9)	.019	.217 (.061, .777)*
Other illegal substances				
No	74 (97.4)	32 (78.0)		1.00
Yes	2 (2.6)	9 (22.0)	.037	.147 (.024, .891)*

*statistically significant at P < 0.05

CHAPTER FIVE

5. DISCUSSION

As stated in chapter one of this research, the main intent of this research was to assess the practices of substance abuse and risky sexual behavior among ASTU students. Based on this objective, detailed quantitative survey results were analyzed in chapter four. In this chapter detailed discussion of this quantitative survey concerning the level of the prevalence of substance abuse, the types of substance abuse, the reason for substance abuse, risky sexual behavior and the relationship between substance abuse and risky sexual behavior among respondents is discussed. Informal interviews and related research findings for triangulation is presented.

5.1. PREVALENCE OF SUBSTANCE ABUSE AMONG ASTU STUDENTS

The overall prevalence of substance abuse among Adama Science and Technology University undergraduate students were about 43.9%. This findings were lower comparing with similar study conducted in Haramay University which were about 53.8% (Andualem, 2011) and significant higher comparing with the study conducted in Makale University which were about 20.2% (Kidan, 2011). This indicates that the prevalence of substance abuse is depending on the personal geographical location with different cultural background and accessibility of abused substances. It can also be interpreted that the varying level of this substance abuse prevalence can be due to the general level of health awareness about the problem of substance abuse among university students (WHO, 2011).

Regarding the current level of prevalence of substance abuse in the study area, alcohol accounts about 35.7% following khat chewing which accounts about 20.2%. Cigarette smoking and hashish/shisha abuse accounts about 15% and 9.2% respectively. About 2.8 % students abuse other illegal substances. From this finding one can understand that the types and the most

commonly abused substances were Alcohol, khat, cigarette smoking and hashish/shisha in a decreasing order respectively. This prevalence was significantly higher comparing with the study conducted in Hawassa University which was about 10.0% alcohol, 3.3% cigarette, 6.8% khat and 2.2% shisha (Hawassa U, 2011).

Different literature suggests that alcohol and cigarette smoking were the most commonly abused substance, which was similar with the findings of this study (WHO, Andualem & Kidan, 2011). As compared to other substances the high level of prevalence of alcohol, khat and cigarette abuse may be due to social, cultural and legal acceptability and people use these substances for other ceremonial purposes.

Specifically, the high prevalence of Alcohol abuse maybe due to its place of abuse. It is consumed mainly in hotels, bars and other entertainment centers which could attract adolescents; and more accepted in the society compared to other types of substances. Most alcohol commercials have very attractive panorama. The people in the advertisements are very happy and enjoying their drinks. As a result, students take alcohol to experience what they have already seen on television (Peter, 2006). A response from informal interview also suggests that students abuse poly substance (multiple substances at once) and suggested that alcohol and khat were the gateway substances for others.

5.2. REASON FOR SUBSTANCE ABUSE

In the current study the most common reasons for substance abuse among ASTU students were to get personal pleasure and to increase their academic performance. This finding was consistent with the explanations of social learning theory of sociologist Edwin Sutherland on substance abuse. It suggests that substance abuse is determined by the extent to which a given pattern of

behavior is sustained by the combination of the reinforcing effects of the substance with social reinforcement, exposure to models, meaning through association with peers, and by the degree to which it is not deterred through bad effects of the substance and/or the negative sanctions from peers, parents, and the law (Akers, 1992; Akers et al., 1979). From this theory, one can understand that the extent to which substances will be used or avoided depends on the extent to which the behavior has been differentially reinforced over alternative behavior and is defined as more desirable. In short, we tend to repeat what we like doing.

The other reason were due to availability of substances around university compound; to get acceptance from others (to be sociable); due to lack of comprehensive knowledge of the danger of substance abuse; due to cultural practice; to increase pleasure during sexual practice; due to peer influence/pressure; due to academic dissatisfaction and excessive pocket money to buy substances (see table-3). This finding is supported by the ecological model of Bronfenbrenner's (1979). Ecological model suggests that, risk behavior (substance abuse for instance) is closely linked to social and community factors such as access and exposure to substances, social norms that tolerate risk behavior, peer pressure, socio-economic status, educational opportunities, social support and involvement with a social network (Levine, 1998; Jessor, 1992; Plant, 1992).

Interviews among students who abuse substance also suggests that, though students have multiple reasons for abusing substances as indicated in table-3 of this research paper, non-concern of the university administration is the other possible reason for substance abuse. This could be interpreted to mean that the university rule and regulation are not strict when dealing with substance abuse in the university compound. Alternatively, it could be interpreted to mean that university rules are not strictly adhered and managers do not act decisively.

Concerning the variation of substance abuse with respondents personal characteristics among students in the current study shows that both chi-square and binary logistic regression results shows statistically significant association between prevalence of substance abuse with previous place of residence (Urban or rural), gender (male or female) and school attended (private or government) before joining the university while no significant relationship with current place of residence (see table-5).

This finding was inconsistent with the study conducted by Maithya (2009) among Kenyan secondary school students which suggest that substance abuse is not significantly depend on the previous place of residents while consistent with the study conducted by Adelekan (1999) which suggests that young people in urban areas have more opportunity to try a new abusing substances and are exposed to more influences from peers and the media than the rural youth.

5.3.   SEXUAL BEHAVIOR OF THE RESPONDENTS

The current study shows that about 44.8 % of respondents have ever practiced sexual intercourse before the data collection. From the total respondents who have ever practiced sexual intercourse, 46.7% were females. The mean ages of the first sexual practices with a standard deviation of (*M=18.2, SD=1.67*) which was exactly similar with the study conducted among Haromaya University (Andualem, 2011).

This finding was significantly lower when compared with the study conducted among Walaita Sodo University students which were about 53.3% with mean age of 18.4 with a standard deviation of $\pm$ 1.75 and significantly higher when compared with the study conducted among undergraduate students of higher institution of Ethiopia (country level) which were about 28%

with a mean age of 17.54 and standard deviation of 2.8 (Tefere et al., 2013 and Tariku et al., 2012).

This finding was also much lower than the findings in other countries. The study conducted among university students in Madagascar found that about 80% of students had sexual experience at university (Rahamefy, 2008) and the study conducted among Nigerian University students shows that about (76.8%) (Okafor, 2005). This could be because of cultural difference in relation to sexual activity between the two countries and Ethiopia.

From the total respondents who have ever practiced sexual intercourse, the majority of the respondents (50.3%) started their first sexual intercourse when they were in secondary school and about 9.4% started when they were in primary school. This finding was similar with the study conducted among Jimma University students (Kasaye, 2012). This indicates that a significant number of the respondents who have ever started their sexual intercourse have started their first sexual intercourse at earlier age. This early age initiation of sexual practices prolongs the period of exposure to risk sexual behavior including HIV infection during the reproductive span.

Finding of this study showed that a significant number of students, 54.8% of the female respondents, compared to 36.2% of the male respondents started their first sexual practice after they had joined the university. This finding is almost similar with the study conducted among Hawassa University students and Jimma University (Kasaye, 2012 and Hawassa, 2011).

The chi-square analysis of this research indicates that there was no statistically significant association between practices of sexual intercourse and any of the selected demographic variables (See Table-8). This finding was consistent with the study conducted among Haramiya

University (Andualem, 2011) while inconsistent with the study conducted among Uganda University Student (Agardh et al., 2011). The difference of these findings may be due to the methodological approach of the research.

In the current study, out of the 44.8% sexually active respondents the majority (48.2%) have practiced the first sexual behavior to fill their personal desire. About 3.7% of the respondents practiced due to marriage; 8.9% of the respondents were forced to do (by force) first sexual intercourse; about 28.8% of the respondents practiced due to peer pressure; about 4.2% practiced to get grade from their respective teachers because their academic performances were low (all of them were female); about 4.2% practiced due to over intake of substances and forced to do sexual intercourse and the rest 3.1% practiced for unknown reason (See Table-7). This finding is almost consistent with the study conducted among Mekele university students (Kidan, 2012).

Interviews conducted with three respondents about sexual practices among university students suggest that sexual intercourse is a basic human need and it is something that they can't live without. The ideas of first sexual intercourse for each respondent are different although they agree that sexual practice is a need. The first respondents have his own ideal image on what and how sex is or supposed to be. He states that, "*Sex is something that supposed to be romantic and done with your husband or wife*". Another respondent stated, "*I was started the first sexual intercourse when I was 16 years. For me, sex is a stress relieve. When you go home from campus and you're sick of your assignments.. it is good to pleasure yourself that way. I guess all students agree on this*". From this one can understand that students use sexual activities to get relief from stress.

5.4. RISKY SEXUAL BEHAVIOR

About 30.4% of respondents have started to have their sexual intercourse before the age of 18. This finding was similar with the study conducted among Ethiopian higher education students (Tefere et al., 2013).This is very important information because it gives us an indication of risky sexual behavior.

Among the 44.8% sexually active respondents, 14.1% have practice sexual intercourse with three or more partners within three months. About 26.2 % of female sexually active respondents, compared with 10.7% of male respondents have more sexual partner within three months. This finding was almost consistent with the study conducted among Harameya University (Andualem, 2011) and Hawassa University (Hawassa, 2011).

Interview with second year female students explained that "*there is high prevalence of sexual practice currently in the university. Most students have multiple sexual partners. Especially female students need different benefits including academic as well as economic.*" She further said, "*… There is what we call three to zero or three to three principle that students follow in the university life. This means changing sexual partners each year to end up with three partners before graduating.*"

Another informal interview with male third year students suggests that "*I am surprised with what students do relating to their sexual practices; some students seem as if they came to campus with the primary objective of practicing sexual activity.*" He added, "*I don't think if I would have daughter I will send to the university.*"

Another finding of this study shows that about 71.2 % of the respondents did not use condom during sexual intercourse. About 32.2% of more male respondents, compared with 16.7 % of

females, were used condom during sexual intercourse. This finding slightly lower when compared with the study conducted among Haromay University students (Andualem, 2011).

About13.6% of the respondent experienced forced sexual intercourse. About 10.1% of male respondents, compared with 26.2 % of females, were experienced forced sexual intercourse. About 24.8 % of male sexually active respondents were practiced sexual intercourse with commercial sex worker (CSW). Similarly about 16.7% of the female respondents have ever experienced sexual intercourse for economic purpose. About 6.3% of the respondents had ever contacted with sexual transmitted infections.

This finding was consistent with the informal interview with bar owner in-front of the university compound. He explained that, *"....the students, particularly females, have totally forgotten that they joined the university to accomplish academic duties. Large number of them does not seem going for it. Many Female students come here, and compete with ladies working for commercial sex to and be picked up for sex by young and elderly men either form the town or coming from other places...."*

In addition, it was also consistent with interviews done with Taxi driver in the town. He added, *'many students frequently need contract taxies and leave their phone number with us, with several Taxi and 'Bajaj' drivers. They just give a call; then negotiate the price depending up on how late it is in the night and do their business.'*

The current study displays that practices of risky sexual behavior (inconsistent condom use) is statistically significant higher for respondents who came from urban setting than from rural setting. This implies that students who came from rural area have less awareness about condom use than students who came from urban setting. Similarly practices of risky sexual behavior also

have a significant relation with gender showing that male have significant higher condom use behavior than that of female respondents. This is also implies that male students have more awareness on condom use behavior than that of female students. This finding was similar with the study conducted among Nigerian university students (Okafor, 2005).

This finding was also supported by interview with first year female student. She suggest that *"All of the senior male students are well informed; they try to bribe us by promising they will help us with our study. Most of the time this happens to those who came from rural area or those who had lived in a very controlled family."*

She continued *".....Even female fresh students want to hang out with male senior student; for example one of my dorm mates is at risk because all the time she hangs out with many male senior students. This semester she even performed less because she comes late to the dorm God knows where she spends. Two of her friends don't want her around this is because her friends are scared she might get infected with HIV/Aids."*. From this we can understand that female students and students who came from rural areas are at risk of practicing risky sexual behavior.

5.5.RELATIONSHIP OF RISKY SEXUAL BEHAVIOR WITH SUBSTANCE ABUSE

Both chi-square and binary logistic regression displays there was a statistically significant relationship between current substance abuse (Alcohol, Khat and shisha/Hashish) with risky sexual behavior (inconsistent use of condom) (See Teble-12 and 13). This implies that students who abuse substances are more likely to commit risky sexual behavior than that of non substance abuser. This finding was consistent with much of the study finding in similar setting (Andualem, 2011; Teferi et al, 2013; Kasaye, 2012 and Tigabu, 2011).

Informal interview from second year students suggests that *"…I am second year student, before I joined the university; I was disciplined, innocent, and academically strong. Near the past I fell under the influence of senior students and tried alcohol and khat, thinking that would help me get along with them and make me more popular. Day after day, I came late for class and even missed class."* He further suggests that *"…..After I get drunk, I usually had sex with different females and even I didn't remember the next day. I never felt that my partners are at risk so I not often use a condom…"* From this interview one can conclude that substance abuse practices have significant association with risk sexual behavior.

CHAPTER SIX

6. SUMMERY, CONCLUSION AND RECOMMENDATIONS

In the previous chapter discussions about the empirical findings of this research were discussed. In this chapter, the overall research process of this thesis is summarized and general conclusions based on the findings are made. Furthermore, suggestions for further research are presented. Finally, this chapter concludes with brief recommendations in line with the findings.

6.1. SUMMERY

The main objective of this research was to assess the practices of substance abuse and risky sexual behavior among ASTU students. Specifically, the study was to: asses the prevalence of substance abuse among ASTU; identify the type of abused substances among ASTU students; identify the reason of substance abuse among ASTU students; investigate whether there is a relationship between substance abuse and demographic variables; to investigate whether there is a relationship between risky sexual behavior and demographic variables and determine the relationship between substance abuse and its risky sexual behavior among ASTU students. All the specific objectives were derived in line with basic research question.

In chapter two different literatures concerning the practices of substance abuse and risky sexual behavior were discussed. Theoretical framework for this research was also discussed in chapter two. In chapter three method of this research was discussed. Cross-sectional study designs were employed. In view of this, the study was adopted cross-sectional survey to collect quantitative data from the respondents. Informal interview and observations were used for exhaustive investigation for this study. Sample sizes were estimated by using Israel G.D. (1992), Krejcie and Morgan (1970) sample determination techniques. Multi-stage sampling technique were used

to selected study unit from the total population. Questionnaires were distributed to a total of 447 students while only 426 students were participated with response rate of 95.3%.

Chapter four and five presented details of results and discussion was presented respectively. The results show that over all prevalence of substance abuse among ASTU students were about 43.9% which were lower comparing to the study conducted among Haramay University students and much higher compared to study conducted among Mekele university students. Regarding the current level of prevalence of substance abuse in the study area, alcohol accounts about 35.7% following khat chewing which accounts about 20.2%. Cigarette smoking and hashish/shisha abuse accounts about 15% and 9.2% respectively. About 2.8 % students abuse other illegal substances.

The results of chi-square and binary logistic regression indicates that there is statistically significant association between lifetime substance abuse practices with gender, previous place of residence and school attended before joining the university while no significant relationship with current place of residence (See Table-5 & 6). Concerning the practices of sexual intercourse, the chi-square analysis indicates that there is no statistically significant association between practices of sexual intercourse and any of the selected demographic variables (See Teble-8); while practices of risky sexual behavior (partners use condom) is statistically significant association with previous place of residence which is about and gender which is about.

Practices of risky sexual behavior were also statistically significantly higher for respondents who had ever abuse hashish/shisha and undefined (other illegal substances) than none shisha/hashish and undefined (other illegal substances) abusers respectively in their life time; while practice of

condom use behavior was statistically significant with current alcohol consumption, khat, shisha/hashish and other illegal substances except cigarette smoking (See Table 11, 12 & 13).

6.2.CONCLUSION

Based on the basic research question and objective of this research the following conclusions were made.

- The overall prevalence of substance abuse among ASTU students were about 43.9%. This result were lower comparing to the study conducted among Haramay University students and much higher compared to study conducted among Mekele university students.

- The most commonly abused substances were alcohol, khat, Cigarette and hashish/shisha 35.7%, 20.2%, 15% and 9.2% respectively. This result is varied from the study conducted in other similar settings. From these variations the researcher concludes that prevalence's of substance abuse is depending on the personal geographical location with different cultural background and accessibility of abused substances.

- Prevalence of substance abuse was statistically significant association with previous place of residence, gender and school attended before joining the university while no significant relationship with current place of residence. The result further reviles that there was no statistically significant association between practices of sexual intercourse and any of the selected demographic variables.

- There was no statistically significant association between the first practices of sexual intercourse and any of the selected demographic variables. From this findings the

researcher conclude that all selected demographic variables have almost equal contribution for the practices of sexual intercourse

- Practices of risky sexual behavior (partners use condom) were statistically significant association with previous place of residence and gender. This implies that students who came from rural areas have high sexual risk than that of urban areas and female students have high risky sexual behavior than that of male.

- Practices of risky sexual behavior was statistically significantly higher for respondents who abuse hashish/shisha and undefined (other illegal substances) than none shisha/hashish and undefined (other illegal substances) abusers in their life time.

- On the other hand, the researcher concludes that practice of condom use behavior was statistically significant with current alcohol consumption, khat, shisha/hashish and other illegal substances except cigarette smoking. This implies that condom use behavior was significantly associated with respondents' abuse of shisha/hashish and other illegal substances without depending on the time of practices (Current or ever used).

- Both practices of substance abuse and risky sexual behavior were associated with selected demographic variable. Finally the researcher concluded that risky sexual behavior was also associated with current practices of substance abuse.

6.3.   RECOMMENDATION

This study revealed that prevalence's of practices of substance abuse and risky sexual behavior was high among ASTU students. To reduce the prevalence of practices of substance abuse and risky sexual behavior the researcher recommends the following intervention programs.

A. Behavioral Intervention

As stated in chapter two of this research paper, social learning theory explains both desirable and undesirable behavioral outcomes (Miller, 2002). From this we can understand that social learning theory can be used to explain the development of practices of substance abuse and its risky sexual behavior. Theoretically, if an individual never observed the practices of substance abuse, then those behaviors would never be learned by the individuals (miller, 2002). Once it is adopted, the behavior leads to positive or negative consequences or outcomes which may be risk, e.g., acceptance by the group, sense of power, attention of peers, establishment of a group role that instills a sense of pride, etc.(Miller, 2002). Therefore it is important to implement different primary behavioral intervention program in the university which includes

- **Youth dialogue/School community conversation**: This is a regular forum in which the university community (students, staffs and surrounding community) have dialogue and addresses the issues of practices of substance abuse and risky sexual behavior among targeting groups.

- **Sister informing sister on the prevention of practices of substance abuse and risky sexual behavior (SISPSR) training (selectively for female):** is an evidence-based intervention that targets young women. The model help young women to reduce their sexual risk behaviors and develop assertive communication skills, safer sex negotiation skill and builds confidence in their ability to negotiate and practice risk reduction in real-life sexual situations (self- efficacy).

- **Life skill training**: This is the abilities for adaptive and positive behaviors that enable individuals to deal effectively with the demands and challenges of everyday life.

- **Peer education training**: This is a popular approach for promoting healthy living among young people around the world. Well-designed and well-implemented programs can improve young people's health-related knowledge, attitudes, and skills and their access to health services specifically for prevention of risky sexual behavior.

B. STRUCTURAL INTERVENTIONS

The most effective structural approaches use a combination of strategies that are customized to a given social and institutional context. This approach focuses on the reduction of prevalence's of practices of substance abuse and risky sexual behavior; which will have great contribution to limit the problem. This includes:

- Mainstreaming of practices of substance abuse and risky sexual behavior process that enables management of the university to address the problem of practices of substance abuse and risky sexual behavior in an effective and sustained manner, both through their usual work and within their workplace.

- Generating and Utilization of Strategic Information: this includes policy formulation, synthesis of the problem, design of appropriate intervention for the prevention of practices of substance abuse and risky sexual behavior.

C. Biomedical Intervention

Biomedical intervention is a medical approach that includes the promotion and provision of condom and establishing substance abuse counseling and testing to prevent practices of substance abuse and risky sexual behavior in the university.

- Substance abuse counseling should be given through voluntary bases. It could be provided through campaigns and outreaches or by establishing substance abuse counseling center in the university.

- Condom is a dual protection method used to protect both pregnancy and sexually transmitted infections including HIV. Correct use of condom is a proven highly effective means of protection from HIV infection, STIs and unwanted pregnancy. Therefore the university and other stakeholders should have to work on the promotion and provision of condom for students.

6.4.   IMPLICATION FOR FUTURE RESEARCH

Interesting patterns emerged from this study that are worthy of future research. Future research is needed to better understand practices of substance abuse and risk sexual behaviors of students of higher education institution in Ethiopia. This study revealed that practices of substance abuse are associated with gender, previous place of residence and school attended before joining the university. Future research should further examine practices of substance abuse by gender, previous place of residence and school attended before joining the university and why there might be differences.

Furthermore, this study shows that practices of risky sexual behavior vary by gender and previous place of residence. Another very important finding from this research result was that practices of risky sexual behavior was statistically significantly higher for respondents who had ever abuse hashish/shisha and undefined (other illegal substances) than none shisha/hashish and undefined (other illegal substances) abusers in their life time. In addition, risky sexual behavior was statistically significant with current alcohol consumption, khat, shisha/hashish and other

illegal substances except cigarette smoking. This needs further investigation because this is very important to draw better intervention program for different stakeholder.

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APPENDECES

APENDEX A

DIAGRAM-1 SAMPLING TECHNIQUES

School of E Sc & TTE (863)					School of H & L (1079)				
1st year M= 104, F=31	2nd Year M=60, F=5	3rd Year M=572, F=91	4th year No student Admitted	5th year No student Admitted	1st year M=310, F=164	2nd year M=173 F=77	3rd year M=226, F=66	4th year M=53, F=10	5th year No student admitted
M=3 F=1	M=2 F=0	M=17 F=3			M=9 F=5	M=5 F=3	M=7 F=2	M=2 F=0	
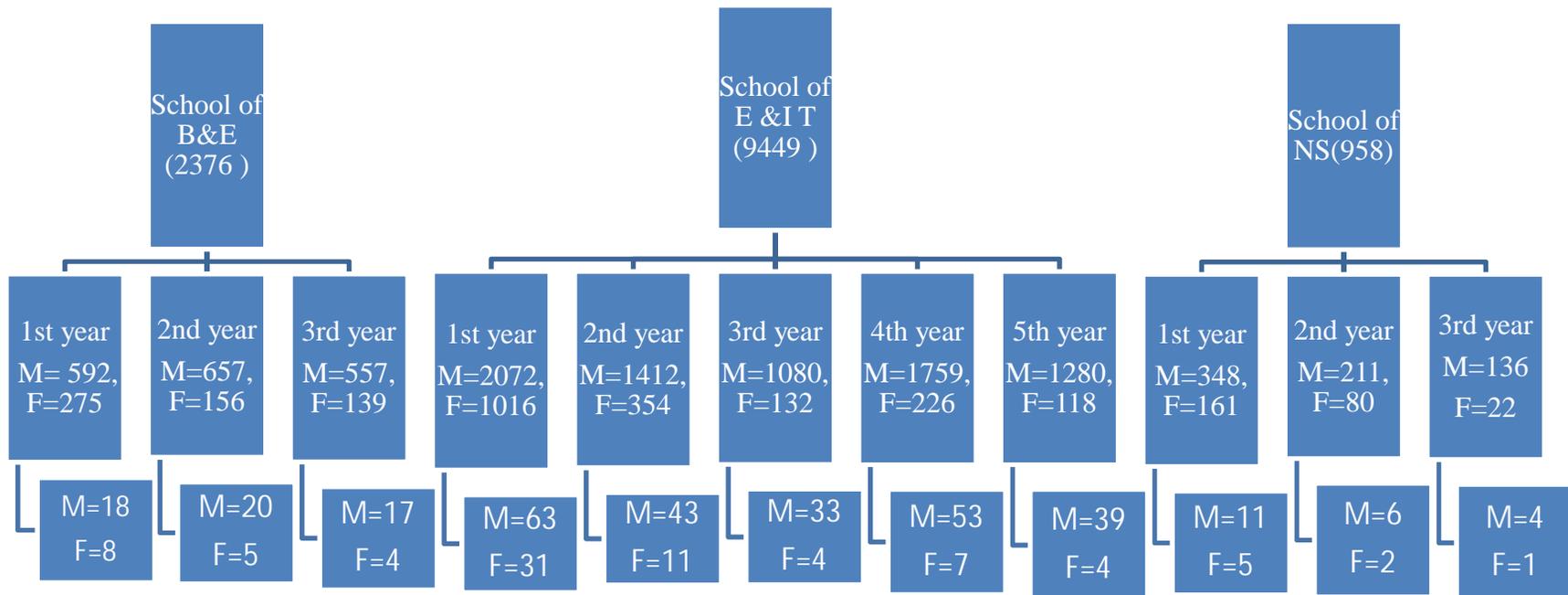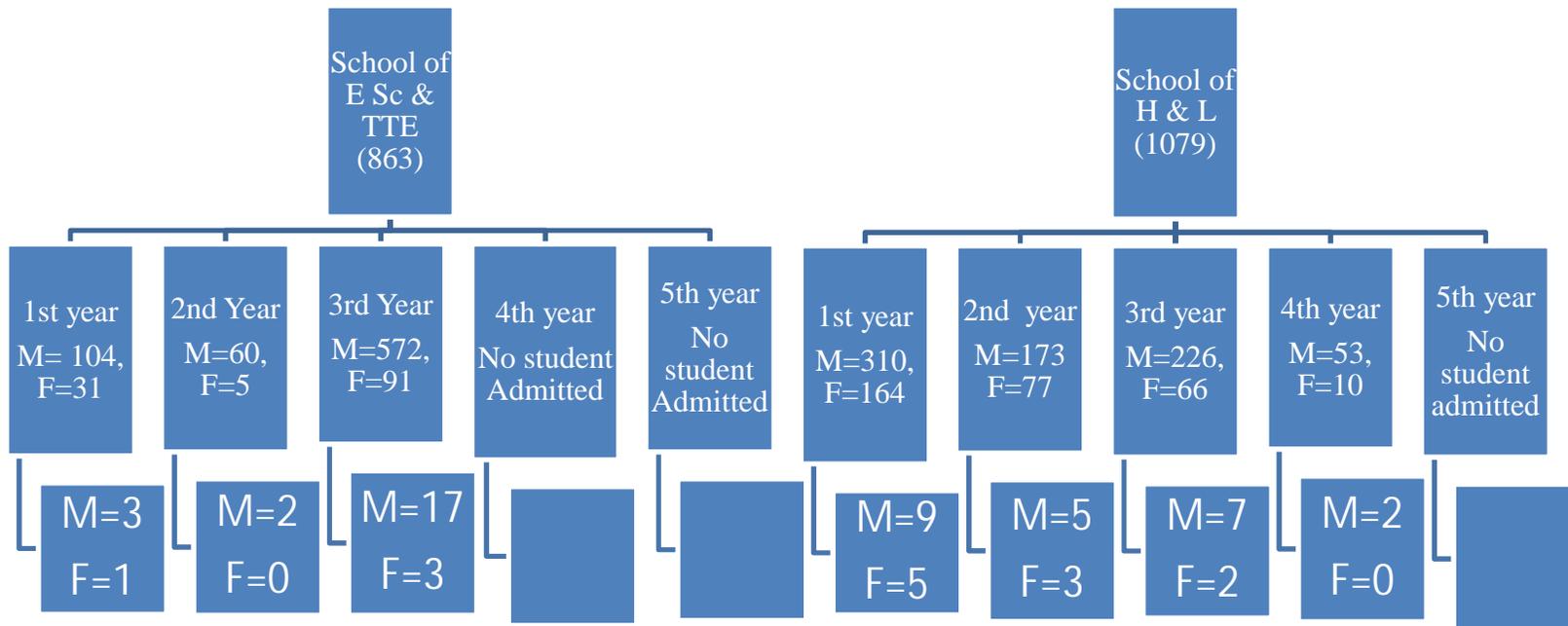
APPENDIX B

Self-reporting questionnaire to assess some practices of substance abuse and risky sexual behavior among university students

Dear all respondents,

This questionnaire is designed to assess some practices of substance use and risky sexual behavior among university students. To meet the objective, your honest and genuine cooperation and willingness to participate in filling this questionnaire is essential. So, I request your truthful and keen participation. The information you have provided is confidential and is only for educational purpose. No information is displayed without the consent of you.

General directions:

- Please encircle your choice or answer in writing for the questions provided
- Please, don't write your name

Thank you in advance for your kind cooperation!!

Questionnaire Code: _____

Date filled in_____

Part I. Personal Information

1. Sex   A. Male   B. Female
2. Age   _____ Years
3. Year of Study   A. 1st year
                         B. 2nd year
                         C. 3rd year
                         D. 4th year
                         E. 5th year
4. Ethnic group   A. Oromo
                         B. Amahara
                         C. Tigrie
                         D. Guragie   E. Others, Please Specify _____
5. Religion   A. Orthodox
                         B. Protestant
                         C. Muslim
                         D. Catholic   E. Others, specify _____
6. Marital Status   A. Single (never married)
                         B. In a relationship
                         C. Married
                         D. Divorced
                         E. Widowed
7. Where did you grow up?   A. Urban   B. Rural
8. With whom did you grown up?
                         A. With my father and Mather
                         B. With my Mather only
                         C. With my father only
                         D. With relatives   E. Others, please specify_____
9. In what type of school did you attend your high school?
                         A. Public/governmental school
                         B. Private School
                         C. Religious /Missionary   D. Others, Specify _____
10. How much pocket money do you get from your parents or relatives per month?
                          A. None
                          B. <150 Birr
                          C. 151-300 Birr
                          D. 301-450 Birr
                          E. 451-600 Birr
                          G. > 600 Birr
11. Where do you live now?
                          A. In campus Dormitory
                          B. Out of campus

Part II. Practices of Substance Use

12. Have you ever used substances such as Alcohol, cigarettes, chat, shisha, hashish or any

others in your life?　　　　　A. Yes　　　　　　B. No

Note: *If your answer for Q13 is 'yes' please respond from Q14 to Q20 accordingly.*

13.	Which one of the following substances you have used?	Please encircle	
A.	Alcohol	Yes	No
B.	Tobacco/cigarette	Yes	No
C.	Khat/chat	Yes	No
D.	Shihsa/Hashish	Yes	No
E.	Other	Yes	No

14.	How often did/do you use these substances?	Please tick under the given frequency.			
		Always	Occasionally	I used to but not now	Not at all
A.	Alcohol				
B.	Tobacco/cigarette				
C.	Khat/chat				
D.	Shihsa /Hashish				
E.	Others				

15. When did you start using these substances?
   A. When I was in Primary School　　　　　　B. When I was in Secondary School
   C. After I joined the university

16.	Why do you use these substances?	Please encircle	
A.	To increase my effort or academic performance	Yes	No
B.	To get relief from tension	Yes	No
C.	To stay awake	Yes	No
D.	Due to cultural practice	Yes	No
E.	To get acceptance from others or to be sociable	Yes	No
F.	To get personal pleasure	Yes	No
G.	To increase my pleasure during sexual practice	Yes	No
H.	Due to peer pressure	Yes	No
I.	Due to academic dissatisfaction	Yes	No
J.	Others, Please specify _____		

17.	Where do you prefer to take these substances?	Please thick under the column			
		Yes, Always	Yes, Almost always	Yes, Sometimes	Not at all/Never/
A.	In dormitory				
B.	In the Hotel				
C.	In Shisha house				
D.	Along the street				
E.	In the shop/kiosk/				
F.	Others, Please specify_____				

		Please thick under the column of your choice			
18.	With whom do you prefer to use these substances?	Yes, Always	Yes, Almost always	Yes, Sometimes	Not at all
A.	Alone				
B.	With my girl/boy friend				
C.	With unknown person (stranger)				
D.	with commercial sex workers				
E.	with my spouse				
F.	with Teachers				
G.	With my peers				
H.	Others, Please specify_____				

19. Who initiated you to take these substances?
    A. Family members   B. Friends   C. Others, Specify _____

20. Do you have relatives (father, mother, sister, brother's and / or friends) who use substances?
        A. Yes   B. No
21. If your answer for Q20 is '*yes*', where does he/she lives?
        A. In the university
        B. Out of university
22. The following table shows the types of substances used among younger peoples. Which is/are mostly used and which is/are not used among the students. Please tick under the given frequency.

		Frequency of substances used by university students			
		Most common	common	Least common	Not at all
A.	Alcohol				
B.	Tobacco/cigarette				
C.	Khat/chat				
D.	Shihsa				
E.	Hashish				
F.	Others				

23.	In your opinion, who are the main agents of these substances?	Please encircle	
A.	Tax/ Bajaj Driver	Yes	No
B.	campus police/ Watchmen/	Yes	No
C.	Construction worker	Yes	No
D.	Shoeshine's (Shoe cobblers)	Yes	No
E.	Kiosks/Shops (Substance's shop) keepers	Yes	No
F.	Hotels or Bars workers	Yes	No
G.	Others, Please specify _____		

Part III. Practices of Risky sexual behavior

24. Have you ever had sexual intercourse?

                A. Yes   B. No.

Note: If your answer for Q26 is 'yes', please answer from question 27 to 31 accordingly.

25. When did you have sexual intercourse first?
    A. When I was in Primary School
    B. When I was in Secondary School
    C. After I joined the university
26. How old were you when you have 1st sexual intercourse?   _____Years
27. What was the reason for first sexual intercourse?
    A. In marriage
    B. Personal desire
    C. By force (against my will)
    D. Peer pressure
    E. To get grade
    F. I have taken substances and forced to do so
    G. To get money   H. others, Please specify _____

28. With whom did you have practiced your 1st sexual intercourse?
    A. With my girl/boy friend
    B. with Teachers
    C. With unknown person (stranger)
    D. with commercial sex workers
    E. With my spouse
    F. With my peers   G. Others, specify _____
29. During the past three (3) months with how many people did you have practiced sexual intercourse?
    A. I have never had sexual intercourse during six months
    B. With only one person
    C. With only two persons
    D. With only three persons
    E. With only four persons
    F. With only five persons   G. With more than five persons

Part IV. Practices of substance use with sexual practices

30. Do you use substances like chat, alcohol, cigarettes, hashish or any other prescribed drugs before or during sexual intercourse?   A. Yes
    B. No

31. If your answer for Q32 is 'yes', which type of substances do you use from the following?

	Types of substances	Please encircle	
A.	Alcohol	Yes	No
B.	Tobacco / cigarette	Yes	No
C.	Khat/chat	Yes	No
D.	Shihsa /Hashish	Yes	No
E.	Others	Yes	No

32. Do you or your sexual partners use condom during sexual intercourse?
    A. Yes, always
    B. Almost always
    C. some times
    D. Never

33. If you have never used condom or haven't used condom, what was the reason?

	The reason I have never used or haven't used condom is	Please encircle	
A.	Not available	Yes	No
B.	Ashamed to ask my partners to use condom	Yes	No
C.	I don't like condom	Yes	No
D.	I have used other contraceptives	Yes	No
E.	Condom decreases satisfaction	Yes	No
F.	I was used substances and stoned	Yes	No
G.	Objection from my partners	Yes	No
H.	I am ashamed to buy	Yes	No
I.	I trust my partners	Yes	No
J.	It bursts during sexual intercourse	Yes	No
K.	My religion prohibition	Yes	No
L.	I didn't think of condom during sexual intercourse	Yes	No
M.	Others, Please specify _____		

		Please respond to the following questions	Please encircle	
34.		Have you ever experienced forced sexual intercourse?	Yes	No
35.		Have you ever forced someone to engage in sexual intercourse?	Yes	No
36.		**Males only:** Have you ever had sex with commercial sex worker?	Yes	No
37.		**Female only:** Have you ever had sex for exchange for economic or other benefit?	Yes	No
38.		Have you ever had sexual transmitted infections (STIs)	Yes	No
39.		If yes for Q40, did you seek medical care from a health institution?	Yes	No

Thank you So much for your cooperation!!